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(BCSEA)**

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## FOREWORD

BCSEA JOURNAL OF EDUCATIONAL ASSESSMENT is being published for the first time in commemoration of the 60<sup>th</sup> Birth Anniversary of the Fourth King Druk Gyelpo Jigme Singye Wangchuck. The publication, providing a wide range of papers and reports on surveys and assessment carried out by BCSEA since its inception in 2011, informs of the findings and recommendations on relevant issues and subjects related to school education and assessment in Bhutan.

*Vocationalization of Secondary Education in Bhutan: A Case Study Report (2012-2013)* by Mr. Arjun Kumar Gurung, BCSEA, looks at the feasibility, effectiveness and challenges of Vocational Skills Development Courses (VSDC) introduced jointly by the Ministry of Education and the Ministry of Labour and Human Resources in some secondary schools in 2011. The survey report on *Syllabus Coverage in Classes XI and XII, Continuous Assessment Practices and Conduct of Science Practical (Class XI and XII)* reveals the common practices followed by schools in contravention to the requirements of the curricula. The article on *National Education Assessment in Bhutan: A Study of Student Achievements in English and Mathematics Literacy at Class X* conducted in 2013 is an abstract of an in-depth large scale assessment that dissects and mirrors the actual health of education particularly in English and Mathematics learning at Class X. The article on the *Use of Teachers' References for Competency Based Assessment (TRCBA) booklets* reports on how useful the guide books on competency based assessment that BCSEA supplies to school on various subjects at various class levels are being found by schools. *An Empirical Case of Assessment System for Class III students in Bhutan*, another report of a short survey on Class III year-end examination highlights some of the issues and suggestions on the system. The *Current Status of the National Assessment System in Bhutan* and the *21st Century Assessment and its Emerging Challenges* are literature review reports on the current trends in educational assessment that are existent and emergent within and outside Bhutan.

BCSEA in its total humility offers this modest publication to His Majesty King Jigme Singye Wangchuck for all the sacrifices he has made for the education of the children of Bhutan. Hopefully, the readers, stakeholders, academicians, educationists and policy makers will find the reports useful in improving the health of the school education and contribute to fulfilling His Majesty's noble aspirations.

BCSEA joins the nation in the prayers for His Majesty's good health, long life and the continued peace and prosperity in the country.

Kinga Dakpa  
Secretary

November 11, 2015

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# Vocationalization of Secondary Education in Bhutan (2012-2013) (A Case Study Report)

(Arjun Kumar Gurung)

## Background

As Bhutan is striving for further economic development, the importance of Vocational Skills Development Courses (VSDC) is increasingly gaining prominence on educational agenda. The government has long emphasized the importance of a skilled labour force for taking forward the economic aspirations of their population. Further, the growing unemployment among the literate youth and a severe shortage of skilled workers in developmental work in Bhutan have raised concerns in the country. To equip young people with the required skills, the Ministry of Education (MoE) felt the need to diversify the secondary school curriculum and to include vocational education so that the literate youth will leave the school with improved occupational competencies and employability. Vocationalization also aims to bring about all round development by providing children with opportunities that enhance their intelligence, emotions, physique, social values, and responsibilities, and cultural and traditional values befitting the society they live in. VSDC was a joint venture project between the Ministry of Education and Ministry of Labour and Human Resources (MoLHR). VSDC as an optional subject in classes IX and X students was launched as a pilot project in five schools in 2011 after a series of consultations between MoE and MoLHR.

Based on numerous concerns on VSDC from the students and the principals of schools offering VSDC and principals of Technical Training Institute (TTI), BCSEA selected three major areas for investigation. The areas were to collect information on number of schools and students taking VSDC, challenges faced by the schools and the TTI institutes, relevancy of vocational course and the implementation of VSDC mode of assessments at TTIs.

In the backdrop of the above, the Assessment and Monitoring Division (AMD), BCSEA prepared three separate survey questionnaires and administered among the principals of schools and TTIs, instructors of TTIs and the selected schools that offered VSDC as an optional subject. A monitoring visit was carried out from August 24 to September 5, 2012. The data and information collected through the survey were compiled and analysed to form a report.

## Purpose of the Survey

The main purposes of the survey were to:

- ❖ collect information on the number of students taking VSDC in different schools;
- ❖ find out the courses offered under VSDC in schools;
- ❖ find out the challenges faced by the schools and the TTIs in implementing VSDC;
- ❖ find out the relevancy of vocational courses in the concern schools;
- ❖ monitor the implementation of mode of assessments for VSDC;
- ❖ develop a paper to be presented during the conference on Vocationalization of Secondary Education for the Council of Board of Secondary Education (COBSE) in India in November 2012.

## Methodology

### a. Survey Tools

- ❖ Survey questionnaires were the main tools used for the quantitative data collection.
- ❖ Structured interviews were conducted with the participants of the survey for the qualitative data.
- ❖ Physical verification of the assessment records, note books, class observations and other relevant documents.

### b. Research Sample

At the school level, 5 principals and the 60 randomly selected students taking VSDC from five schools were interviewed and administered the questionnaires. The survey also covered participants from five TTIs, their teaching faculty members and principals.

## Survey Findings

1. Based on Vocational Skills Development Curriculum Policy Framework, different vocational courses have been offered under specific groups of related skills of different occupations. Students can take up any one of the courses (listed below) based on their interest and aptitudes.

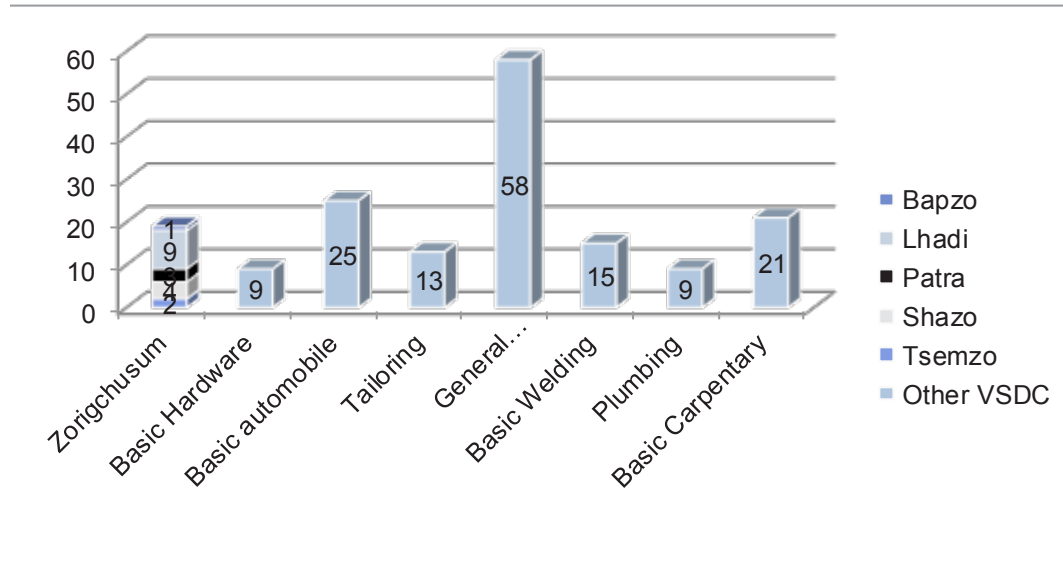
The various vocational skills development courses offered by different schools are:

Name of the Schools	Vocational courses offered	Associated TTIs
1. <b>Khuruthang MSS</b>	<ul style="list-style-type: none"> <li>✓ General Electrical and House wiring</li> <li>✓ Basic Automobile Engineering</li> </ul>	Kuruthang , TTI
2. <b>Bajo HSS</b>	<ul style="list-style-type: none"> <li>✓ Basic Automobile Engineering</li> </ul>	Samthang ,TTI
3. <b>Chumey MSS</b>	<ul style="list-style-type: none"> <li>✓ Basic Carpentry</li> <li>✓ Plumbing</li> <li>✓ General Electrical and House wiring</li> <li>✓ Tailoring</li> </ul>	Chumey ,TTI
4. <b>Rangjung HSS</b>	<ul style="list-style-type: none"> <li>✓ Basic Carpentry</li> <li>✓ General Electrical and House wiring</li> <li>✓ Basic Hardware Training</li> </ul>	Rangjung ,TTI
5. <b>Tashiyangtse HSS</b>	<ul style="list-style-type: none"> <li>✓ Zorigchusum(12 arts and craft )</li> </ul>	Trashiyangtse ,ZCI

2. Vocational Skills Development Curriculum currently offered in the schools and institutes:

Names of the School	Associated Technical Training Institutes
1. <b>Bayling HSS</b>	Institute of Zorigchusum(IZC), Trashiyangtse
2. <b>Rangjung HSS</b>	Rangjung TTI, Trashigang
3. <b>Chumey MSS</b>	Chumey TTI, Bumthang
4. <b>Khuruthang MSS</b>	Kuruthang TTI, Punakha
5. <b>Bajothang HSS</b>	Samthang TTI, Wangdiphodrang

### 3. Different strata of courses taken by the students:



### Positive Traits of the Survey Findings

- The principals and the faculty from all the TTIs were very supportive of the VSDC courses.
- They seemed useful to those students who were willing to take technical trade in future and those who were academically less confident.
- Students felt that VSDC was a scoring subject and also less stressful than normal subject.
- Students seemed to enjoy the courses since they were all learning by doing.
- Students felt that VSDC was very relevant to their day to day life and take this as an opportunity to acquire skills and get a job in future.
- Some students were able to help to their parents during winter break by working on house wiring and making furniture.
- Some students could earn money during their winter break by working in the automobile workshops, construction sites, tailoring shops etc.
- It seemed to solve the shortage of people in the labour market, both skilled and unskilled during winter break, to some extent.
- It provided employable skills and foundation for higher vocational training in future.



- j. Children developed positive attitude towards blue colour work and willingness to earn a living.

### **Operational Difficulties**

- a. Some schools and the TTIs had not received VSDC Modes of Assessment weighting tool so the TTIs did not implement them.
- b. No evidence of assignments and project works were found in all the TTIs.
- c. Since some TTIs did not receive course guide book; they followed the syllabus of the regular trainees. As a result, they did not have prescribed syllabus to teach the students.
- d. Most of the TTI instructors raised concerns on the limited teaching time affecting the link between theory and the practical.
- e. Due to shortage of instructors, TTIs were not able to manage the VSDC classes properly.
- f. Inadequate budget to support the practical and project works.
- g. Some schools faced the problem of transporting students to the TTIs.
- h. Some courses were too vast to be covered in 3 hours of instructional time per week.
- i. Instructors felt that the present syllabi needed refinement by involving the instructors from the field.
- j. Some principals of TTIs also raised concerns on the use of the term, “Vocational”.
- k. Schools faced problems in adjusting the time table since it was an optional subject.
- l. There were no proper textbooks for the VSDC.

### **Challenges and Threats**

- a. The number of students opting for VSDC was already declining which raised the issue of sustainability of the courses.
- b. VSDC still suffered from a “second-class education” image and therefore failed to attract talented pupils compared to that of the general education.
- c. It had a huge financial implication on the Ministry of Education.
- d. In general parents and the students were apprehensive and sceptical about the future prospect of the Vocational Skills Development Courses.

- e. Inadequate financial resources, professional vocational instructors and assessment methods could lead to vocational course being reduced to teaching instead of practising.

**The following recommendations, based on the findings, were drawn:**

- a. Revise VSDC curriculum by involving the instructors from TTIs.
- b. Department of Curriculum Research and Development (DCRD) should design text books and supply them to the schools.
- c. School should consult TTIs in terms of resources and feasibility before they enrol the students in VSDC.
- d. School should attach their multi-skill staff to the TTI centres along with the students so that they supplement the instructors and support the students in their own schools.
- e. Multi-skills staff should be given TOT workshop in terms of delivery of the curriculum.
- f. TTIs should use their own instructors as external assessors to assess the projects of the students to cut down on expenses of conducting external project work assessment.
- g. Ministry of Education should support the schools with adequate budget to implement VSDC successfully.
- h. BCSEA should monitor the assessment of VSDC regularly and give feedback to DCRD.
- i. DCRD and BCSEA should jointly study the Competency Based Test from Department of Operational Standard, Ministry of Labour and incorporate CBT in VSDC wherever possible.
- j. TTIs across the country offering VSDC should follow uniform modes of assessment weighting designed by DCRD and BCSEA.
- k. Different rubrics for assessment should be developed for various VSDC courses.
- l. The schools should submit the internal assessment marks to BCSEA in the standard format by 25<sup>th</sup> November every year.
- m. Assessment records should be maintained by the concerned instructors in the standard format for periodic monitoring by the principals of the schools.
- n. The instructional hours should be at least 3 hours or more in a week to cover the course contents.

- o. Ministry of Education should appoint a full-time coordinator for the overall coordination of the VSDC program in schools and to liaise with MoLHR and BCSEA.
- p. VSDC to be make more accessible, relevant to the pupils especially in the schools of remote areas.
- q. The school should provide proper career counselling and guidance services to students, parallel to the expanding various vocational education programmes.

## **Conclusion**

Vocationalization of Secondary Education in Bhutan programme aims to develop skilled manpower through diversified courses to meet the requirements of mainly the unorganized sectors and to prepare people for the world of work in general through a large number of self-employment oriented courses, not precluding wage employment orientation of many courses. Through diversification into production and service oriented courses, it is desired to reduce the aimless pursuit of higher education and thereby reduce pressure on the tertiary education.

However, Bhutan like many developing countries are facing common challenges in the process of expanding vocational education provision. Some of the challenges are inadequate competent teaching faculties, shortage of facilities, equipment and other materials. Such challenges cannot be overcome in a short period of time, as they are mainly related to overall financial constraints of the country. Therefore, to expand vocational education to students in general education, active cooperation between general schools and TTIs institutions needs to be promoted. To this end, close dialogue and networking between MoE and MoLHR is required that will contribute to expanding vocational education in the general educations.

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# **Syllabus Coverage, Continuous Assessment Practice and Conduct of Science Practical in Schools (2013-2014)**

## **(A Survey Report)**

### **Introduction**

Bhutan Council for School Examinations and Assessment (BCSEA) established in 2011 as an autonomous body replacing the erstwhile BBE envisaging to be an internationally recognized educational assessment and monitoring agency is responsible for monitoring and assessing the health of the education system. BCSEA, as the watchdog of the education system in the country, is to play a pivotal role in promoting quality and standard education through conduct of studies on educational assessment and provide feedback on the findings and recommendations to the relevant agencies for remedies.

As a part of its mandate, Assessment and Monitoring Division (AMD), BCSEA carried out a survey on various concerns faced by the schools, teachers and other stake holders that needed immediate intervention.

Therefore, among a numerous others, BCSEA selected three major areas of concerns for an investigation. The areas were comprehensive syllabus coverage, continuous assessment practice and conduct of science practical in higher secondary schools.

In the backdrop of the above, three separate survey questionnaires were prepared and administered among 63 randomly selected schools. All the professional staff of the BCSEA were deployed for the survey from May 1 – 19, 2013. The data and information collected through the survey were compiled and analyzed to prepare a report.

### **Purpose of the survey**

The main purposes of the survey were to find out:

- ❖ whether the Class XI - XII syllabi were comprehensively covered within the two year course of the BHSEC,
- ❖ whether the CA marks were awarded fairly, uniformly and factually, and
- ❖ whether science practical works were conducted as per the requirement of the syllabus.

## Data Collection

### Tools

- ❖ Survey questionnaires were the main tools used for the collection of the data.
- ❖ Face to face interviews were conducted among the participants of the survey.
- ❖ Physical verification of facilities and records [students note books, CA records, practical notebooks, laboratory records (log books), lesson plans, annual plans, past question papers, school policy and other documents].

## Sample Population

Principals, vice principals, heads of subject departments, examination coordinators, concerned subject teachers, laboratory/library assistants and selected students of the selected schools were administered the questionnaires and interviewed. The 63 selected schools included a mixed number of middle and higher secondary schools, government and private, urban and rural schools across all regions in the country. There were 31 schools from the western region, 14 schools from the central region and 18 schools from the eastern region selected for survey. The 63 schools represented 58.3% of 108 middle and higher secondary schools in the country.

## Survey Findings

### 1. Comprehensive Coverage of Syllabus

The focus for this area of the survey was to find out whether the syllabus coverage of the two year Bhutan Higher Secondary Education Certificate Examination (BHSEC) course (Class XI and XII) was comprehensively made by the high schools. The findings of the survey indicated that while most of the schools surveyed completed both the portions of the syllabi, a significant number of schools tended to skip Class XI portion of the syllabus and teach Class XII portion in the first year of the BHSEC course. The details of the findings are provided in this report.

To be able to obtain the fact about complete coverage of syllabi for Class XI – XII BHSEC course, the survey looked at some of the important aspects of the teaching learning program in the schools. The aspects looked at included the instructional plans, setting of question papers and student works.

### a. Instructional Plans

All the schools covered by the survey prepared the annual teaching plan as prescribed by the syllabus. Similarly, most of the teachers who were surveyed and interviewed reported that the annual plans were strictly followed in the teaching of the subjects. However, 7% of the teachers reported that they could not follow the annual plans prepared by themselves.

Table 1 Annual pan

Preparation of Annual Plan		Adherence to Annual Plan	
Yes	No	Yes	No
57	0	52	5

### b. Setting of Question Papers

The teachers of the middle and higher secondary schools surveyed indicated that the test/question papers were prepared as per the syllabus and the mode of assessment prescribed by the curriculum in each subject. They also prepared and used the test blue-prints for the setting of the test/question papers. However, the physical verification of the past question papers and test blue-prints indicated that the two had very little or no relationship in some schools.

### c. Student Works

The verification of student works such as homework, class work and assignments indicated that most of the annual plans were used by the teachers in the teaching of the subjects. However, there were significant indications to prove that the plans were not followed by the teachers. For instance, 12% of the student works showed that teachers did not follow the plan properly. Most of the learning tasks assigned by the teachers seemed to encompass learning skills and values besides knowledge. There were, however, 17% of the student works which proved otherwise.

### d. Comprehensive Coverage of BHSEC Syllabi

Most of the principals (52%) surveyed and interviewed agreed that their schools resorted to skipping most of the Class XI portions to teach Class XII portions during the first year of the BHSEC course. However, (48%) of them disagreed of resorting to the practice. Only 29% of the principals and other school authorities agreed that they encouraged the practice while the majority of them disagreed about such encouragements.

Those schools found to be skipping some or most of the Class XI portions claimed to have resorted to such practice because of the following reasons:

- ❖ Students request the teachers to complete syllabus early,
- ❖ To improve their school ranking in academic performance at Classes X and XII,
- ❖ Skip the Class XI topics that have no link to Class XII portion,
- ❖ Students get more time to study Class XII portion in winter,
- ❖ To improve the performance of low achieving students admitted in the private schools and
- ❖ Vast syllabus especially for Science and Mathematics.

Some of the schools had been practicing the trend for as many as five years. Besides this, a few schools reported skipping some of the Class IX portions and teaching Class X portions in Class IX.

### **Recommendations from the findings**

1. Teachers need to be provided with proper training on the development of test items and blue prints.
2. The comprehensive coverage of syllabus by schools should be strictly monitored.
3. High school curriculum should be reviewed in terms of progression, mode of assessment and vastness of syllabus.

## **2. Continuous Assessment Practice in Schools**

The purpose of the survey was to find out how the continuous assessments (CA) are carried out and whether the award of CA marks in BCSE was fair and factual. The survey also focused on teachers' knowledge on summative and formative assessment. The findings of the survey indicated that continuous assessment marks were not awarded fairly in most of the schools. The details are as follows:

### **a. School Resources**

The survey also looked at some of the situations such as resources within which they carried out continuous assessment exercises. The finding of the survey indicated that most of the schools had enough textbooks and teaching learning materials for their teaching learning process. While many teachers reported that teachers' guidebooks were used in planning their lessons, a significant number of teachers (31%) reported otherwise.



## b. Continuous Assessment Practices

Most of the teachers (93.65%) of the 63 schools covered by the survey reported to be following the mode of assessment prescribed by the syllabus in each subject. However, there were a few of them who reported that they did not follow the mode of assessment. Almost all these schools not only claimed of having clear policies on CA, but they also reported of keeping proper records along with the rubrics used.

*Table 2 Types of Continuous Assessment carried by the schools*

Area of Continuous Assessment	No. of Schools	Remark
project works	50	
Practicals works	37	
class works/home works	55	
portfolio	30	
class quiz	23	
journal	20	
debate	30	
presentation	36	
dissertation	12	
other records	1	

The teachers of the surveyed schools reported of submitting CA records to the appropriate school authorities (Principal, VP, HOD, Academic Head) in varying manners and frequencies. Some teachers, however, reported of not submitting the records at all.

*Table 3 Frequency of CA records submitted by schools*

Frequency	No. of schools
daily	1
weekly	8
monthly	7
twice a month	2
twice a term	2
quarterly	2
half yearly	25
yearly	2
ad hoc	1
never	10
not responded	2

While most of the schools claimed that their teachers award 20% CA marks to their students as per the assessment records maintained by them, there were a few (16%) that did not award the CA marks as per the records. The CA marks submitted by the teachers were also claimed to be verified by the authorities. However, only about 50% of the schools reported that the CA marks thus submitted were endorsed by the committee, while rest of the schools did not have the practice. Some schools also reported that they did not have any policy that required them to endorse the CA marks.

The final CA marks submitted to BCSEA, in the case of Bhutan Certificate of Secondary Education (BCSE) candidates, were not always the ones submitted by the subject teachers based on the record maintained by them. For instance, 20% of the schools that reported on this issue said that the final BCSE CA marks submitted to the BCSEA were other than the marks submitted by the subject teachers. Some subject teachers also reported that they were not aware of the final CA marks submitted to the BCSEA. Cross-checking of the CA marks maintained by the teachers against the marks submitted to the BCSEA revealed that the marks were manipulated by some authorities including Dzongkhag Education Officers in some Dzongkhags. Many of the CA mark lists collected by the survey team as maintained by the subject teachers confirmed the above facts.

### c. Understanding of Concept of Continuous Assessment

While most of the schools surveyed reported to be engaging themselves in professional development programs on CA at varying frequencies, there were a significant number of schools (24%) that never conducted professional development on CA at all.

*Table 4 Frequency of professional developemnt carried out by the schools*

Frequency of PD	No of schools
Twice a year	20
Once a year	16
Once in two years	4
Never	13
Not responded	10

While many schools reported to have clear knowledge about summative and formative assessments, few schools showed only little to moderate understanding of it. Students also seemed to have inadequate awareness of how they were assessed and awarded

CA marks. For instance, students in 65% of the schools were not aware of how much CA marks they had been awarded in each subject were submitted to BCSEA.

Besides, teachers reported of facing challenges while incorporating continuous formative assessment in their classroom teaching as follows:

- ❖ Remedial measures for students academically weaker students was a challenge due to large class size.
- ❖ Extra co-curricular activities/GNH values incorporation that teachers have to carry out hamper the proper conduct of CFA.
- ❖ Vast syllabus especially in mathematics and science.
- ❖ Tedious task to compute 20% from CA records.
- ❖ Non uniformity of CA policies in schools.
- ❖ Teacher shortage/heavy teaching loads.
- ❖ External interferences (REC/GNH workshops and programs, etc.).
- ❖ Lack of or insufficient knowledge in theory and practice on CA.

### **Recommendations from findings**

- ❖ Teachers should be provided with proper training on assessment.
- ❖ Implementation of the mode of assessment and awarding of CA marks as prescribed by the curriculum should be strictly monitored.
- ❖ School activities should be prioritized and streamlined.
- ❖ Proper deployment of teachers should be done as per the requirement of schools.

### **3. Conduct of Science Practical**

A short survey was also carried out to find out how science practical at Classes IX – XII were being conducted in schools. The findings of the survey indicated both strengths and weaknesses in the conduct of practical. The detailed findings of the survey are outlined.

- a. The survey revealed that only 37% of the schools incorporated the science practical plans in their annual instructional plans. The majority of them did not have proper plans to carry out the practical. Science teachers of these schools justified for not incorporating the practical in their annual plan as follows:
  - ❖ practicals are in their daily lesson plans.

- ❖ practicals are carried out only after mid-term.
- ❖ practicals are conducted simultaneously with the topics.
- ❖ plans are disrupted by other activities.

While, in most schools, the plans were verified by the appropriate school authorities, in some schools, plans were not verified as they did not have any policy.

- b. Many of the schools seemed to have sufficient science teachers. There were few schools that managed the science classes in all levels with a single teacher or used trainee teachers. The laboratory assistants were not adequately trained in almost all the schools (79%). These schools reported that some of the untrained attendants were not even from the science background and were directly recruited and placed in the schools. However, there seemed to be a good rapport between science teachers and the attendants.
- c. It was revealed that practical for Classes IX –XI were rarely conducted in most of the schools as they were not assessed. In some schools, teachers demonstrated the experiments and procedures in the classrooms for these levels because of large number of students. Besides, schools faced numerous challenges while conducting science practical as shown in the table below:

*Table 5 Challenges faced by the schools*

Challenges	No. of schools	Remarks
Time constraint	27	Large class size and teacher overloaded
Equipment shortage	22	Irrelevant and short supply of materials
Chemicals shortage	12	Insufficient budget against expensive chemicals
Lack or inadequate laboratory space	6	Incomplete, too small and old structures

- d. Many schools felt that it was appropriate to be provided with more than one practical specification provided that materials were supplied on time and that schools did not know the exact specification before a BHSEC practical examination. However, 30% of the schools thought it inappropriate to be provided with more than one specification because of the inadequate budget in schools, difficulty in getting the specimen (biology) and wastage of materials. Most of the schools (69%) accepted that they carried out practiced science practical unethically with the specification received from

BCSEA which were meant for the final practical examinations, and also meant to be kept confidential until the day of examination. They seemed to resort to such unethical practice mainly to obtain good results for better school ranking.

### **Recommendations from the findings**

- ❖ Laboratory attendants should be trained.
- ❖ Certain marks could be awarded based on practical records maintained by the students.
- ❖ Adequate budget for science practical should be provided for higher secondary schools.
- ❖ Science practical materials should be relevant and delivered on time.
- ❖ The chemical list prepared by the Dzongkhags should be as per the standard list prescribed by the DCRD (REC).
- ❖ Science laboratory materials supplied to schools should be of standard quality.

### **4. Other Issues**

In the course of conducting the survey, several other issues related to teaching learning programs in schools raised by principals and teachers were also reported in the following section. The issues are categorized into appropriate thematic groups and against the relevant agencies.

#### **a. Curriculum**

- ❖ The new editions of BHSEC Economics textbooks are not updated with the recent economic development of the country.
- ❖ Certain weighting must be given to Class IX-X science practical works.
- ❖ Inconveniences to students and teachers are caused due to lack of standard science textbooks for Class XII.
- ❖ Semicolon used at par with coma in the salutation of a letter (Sir; instead of Sir,) in Class X English Teacher Guide book.
- ❖ Progress report card supplied to schools not as per the mode of assessment.
- ❖ Computer Applications textbooks (BCSE) not updated (office 2003) with the new software.
- ❖ CA marks given from trial marks.

### **b. Examination & Assessment**

- ❖ Some of the BHSEC examination (Physics) questions set by BCSEA are too difficult for students.
- ❖ Lack of steel almirah to keep BCSEA question papers.
- ❖ The schools face difficulty in getting topo-sheets for geography examinations.
- ❖ The specification for science practical like flowers may be assigned based on the availability of the flowers in the locality. Schools in the cold areas are finding it difficult to get the required flowers.

### **c. Teaching-Learning Resources**

- ❖ Some principals are not aware of the budget allocated for their own schools.
- ❖ Schools face issues with quality/standard of science chemicals supplied by Dzongkhag.
- ❖ Reading materials for students are not enough in some schools.
- ❖ Internet facilities are not available in some schools.

### **d. Policy**

- ❖ Class III & VI examinations to be conducted simultaneously with home examinations.
- ❖ BCSEA past question papers are solved for commercial purposes (answers are not standard/ permission?).

## **Conclusion**

The concept of Continuous Assessment (CA) is quite new to the Bhutanese Education System. It was first introduced in 1999 when Curriculum and Professional Support Division (CAPSD) published a teacher's guide called "Continuous Assessment Classes VI to X (Class-work, Homework and Project work)". In 2000, MOE again published "A guide to Continuous Assessment" with particular emphasis on formative assessment (FA).

More than a decade after the implementation of continuous assessment in the school system, findings of the survey indicated that while many schools reported to have clear knowledge on continuous summative assessment (CSA) and continuous formative assessment (CFA), few schools showed only little to moderate understanding of it.

CA comprises CFA and CSA. These two forms of assessments happen simultaneously in the course of teaching-learning process. “Continuous formative assessment encompasses all those activities under taken by teachers and students which provide information to be used as feedback to modify the teaching and learning activities in which they engage” (Black and William. 1988, in Marzano, 2006). It is an integral part of teaching-learning process and should be carried out continuously during the course of instruction. CFA can comprise of a variety of activities such as observation, written feedback, conferences , self assessment , rubrics and keeping records of the learners which would enable the teachers to plan accordingly and do the necessary follow up to support the learning process.

Continuous Summative Assessments (CSA) are cumulative evaluations, used to measure students’ progression after instruction and are generally given at the end of a course in order to determine whether long term learning goals have been achieved. SA consists of school-based assessment (classroom-tests, classwork, homework, project work) and external examinations. Both CFA and CSA are meant to fulfill different purposes of different students. They are necessary for the students in reaching and achieving their goals.

Until the teachers in field are thoroughly trained on the concept of CFA and CSA, and till the schools come up with their own clear policies on CA and other enabling conditions are met, BCSEA will not be receiving the true marks of 20% CA weighting of the students from the schools.

The findings on the comprehensive coverage of syllabi from Classes XI -XII BHSEC indicated that a significant number of schools tended to skip some of the Class XI portion prescribed in the syllabus and taught Class XII portion in the first year of the BHSEC course. The schools would have their own good reasons to justify for carrying out such practices but it has serious repercussions on the quality of education and on the credibility of certification. Thus the concerned agencies have to seriously intervene to mitigate such practices. There are other pertinent issues related to examinations and assessment, curriculum, teaching-learning resources and policy matter that need to be addressed holistically.

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## **National Education Assessment in Bhutan – A Study of Student Achievements in English and Mathematics Literacy at Class X (2013-2014)**

### *(An Abstract)*

National Education Assessment (NEA) is a system-wide assessment programme intended to investigate and monitor the 'health' of the education system. The main purposes of NEA are to provide policy-makers with information to monitor standards over time, to monitor the impact of particular educational initiatives, and to make decisions about resource allocation; to provide schools and teachers with information about school, class and individual pupil performance so that they can make decisions about resource allocation and support learning in the classroom; and to provide national system with information that will help to compare its performance with the international standards.

NEAs and other similar assessments are periodically conducted to address the national needs and concerns related to the quality of education. The process of conducting such an assessment usually takes two-three years to be completed.

The outcomes of such assessments provide system-wide results of:

- ❖ averages and distributions;
- ❖ performance against national norms;
- ❖ performance against expectations;
- ❖ comparison against international bench-marks; information on sub-groups of students including gender, cultural background, location of schools, etc.;
- ❖ information on other variables such as resources in schools;
- ❖ information on specific curriculum areas and
- ❖ a comparison between the performance of students over a period of time.

For Bhutan, this is the fourth time such a study was undertaken to benchmark the quality and standard of national level school education at the key stages of student learning (Class X English and Mathematics - 2006, Class VI Literacy and Numeracy in 2004 and 2011 and Class X English and Mathematics - 2013).

In 2013, 45 schools were randomly selected as the sample population for the NEA 2013 for Class X English and Mathematics. To get a balanced representation of the sampling population, the selection was based on: the degree of both the geographical and demographic settings; from remote to urban location; by government or private type and the school level type (middle or higher secondary). As required by the standard, 40% coverage of the total population of 11,104 students sat for English and Mathematics tests and also responded to Student Questionnaire.

A total number of 165 teachers, from 45 participating schools in 20 Dzongkhags and 2 Thromdeys responded to the teacher questionnaires. In particular, there were 82 English and 83 Mathematics teachers who responded to their respective subject Questionnaire.

The NEA 2013 for Class X English and Mathematics was intended to address the following study questions that relate to the quality of basic education in Bhutan:

- a. What is the level of English performance of Class X students?
- b. What is the level of Mathematics performance of Class X students?
- c. What are the contexts and conditions of student performance?
- d. What are the implications of student performance on curriculum development, teaching pedagogy, resource allocation and policy decisions?
- e. How do we compare the performances of the current Class X students in the two subjects with those of 2006 cohort?
- f. What are the abilities of students to solve different types of questions based on cognitive, affective and cognitive domain of learning?
- g. What are the implications of the student achievements on the quality of Bhutanese education?

## SUMMARY OF FINDINGS

### 1. CLASS X STUDENTS

- a. More than 50% of the parents of the Class X students were farmers with majority of them being mothers.
- b. The majority of the student cohort was from Tshanglakha (25.90%), Dzongkha (23.14%) and Lshotshamkha (18.83%) speaking families.
- c. There were, more or less, an equal number of students in boarding and day-schools with slightly less number of girls being in boarding schools.

- d. Maximum of the day-scholars stayed with their parents (2498) while rest of them stayed with their relatives among whom the maximum walked for 30 minutes or less while significantly very few had to walk more than 1 hour to their schools.

## 2. ENGLISH AND MATHEMATICS LEARNING

- a. Almost all the students did an independent study of English for 30 minutes to more than 3 hours per day with the maximum of them studying for 1-3 hours per day.
- b. Almost all the parents were hugely concerned about the study of their children studying in Class X with 69.63% of them reporting of always providing them with support in their studies.
- c. While almost all the students were highly positive about their school ambience with 70% of them having enjoyed being in their schools, a handful of them felt bored with their schools and some of them even found them frightening.
- d. The schools were supportive in providing remedial classes, additional study measures, guidance and advice, access to learning materials and conducive learning environment. A few students, however, reported that they were *never* given any support.
- e. Most of the students spent 30 minutes to 2 hours on independent study of English a day, while quite a lot of them studied English for only less than 30 minutes. In Mathematics, maximum of the students spent 1-2 hours on independent study with very few having spent 3 hours and more a day.
- f. There were some discrepancies between the English homework assignments and corrections. Those who reported of getting frequent homework also reported of getting their works corrected less in a week. Most of the students were assigned Mathematics homework on a daily basis followed by 3-4 times a week whereas compared to the assignment, homework correction in Mathematics on daily basis was also less.
- g. While the teaching-learning activities such as quizzes, debates and lectures always happened in their English classes, presentations and project works were among the activities that never happened.
- h. Students practised reading, writing and use of dictionary only *sometimes* in their English classes, while very few of them practised them on a *daily basis*.
- i. Most students read 2-3 books in a month with more female students reading more than male students.

### 3. STUDENT VALUES AND ATTITUDES ON LEARNING OF ENGLISH AND MATHEMATICS

- a. Maximum of the students liked both English and Mathematics mainly because of the subjects being interesting and also because of the interesting teaching.
- b. Almost an equal number of the students faced difficulties in speaking and writing skills compared to listening and reading.
- c. Among the various aspects of English learning, grammar topped the children's list of importance of English learning followed by reading, writing, dictionary use, literature and composition.
- d. While the maximum of the students preferred National teachers for both the subjects, a significant number of them had no preference for the nationalities of their teachers.
- e. Majority of the students preferred the literature in Bhutanese context and comparatively a few preferred literature in the western context.
- f. Dzongkha was the most liked subject followed by English, History/Civics and Economics. The least liked subject was Physics with Mathematics closely following it.

### 4. ENGLISH AND MATHEMATICS TEACHERS

- a. The English and Mathematics teachers were mostly in the age group of 21-30 years followed by 31-50 years. A majority of them held the academic qualification of Bachelor's degree, followed by Class XII graduation and master's degree. A maximum of them also held B.Ed professional qualification followed by PGCE/PGDE and M.Ed qualifications.
- b. Close to half of these teachers had 1-5 years of teaching experience, while over a quarter of them had 5-10 years followed by a few having 10-15 years or more teaching experiences. A majority of them had spent 3-5 years, some had 5-8 years, 1-2 years and very few had spent 8 years and above in the same schools.
- c. They had spent between 1-15 years in the schools where they were currently teaching, with 38 of them having spent 1-5 years, 30 of them having spent 5-10 years, 10 below one year and five of them having been in that same school for the last 10-15 years.
- g. The maximum of them had been teaching English for 1-5 years, followed by those who had taught it for less than one year and 5-10 years. More than a quarter of the Mathematics teachers had 2-5 years of experience in teaching Mathematics,

another quarter had only one year experience, less than a quarter of them had 1-2 years, and only some had 5-8 years or more of experience. Of the many Mathematics teachers who also taught subjects other than Mathematics, a majority taught science subjects, a quarter of them taught Computer/IT, while a handful among them also taught other subjects.

- h. More than half of these teachers had 20-25 hours of teaching per week and a little over a quarter of them had 25 hours or more, while about 18% of them had between 10-20 hours.

## 5. TEACHING OF ENGLISH AND MATHEMATICS

- a. Most English teachers spent a maximum of 2-4 hours on lesson planning and 1-4 hours on preparing project works for their students. Majority of them spent 3-5 hours on teaching each of the four strands of which most time was spent on teaching Reading and Literature, but comparatively less time on Listening and Speaking. In Mathematics, more than half of the teachers spent 3-4 hours per week in problem solving skills and less than half of them spent less than one hour on those activities. While many teachers spent 2-4 hours on reasoning and proof, some teachers spent also about an hour on those topics. Some teachers spent 2-3 hours, some spent 1-2 hours and some spent 3-4 hours per week on teaching communication and representation skills.
- b. Majority of the teachers used Test Books and Teachers' Manual as the primary resources for teaching. They made very less use of magazines, newspapers, journals and audio-visual aids, which may have been otherwise very useful in the teaching of English, were rarely used.
- c. Maximum of the teachers assigned home works 1 to 3 times a week while quite a many also assigned home works 2 times a week. Less than half the teachers corrected student works once a week, whereas 66% of them corrected 1 - 2 times a week. The feedback provided were mostly written comments, while grading was the least used.

## 6. ENGLISH AND MATHEMATICS CURRICULUM

- a. Though most of the teachers found the content (quantity) of English and Mathematics syllabi just right and the period allocation adequate, quite a significant number of them found the period allocation inadequate considering the vast syllabus and large class size.

- b. While a lot of the teachers reflected the teaching of English easy and the syllabus content, in terms of quality, being good, they expressed that the novel, 'The Giver,' to be very abstract and difficult for their students to understand. They expressed that the context of 'The Giver' was socially and culturally alien to the Bhutanese students. More than half of the teachers found teaching Mathematics easy and yet 62% responded that the appropriateness of Mathematics concepts in the Class X syllabus was only quite appropriate.
- c. They found the moral-based content of Reading and Literature texts inadequate and teacher guidebooks (references) for teaching of essays and poems lacking appropriateness and relevance. English curriculum on the whole lacked a prescribed grammar syllabus for different class levels. There was also a lack of appropriate resources and guidelines for teaching grammar to students. Further, the time allocated for teaching of grammar was insufficient. The mathematical concepts such as algebra, geometry followed by number and operation, mensuration, and data and probability were rated as the most difficult ones. More than 30 % of the teachers were highly satisfied, but almost 50% of them were not satisfied with the logical progression of the Class X Mathematics curriculum.
- d. While the general mode of assessment was felt to be appropriate, the teachers strongly expressed that the BCSE examination should carry full 100 marks without any marks coming by way of the internal assessment.

## 7. PROFESSIONAL DEVELOPMENT NEEDS AND SUPPORT

- a. About a half of both English and Mathematics teachers had the opportunity to participate in workshops and training during their teaching career and most of those who participated in the workshops got the benefit from some extend to a large extent.
- b. The teachers expressed varying degrees of requirements for additional support to enhance the teaching particularly in ICT use, teaching skills, assessment skills and content knowledge. While they faced difficulties getting the required support from the various responsible agencies, the maximum support that they got was from their colleagues in schools rather than from any of the professional agencies. Besides, the teachers felt the need for timely and adequate orientation on teaching of the new curriculum through appropriate trainings and workshops.
- e. They expressed a strong need to provide sufficient and appropriate teaching/ learning materials to their schools. There was also a need for an equal distribution of the workload among the teachers. Their schools did not adequately facilitate

them in the proper utilization of ICT facilities to support in making teaching of mathematics more effective.

- f. Majority of the teachers did not read even a single book in a week, while some of them read one book in a week and a very few read two books in a week. On the other hand, more than half the teachers engaged themselves 1-3 hours a week in creative writing, while others preferred doing practical or business writing for 1-3 hours a week.
- g. The teachers mentioned specific policy concerns related to teaching at Class X. Similar to the findings in the previous NEAs, the need for proper allocation of resources, workload, teaching time and periods, and timely support from various relevant sources and reducing classroom size were mentioned. They cited their students' weakness or lack of basic foundation in the subjects right from the lower classes which affected their performance at Class X. Easy access of students to electronic gadgets such as scientific calculators and mobile phones coupled with the incompetency of many teachers was a major cause for the decline in the learning interest of students in Mathematics. Student performance in English was hampered by failure to cultivate reading habit in their early learning stages and lack of parental support in this area.

## 8. PERFORMANCE IN ENGLISH

- a. The performance of students in English in the NEA 2013 was 34.72 % which was a mere 20.83 out of 60 full marks on which the paper was set. However, the 2013 English performance shows a marginal improvement of 1.85% above the NEA 2006 national mean score of 32.87%.
- b. The female students at a mean score of 35.08% performed marginally better than the male students with 34.33%.
- c. Schools located in urban settings tended to perform better than schools located in other settings. The English performance of schools located in other than urban areas did not seem to depend on their locations, though semi-urban schools performed poorer than schools in any of the other locations.
- d. While 17 schools had performed above the national mean of 34.72 %, their mean scores were below 40%. Three schools with 25.62 – 29.46 mean score range lingered at the bottom of the performance list.



- e. Chukha, Paro, Bumthang, Thimphu, Sarpang and Trashigang Dzongkhags performed slightly better, with their mean score above the national mean of 34.72%, than the rest of the schools. All the other Dzongkhags performed below the national mean.
- f. The students in the age group of 12-15 years performed much better than those in the age group of 21+ years. It could be concluded, with some confidence, that younger the Class X students, better the performance in English, and as their age increased their performance decreased.
- g. Children of farmers, NGO employees, those in national work force, religious personnel and armed forces in general did not perform as well as the children of other occupational backgrounds who showed varying degrees of comparatively higher performance. Children whose mothers were in the government service performed better than those whose fathers were in the government service.
- h. The day-scholar students outdid the boarders in English performance by a margin of 4.48%.
- i. Those day-scholars who stayed with their parents had better mean performance than those who stayed with their relatives. Those staying with their sisters did much better than those staying with their brothers.
- j. Shorter the distance children had to walk to schools, better was the performance in English. However, those children having to walk 3-4 hours surprisingly did better than those who walked 1-3 hours. But still, those who walked more than four hours performed the worst.
- k. The students whose parents were often or always concerned about their studies seemed to perform better than those who were rarely concerned. However, too much concern and involvement from parents had a dwindling effect on children's performance.
- l. Similarly, those who were often guided and advised by their parents did well. If parents often helped children with their homework, often kept in touch with their teachers, often provided with additional learning resources and always provided with enough teaching time, their children seemed to do very well.
- m. Those who were always taught at home did not do well compared to those who have been rarely taught by their parents. Besides, the students for whom tuitions had never been arranged did very well as compared to those for whom tuitions had been arranged.



- n. Those students who felt that their schools were caring to them performed better than those who felt their schools to be frightening. But those who were bored with their schools did slightly better than those who enjoyed being in their schools.
- o. Students performed well in English, if the schools often provided them with study support. However, too much support or too little support was counterproductive for student performance.
- p. Those who studied 2-3 hours a day seemed to have done slightly better than those who studied more or less hours in a day.
- q. Frequency of homework assignment and correction did not also seem to bear much positive impact on student performance in English. In fact, performance was better for those who were given lesser number of homework in a week. Students whose homework was corrected less frequently did better than those whose work was corrected more frequently.
- r. The performance was better for those who were given various feedback on their home works in the frequency range of sometimes to always than those to whom feedback had never been given.
- s. The performance seemed to be better for the students who read more than three books a month. Those students who always read science fiction and comics tended to perform better than those who always read other types of books.
- t. The students who liked the English subject performed better than those who disliked it. The performance was worst for those who disliked the subject for its being a difficult subject.
- u. Having a preference for the nationality of their subject teachers had an impact on the performance. The students who had no preference between the Bhutanese and Non-Bhutanese English teachers performed much better than those who preferred the Bhutanese ones.
- v. Similarly, the students who preferred to read western context of literature performed markedly better than those who preferred Bhutanese or Indian context of literature.

## 9. PERFORMANCE IN MATHEMATICS

- a. The overall performance of the Class X students in the NEA 2013 Mathematics test was 38.03 out of 100 marks. Unlike in English, boys performed better with the mean score of 39.97 than girls with 36.19 mean score.

- b. The students of higher secondary schools performed better than those of the middle secondary schools.
- c. The students from urban schools (major bulk) performed a little below the national mean of 38.03. However, the students from semi-remote and semi-rural schools performed very well.
- d. Nine Dzongkhags and Thimthrom performed above the national mean and 11 Dzongkhags below the national mean.
- e. The students in the younger age group did better than those in the older age group. The 15-18 year age group having the bulk of the students (4038), for instance, did very well compared to those in the higher age groups.
- f. Students of those parents who were in the government service, working in international organization and corporations had an edge over the students whose parents were in other occupations. Farmers' children did much better than the children of parents working in National Wok Force (PWD), armed forces and in business.
- g. Of the equal number of boarder and day-scholar students, the boarders performed slightly better.
- h. The day-scholar students who stayed with their parents, performed better compared to those staying with their siblings, grandparents or friends.
- i. Those who had to walk less than 30 minutes to schools performed better than those who spent more time walking to schools, though comparatively very less number of students walked more than 30 minutes to schools.
- j. While parental concerns about their children's study did influence the performance in Mathematics, too much concern seemed to be less productive.
- k. Parents providing study time, additional resources, keeping in touch with their teachers and providing guidance and advice were very important for their children to perform well. However, teaching at home and providing tuitions did not help them do any better in the subject.
- l. As in English, school ambience, by way of how students felt being in their schools, seemed to play a significant role in how students performed in Mathematics. Those students who felt that their schools were caring performed much better than those who felt them to be frightening, while those who enjoyed being in their schools tended to do less well as compared to those who felt bored being there.
- m. The students of schools where the learning environment was always or often conducive did well compared to those whose schools were never or only

sometimes conducive for learning. Similarly, if the schools always or even often provided easy access to learning facilities, the performance in Mathematics was better. However, those who were *always* given the additional support and remedial measures did less well.

- n. While independent study between 1-3 hours per day seemed highly productive for students, those who studied independently for less than one hour or more than three hours did not perform well in Mathematics.
- o. Those who were assigned more than three times of homework a week did better than those who were given lesser number of homework in a week. However, lesser the home works were corrected by teachers better was the student performance.
- p. Students performed better in Mathematics, if they were never assigned or assigned project work only some times than those who were always given the project work. Similarly, the performance improved as frequency of lecture and classroom discussions decreased in the Mathematics classes.
- q. Those students who liked Mathematics performed significantly better than who did not like it. The performance was worst for those who found the subject difficult or boring than that of those who did not like it due to other reasons.
- r. Those who found the various learning strands in Mathematics easy and interesting did much better than those who felt them to be difficult and boring.
- s. The students' preference for the nationality of their teachers did not impact much on their performance in Mathematics.

## 10. ANALYSIS OF TEST PERFORMANCE

- a. Student performance in the grammar section with the mean score of 26.50% was poor compared to that of the other two strands of writing (39.40%) and Reading (38.15%).
- b. Students did not perform well in item 1 of short answer section in which over a thousand students scored 0, though it fell under lower difficulty level. Whereas, most students did fairly well in the other two items (2 and 3) of the short answer questions.
- c. The performance in poetry under Section was also generally weak. While Class X English curriculum requires students to learn them at this level, most of the students failed to identify even the figures of speech used in the given poem.
- d. Students failed to recognize the correct modal verbs even though the item was based on the requirement of the syllabus.

- e. Students did not perform well in the grammar questions in the section that required them to re-write sentences using appropriate grammatical rules indicating that the students did not know the basic rules of grammar.
- f. Students also did not do too well in the other three grammar items that required them to edit and re-write sentences correctly.
- g. Majority of the students performed well in writing of an essay on the topic: “*What are the major opportunities and challenges facing Bhutan in the near future?*”. There were some students who wrote good essays by expressing their ideas, thoughts and opinions very clearly and also providing very appropriate illustrations and anecdotes.
- h. Students were quite good in remembering and analytical skills. They seemed to lag in understanding and application skills while being average in creativity, the highest order in the difficulty level.
- i. Students were below average (50%) in all the three major skills of English language. They seemed to be slightly better in reading (38.13%) and writing (39.38%) than in grammar which required them to use application skills.
- j. Female students tend to perform slightly better in all the skills compared to male students indicating that girl students are a slightly better in English.
- k. In Mathematics, students had performed better in Number and Operations followed by Trigonometry and Data Statistics and Probability. The performance in Geometry was very poor.
- l. Male students had performed slightly better than female students in all the content strands.
- m. In multiple choice question (MCQ) items, students did not perform well; their mean score was 31.45.
- n. Students found the short answer type items fairly difficult as 53.3% of the scores fell under moderately difficult category and 46.7% of the scores fell under difficult category. Out of 45 marks, the mean score of the students was 16.3 with the standard deviation of 17.8.
- o. Students also found the extended answer items fairly difficult as 57% of the scores fell under moderately difficult category and 43% of the scores fell under difficult category. The mean score in this section was 17.5 out of 35 with the standard deviation of 10.5.

- p. Unlike in English, the performance in Mathematics declined as the difficulty level of the items increased. Students performed best in items that involved remembering followed by those that involved applying and creating
- q. Performance of both the genders was better in items of lower order of thinking skills than that of higher order of thinking.
- r. Students performed well in *Number and Operations* but very poorly in *Geometry* with the score below 22%. In *Trigonometry, Data and Probability, Algebra and Measurement*, students performed at 35-42%.

## 11. PERFORMANCE COMPARISON

- a. The top 50 performers who had an average score of 66.28 in English had an average score of 86.62 in Mathematics. Similarly, the top 50 performers who had an average score of 50.86 in Mathematics had an average score of 65.5 in English. This indicated that those who were good in English were also good in Mathematics but not vice versa.
- b. Those who performed well in NEA 2013 also did well in the BCSE 2013 examination in both the subjects and conversely those who performed poorly in NEA 2013 also showed poor performance in the BCSE 2013 examination. Though the performance of these students was much better in the BCSE 2013 examination, their performance in NEA was directly proportional to their performance in the BCSE 2013 examination in both the subjects. However, for the BCSE Examinations, 20% of the total marks come from Continuous Assessment (CA) marks awarded by their schools.
- c. The distribution of the scores on the English test was highly positively skewed, with fewer scores on the higher end of the scale meaning which the test was difficult for the students in Class X either due to low cognitive ability or difficulty of the items. However, though difficult, the items were acceptable within the abilities of the students. On the other hand, the distribution of the scores in Mathematics test was slightly positively skewed, with fewer scores on the higher end of the scale indicating that the Mathematics test was relatively difficult compared to the cognitive ability of the students as the mean score fell well below the mean score the range of 50. However, again, Cronbach's coefficient ( $\alpha$ ) of 0.89 and the p-value of (0.3803) suggested that that though difficult, the items were acceptable within the abilities of the students.

- d. Differences appeared between the performance English and Mathematics of NEA 2006 and NEA 2013. The overall mean performance in English had improved between 2006 and 2013 whereas the performance in Mathematics showed a slight decline between 2006 and 2013.
- e. Students performed better in Mathematics than in English test as a large number of students were able to achieve competency and proficiency levels in Mathematics tests. Slightly over half of the Class X Mathematics students achieved minimum competency while a little less than half achieved minimum competency in English; only a much smaller fraction of the students achieved proficiency levels in both the subjects.

### **SUMMARY OF RECOMMENDATIONS**

- a. Schools must ensure that the subjects are allotted adequate number of periods so that teachers could qualitatively complete the prescribed syllabus on time. Workload needs to be distributed equitably among the teachers.
- b. The Ministry should strive further to reduce walking distances between children's homes and schools particularly in remote and rural areas.
- c. Reduce class size to make teaching learning more effective and to make resources available to every student.
- d. Schools should put in place and implement homework policy and rationalize assignment and correction of homework. Both verbal and written feedback must be appropriately provided on student work.
- e. The ministry should consider allocating adequate resources for schools in remote and rural areas.
- f. Classroom lessons should be made more interesting and interactive by using varieties of teaching learning materials and methods for better learning outcome.
- g. Schools must provide students with appropriate study support by providing remedial study measures, guidance and advice, access to learning materials and creating conducive learning environment.
- h. Students need to be encouraged to study independently for 1-3 hours every day.
- i. Concerned authority should facilitate the provision of more support for the children of farmers, arm forces and national work forces in their study.

- j. Schools should pay equal attention and provide equitable support to both girls and boys in their learning.
- k. Find out through research why teachers feel that the BCSE (X) examination should carry full 100 marks without 20% internal assessment marks from the schools.
- l. Provide professional and timely support to the schools and teachers from the responsible agencies.
- m. Parents should be sensitized on the need to be concerned and provide support in their children's study for better learning outcome.
- n. Physical and social ambience of schools must be improved in order to make students learn well and perform better.
- o. Conduct frequent in-service workshops for teachers on content knowledge validation, teaching skills, effective assessment practices and use of ICT in their teaching process.
- p. Continuous assessment and summative assessment for Class X need to be rationalized and clear Continuous Assessment policies across all subjects at Class X with rubrics for 20 marks should be developed and implemented uniformly.

While there was an increase in the achievement in NEA 2013 Class X English by a mean score of 1.86 from 2006, the performance consistency in 2006 was better since the standard deviation was higher in 2013. The mean score in Mathematics had decreased by 0.89 in 2013 compared to that of 2006. The performance in Mathematics cannot really be compared since the cohorts of students and the test items were different. The NEA 2013 test items were designed based on the new Mathematics curriculum.

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## Use of Teachers' Reference for Competency Based Assessment (TRCBA) Booklets (2014) (A Survey Report)

### Introduction

Since the introduction of planned development in the early 1960s, the education system in Bhutan has grown from a mere 400 students in 11 schools to over 1,72391 students in over 554 formal schools (AES, MoE, 2013) around the country. Education today is playing a pivotal role not only in meeting country's human resource needs but also in improving the quality of life, which ultimately contributes to the achievement of GNH.

One of the ten key initiatives under Accelerating Bhutan's Socio-economic Development (ABSD) programs was to create a robust performance management system for students, schools and dzongkhags for achieving quality education in Bhutan. This initiative was planned to establish a Competency Based Assessment system for students, focused on measuring holistic development including the learning outcomes. As mandated under the Charter 7 of the ABSD, one significant initiative undertaken by the Bhutan Council for School Examinations and Assessment (the then Bhutan Board of Examinations) was to develop Teachers' Reference for Competency Based Assessment (TRCBA) as a *Modular Assessment* for the selected subjects for various levels in 2010.

Competency Based Assessment (CBA) is a fairly recent concept introduced into the Bhutanese education system. Not many previously existing literature hold the information on CBA. CBA is the offshoot of the Competency Based Education (CBE) that emerged in the United States in the 1970s. CBE promotes educational goals in terms of precise measurable descriptions of knowledge, skills, and behaviors that the students should possess at the end of a course of study (Richards, J and Rodgers, T. 2001, *Approaches and Methods in Language Teaching*). Competencies consist of a description of the essential skills, knowledge, attitudes, and behaviors required for effective performance of a real-world task or activity. These activities may be related to any domain of life, though have typically been linked to the field of work and to social survival in a new environment. (Mrowicki, L. Page 144, *Approaches and Methods in Language Teaching*).

BCSEA's initiative to start developing and integrating CBA items was to achieve CBE that measures the holistic development of the students through developing items that are not based simply on the ability to recall information or use of formulae or procedures but are focused on specific problems and situations that students need to resolve and apply on what they have learned.

TRCBA booklets were first developed and introduced in all schools for Classes V, VII and IX (Dzongkha, English and Mathematics) in 2011. Over the years, BCSEA has been developing TRCBA booklets for other subjects such as Science, History, and Social Studies for different levels. The table below shows the number of books that has been published and distributed to the schools.

*Table 6 Number of CBA books published over the year*

Year	Name of Books	Levels	No of books Published	No of books supplied to schools
2014	TRCBA, Science	IV	1080	1020
2014	TRCBA, Dzongkha	IV	1080	1020
2013	TRCBA, History	VII, IX	1400	1380
2013	TRCBA, Science	V	850	819
2012	TRCBA, English, Dzongkha, Mathematics	V,VII,IX	-----	-----

These booklets comprise both the model questions and answers that can be used to assess competencies across all the learning strands. They are intended to serve as a reference for teachers while teaching and also to serve as an item bank from which they may draw questions to assess students' competencies in their respective subjects.

In order to find out the accessibility and usability of the TRCBA booklets from school teachers, DEOs/ TEOs from the dzongkhags, BCSEA selected three major areas for investigation. The areas were:

- ❖ delivery and supply of TRCBA booklets,
- ❖ their usage and benefits and
- ❖ the understanding of teachers on the concept of CBA in the schools.

In the backdrop of the above, BCSEA prepared three separate survey questionnaires and administered among the DEOs/TEOs, principals, and teachers at randomly selected schools in all the dzongkhags. Respective BCSEA officials were deployed for the survey from May 4 – 8, 2014. The data and information collected through the survey were compiled and analyzed for this report.

## Purpose of the survey

The main purposes of the survey were to find out:

- ❖ whether the TRCBA booklets were properly delivered to schools by the respective DEOs/TEOs,
- ❖ the usage and benefits of the TRCBA booklets issued to the schools,
- ❖ the relevance of the items and the areas of improvement in the TRCBA booklets,
- ❖ teachers understanding on the concept of Competency Based Assessment and
- ❖ suggestions /comments on the TRCBA booklets.

## Methodology

### a. Research Tools

- ❖ Survey Questionnaires were the main tools used for the quantitative data collection.
- ❖ Structured interviews were conducted with the participants of the survey for the qualitative data.
- ❖ Physical verification of the TRCBA booklets, library records, store log books and other relevant documents.

### a. Survey Sample

At the Dzongkhag level, DEOs/TEOs, and ADEOs were interviewed and administered the questionnaires. At the school level, principals, vice principals, and the concerned subject teachers of the selected schools were interviewed and administered the questionnaires. The survey covered 72 schools from the western region, 61 schools from the central region and 54 schools from the eastern region. The 187 sample schools for the survey included 72 primary, 40 lower secondary, 48 middle secondary and 27 higher secondary schools of government and private, urban and rural schools across all regions in the country. A total of 819 teachers and 187 principals/ vice principals also took part in the survey.

### b. Limitations of the survey

The survey entailed data collection from a limited range of stakeholders. The sampling of schools was purposive and the distribution was done according to regions and the level of schools. More focus was on lower secondary schools. Owing to time and

budget constraints, only 187 schools could be surveyed with 817 teachers and 187 principals/vice principals surveyed using qualitative and quantitative methods of data collection. The findings on all the variables from the survey were generalized as per their range and scope.

## Survey Findings

### 1. Supply of TRCBA booklets to the DEOs/TEOs office

The focus for this aspect of the survey was to find out whether the printing firm had delivered the TRCBA booklets to DEOs/TEOs offices. The findings of the survey indicated that 83% of the DEOs/TEOs received TRCBA booklets. However, there were three DEOs/TEOs from Trashigang, Thimthrom and Haa dzongkhags who claimed of not receiving the booklets. The findings of the survey also indicated that Dzongkhags which received the booklets had delivered the TCRBA booklets to various schools under their jurisdictions and maintained records of the handing-taking of the booklets with the school authorities. It was also found out that 86% the booklets were either collected by the school principals or by any of the school staff. In very rare (7%) cases were the books sent to schools through posts.

### 2. Supply and Receipt of TRCBA booklets in the schools

The intention here was to find out whether the principals were aware of the TRCBA booklets supplied by the Dzongkhags /Thromdays office. And also to find out whether the schools had maintained any record of TRCBA booklets received from BCSEA. The findings revealed that 90% of the school principals were aware of the booklets. However 10% of the school principals claimed of not receiving such books from their respective Dzongkhags, and therefore, they were not aware of the booklets. The findings also indicated that 56% of the schools received the booklets from the DEOs/TEOs office followed by post (18%), through other persons (6%) and through school staff (5%).

The findings also indicated that 73% of the schools that received the booklets had maintained the records, but 27% of the schools did not have any records. The findings also indicated that the subject teachers (30%) mostly took the responsibility of the booklets followed by school librarians and store in-charge (29% each) and the principals (1%).

### 3. Relevancy of the items in TRCBA booklets

The focus area in this question was on the relevancy and competency of items in the booklets. The survey covered the teachers teaching English, Dzongkha, Mathematics and History in Classes V, VII and IX.

Out of 819 teachers surveyed, 63% of the teachers were aware of the supply of the booklets in their schools. However, 37 % of them said that they were not aware of such booklets. The reasons could be either the school had not received the booklets at all or the booklets were kept in the school library, in the book stores or in the principals' office.

On the relevance and the competency of items in the booklets, the finding indicated that 32% of them found it very relevant, 28% of them found it just relevant, 4% of them found it quite relevant, 2 % of them found it not relevant at all and 35% of the data was not valid. The reasons were that the schools did not receive them and even if they did, the teachers had not used the booklets.

#### **4. Re-enforcements of Bloom's Cognitive six levels of thinking through items in TCRBA booklets**

The participants were asked if the items in the booklets reinforced the six levels of thinking of the Bloom's Taxonomy. The findings showed that 52% of them found that the items in the booklets very much in support of the six levels of thinking, and 12% of them found the items in the booklets partially supporting the six levels of thinking. However, 0.2% of them found that the items in the booklets did not at all reinforce the six levels of thinking.

#### **5. Usefulness of the items in TRCBA booklets**

On the usefulness of the items, the findings indicated that 41% of them found them very useful and 18% of them always used them in their teaching-learning process. About 23% of them found them quite useful and 43% of them used them sometimes in their teaching-learning process. A handful (1%) of them reported that the books were not useful and they never used them at all in their teaching process. The reasons could be the teachers were not aware of the booklets or they were comfortable using only the text-books supplied by the DCRD (REC).

The survey also focused on the usage of booklets by the concerned subject teachers .The findings showed that 79% of them used them for framing test items, 37% of them while making daily lesson plans, 56% of them while teaching lessons, 16% of them referred them while making block plans and yearly plans and 3% of them did not use them at all.

#### **6. Areas of Improvement in TRCBA booklets**

The survey was also intended to collect teachers' suggestions for improving the booklets on different areas. About 25% of the teachers felt that the items in the booklets needed improvement in terms of their competencies (knowledge, skills, concept and values) and 18% of them felt the need to improve the cognitive complexity. The items also required to focus on appropriate intellectual activity range from simple recall of facts to problem

solving, critical thinking and reasoning. Some (23 %) of them found that the model answers needed refinement and 9% of them found the use of language needed to be more appropriate and enriched. The items should be stated in simple, clear language, free of non-functional materials and extraneous clues. However, a significant (19%) of them felt the booklets do not need any improvement.

### **7. Teacher's understanding on Competency-based Assessment Concept**

On the understanding of CBA concept, the surveyed teachers gave varied opinions. A handful of them had little understanding of the concept of CBA. A significant number of them had no idea on the concept of CBA. However, their opinion on the concept were varyingly rich:

- a. it is an assessment based on children's competency and their ability thereby assessing their level of thinking throughout the learning process,
- b. it is an assessment that provides authentic assessment of the learners,
- c. CBA prepares the learners to face the real life situations and apply the skills beyond the classroom situations,
- d. Is a reference for framing questions of all levels of thinking, test blue print and a guide to prepare good items,
- e. CBA helps the teachers to find out the learning outcomes of learners,
- f. a quality assessment, as all levels of content validity can be seen,
- g. helps to generate new ideas for setting good items,
- h. it is a supplementary guide to assess student understanding,
- i. evaluates the wisdom imparted by the teachers to the children,
- j. helps in assessing academic performance of the children,
- k. contains systematic set of exemplary questions and
- l. helps in planning lesson and ensures effective teaching.

### **8. Any other suggestions/comments on the TRCBA booklets**

Most of the teachers suggested that:

- a. they could also be made available in braille format so that the students and teachers of the visually impaired could use them,
- b. develop and provide TRCBA booklets for all subjects for all levels,

- c. TRCBA booklets need to have more questions from all the units,
- d. should have questions as per Class X question pattern,
- e. most of the teachers are not aware of the concept of CBA and therefore require orientation on it,
- f. more copies should be supplied in the schools where the student population is large,
- g. need more number of model answers for the open-ended items,
- h. develop TRCBA booklets for Classes VII to XII (History subject),
- i. there are mismatched information (dates in textbook are different - for example, Phajo's arrival in TRCBA booklet),
- j. minimize spelling mistakes in the TRCBA booklets and
- k. the schools should be notified upon the introduction of TRCBA booklets in any subject.

## Conclusion

The finding indicated that most of the teachers in the schools found the booklet very useful in their daily teaching learning process. The study also revealed that few Dzongkhags did not receive the booklets. As a result, teachers in few schools did not see the booklets at all.

Data triangulation pointed out to be a useful technique as it helped to compare and contrast claims and ascertains in one data set with those in the other. The process helped to confirm the validity of the findings from the survey.

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## **End of the Year Testing and Weighting - An Empirical Case of Assessment System for Class III students in Bhutan (2014) (A Survey Report)**

### **Abstract**

Bhutan's education journey began with only a few hundred students in the early 1960s to about 200,000 students studying in over 600 schools and institutes spreading across the length and the breadth of the country as of 2014. The Education system has undergone series of transformation in the form of policy changes, adaptation to modern approaches of pedagogy, curriculum and assessment in order to meet the emerging challenges and opportunities arising due to globalization and rapid technological changes.

Despite numerous efforts, the Bhutanese Education and its Assessment system have been under severe criticism from different stakeholders. The research studies carried out by Royal Education Council (REC, 2008) and National Education Assessment (NEA, 2003), for instance, revealed that majority of the students are unable to understand the core concepts and apply knowledge to real-life situations across grades and subjects.

In its attempt to address some of such issues, the Bhutan Council for School Examinations and Assessment (BCSEA) initiated the year-end testing as a Competency Based Assessment for Class III and VI as a standards-referenced system. It would measure the mastery of students learning competencies across all subjects and would also allow them to demonstrate the skills that they have acquired.

However, with the current year-end test weighting in Class III, there are some major issues. As a result, BCSEA carried out a survey in 89 schools across the kingdom in order to authenticate these issues. The findings of the survey indicated that with the current practice of low weighting, it was very difficult to assess students learning and measure their performance. Based on the findings, the paper presents implications and recommendations for better implementation of Class III year-end test policy.

## Introduction

Assessment can be defined as the collection of information about student performance for a purpose. In education, students are generally assessed for the purpose of improving their learning, monitoring and certifying their performance or achievement. Teachers collect information about student performance in numerous ways.

At the highly structured end, there are examinations, published tests and tests such as national and state-based testing programs. These are highly structured, in that, the conditions of administration are tightly controlled and standardized; the tests have been through rigorous test construction processes; etc. (Assessment, Standards-Referencing and Standard Setting: Tognolini and Davidson, pg.3)

However, the assessment in the Education System of Bhutan for the last 100 years has always been a constant source of debate among professionals and educationists. But the policy states that assessment systems are quality measures that cater to a number of requirements of the education system. These can be used to measure overall system efficiency as well as individual students' performance (NEP: MoE. March 2012, pg. 21).

On this setting, in order to evaluate the all-round development and progress of the students, year-end examination at Class III called Competency Based Assessment Test (CBAT) was introduced in 2011. CBA was an offshoot of Competency Based Education (CBE) which was a functional approach to education that emphasized life skills and evaluated mastery of those skills according to actual learner performance. It was defined by the U.S. Office of Education as a “performance-based process leading to demonstrated mastery of basic and life skills necessary for the individual to function proficiently in society” (U.S. Office of Education, 1978).

In addition to this, if we look at the Bhutanese Education Pathway, Class III is the first key stage of learning where children would have spent four years of formal schooling. Therefore, the objective of the year end assessment was to serve as an instrument not only to assess the consolidation of learning and the internalization of the skills acquired by the children but also to validate the achievement of learning standards and measure the quality of student learning at this Pre-primary stage.

National Assessment at Class III is not only being conducted here in Bhutan. There are several other countries under NEQMAP (Network on Education Quality Monitoring in the Asia-Pacific) where Class III students are made to sit for National Assessments. In Australia, National Assessment Program (NAPLAN) in Literacy and Numeracy is conducted annually for Class III, V, VII and IX students. It is conducted by Australian Curriculum, Assessment and Reporting Authority (ACARA) since 2008. The writing

duration for NAPLAN is 45 minutes only. Similarly in Cook Islands, National Assessment (NA) is conducted for Class III students annually since 2008 but only in Literacy. Even in Philippines, the Department of Education conducts the National Achievement Test (NAT) annually for Literacy, Numeracy, Science and Filipino for Class III students since 2005.

Thus, as mandated under Charter 7 of the Accelerating Bhutan's Socio-economic Development (ABSD), one significant initiative undertaken by the BCSEA in 2010 was to develop Teachers' Guide on CBA as a *Modular Assessment* for all subjects at various levels. Accordingly, teachers in the field were to get prepared for a shift from traditional year-end examination to Competency Based Assessment Testing (CBAT) for Classes III and VI. The focus was to take this concept sifted into the system gradually from lower classes to high stake examinations such as BCSE and BHSEC (Bhutan Certificate of School Examinations and Bhutan Higher Secondary Examination Certificate). It was to enhance the quality of education in the country. Although CBAT for Class III began in 2011 as year-end test, the items used did not really test their mastery of competency as intended in the curricula. Thus, from 2014, it was decided that competency based items should be incorporated in Classes III and VI CBAT.

Confusions and disagreements pertaining to the Class III year-end test weighting for all subjects by the Department of Curriculum and Research Development (DCRD), MoE arose. The papers along with test blue-print and model answers are being technically prepared by the BCSEA and are sent to schools. The respective schools then conduct the examinations and evaluate the papers accordingly. The consolidated marks for Class III and VI are sent to BCSEA for data analysis and to prepare students' performance report.

At present the Class III year-end test has different weighting such as: English (10 marks), Dzongkha (10 marks), Mathematics (25 marks) and Dzongkha EVS (30 marks). Thus concerns on Class III year-end test weighting was expressed by the school Principals, teachers, DEOs/ TEOs from the Dzongkhags, parents and officials from the BCSEA.

The need to relook at the Class III test weighting policy was appraised to DCRD by the BCSEA through Chief of Primary curriculum Division on 25<sup>th</sup> June, 2014 at Khasadrapchu MSS, Thimphu (DCRD - BCSEA joint sitting). DCRD then recommended BCSEA to validate the concern through quantitative data from the field.

In the backdrop of the above, BCSEA prepared a survey questionnaire and administered among the Principals, subject teachers and the Examination coordinators at randomly selected schools in all the dzongkhags. BCSEA officials were deployed for the survey from October 6 – 13, 2014. The data and information collected through the survey were compiled and analysed with appropriate tools.

## Purpose of the survey

The nationwide survey on “Year-end Test and Weighting: An Empirical Case of Examination System for Class III students in Bhutan” was to find out:

- ❖ whether it is worth conducting year-end test at Class III with existing weightings in different subjects,
- ❖ whether it is convenient to conduct testing on the current weighting,
- ❖ whether the Class III test papers be set on higher weighting and converted them back to the required weighting (10 – 30),
- ❖ mid-term examination weighting and duration of writing from the schools.
- ❖ the problems faced by the teachers in the schools on assessment and evaluation with the existing weighting,
- ❖ the suggestions and comments to improve Class III year end test, and
- ❖ the inconveniences faced by the school for having to conduct Class VI after their home examinations are over.

## Methodology

### Research Tools

Survey Questionnaire was the tool used for the quantitative data collection. This questionnaire was developed by BCSEA to draw different range of parameters in the areas of assessment and examinations. Data was processed using software MS excel and SPSS.

### Research Sample

Survey sampling was carried out randomly for decisive and meaningful data collection. Principals, Examination coordinators, and subject teachers participated in the survey questionnaire. Out of 432 participants in the survey, 66 were principals, 39 Examination coordinators, 84 Mathematics teachers, 94 English teachers, 81 Dzongkha teachers, and 68 Dzongkha EVS teachers. A total of 89 schools participated in the survey. It included all levels of schools [1 Extended Classroom (ECR), 38 Primary schools, 28 Lower secondary Schools, 17 Middle Secondary schools and 5 Higher Secondary schools], both government and private, and urban, rural and remote schools across all regions in the country.

Table 7 Different participants from the schools

Participants	Numbers
Principals	66
Examination Coordinators	39
Mathematics Teachers	84
English Teachers	94
Dzongkha Teachers	81
Dzongkha EVS Teachers	68
Total	432

## Findings of Survey

### 1. Year-end test of Class III with existing weightings in different subjects

The focus of the survey was to find out whether it was worth conducting year end test of Class III with existing weightings in different subjects. The findings of the survey indicated that 34.85% of the principals, 43.59% of the Examination Coordinators, 47.62% of the Mathematics teachers, 23.40% of the English teachers, 23.46% of the Dzongkha teachers, and 70.59% of the Dzongkha EVS teachers found it worth conducting separate annual written test for just 10-30 marks in each subject, while 60.61% of the principals, 51.28% of the Examination coordinators, 52.38% of the Mathematics teachers, 76.60% of the English teachers, 76.54% of the Dzongkha teachers, and 29.41% of the Dzongkha EVS teachers found them not worth.

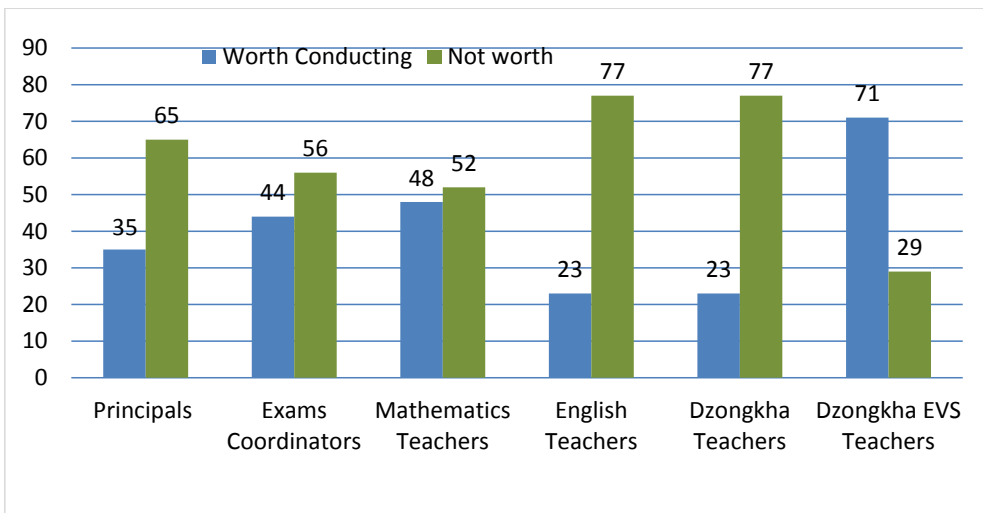


Figure 1 Opinion of participants on Year-end test of Class III with existing weightings

## 2. Inconvenience in conducting tests on the current weighting

The findings indicated that 27.27% of the principals, 48.72% of the Examination coordinators, 45.24% of the Mathematics teachers, 21.28% of the English teachers, 28.4% of the Dzongkha teachers, and 66.18% of the Dzongkha EVS teachers said it was convenient to conduct tests on the current weighting. However, 68.18% of the Principals, 46.15% of the Examination coordinators, 54.76% of the Mathematics teachers, 75.53% of the English teachers, 70.37% of the Dzongkha teachers and 32.35% of the Dzongkha EVS teachers said it was inconvenient to conduct tests on the current weighting. The reasons for the inconveniences as mentioned by the participants were as follows:

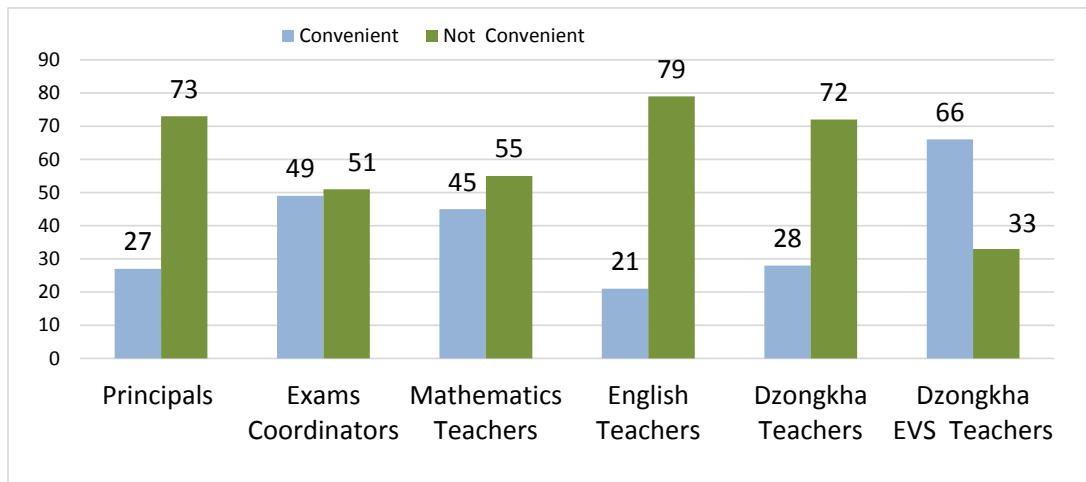


Figure 2 Reasons for the inconveniences mentioned by the participants on current weighting

- i. Low test weighting imposes restriction on item varieties, learning skills and content (writing, reading etc.). Thus they found it very inconvenient to evaluate students' performance.
- ii. Students do not take Competency Based Assessment Test (CBAT) seriously due to its low weighting. Thus, it is a waste of resource (time and energy).
- iii. As per the teachers' manual and other texts prescribed by the DCRD, many things are required to be taught to children. However, due to low weighting, CBAT does not cover the entire lesson taught.
- iv. It is very difficult in evaluating papers on such a low weighting and then to convert the marks out of 100%.

- v. Due to low weighting, students are able to finish their written examination within 20 minutes and sometimes earlier than that. Students do not get opportunity in developing their writing skills (English).
- vi. There is a wide gap between the performances of students in Class III & IV. Students start facing difficulty in writing once they reach Class IV.
- vii. Awarding of CA (70-90 %) becomes very heavy for all the subject teachers.
- viii. Though the weightings for all subjects are different, the writing duration is same for all subjects. This makes the students prefer subjects with more weighting.
- ix. Inconsistency in weighting for all the subjects in Class III demotivates students' interest in learning and as a result it leads to bad performance in higher grades.

### 3. Class III test papers to be set on higher weighting and convert them back to the required weighting (10 – 30)

The findings indicated that 77.27% of the principals, 61.54% of the Examination coordinators, 70.24% of the Mathematics teachers, 85.11% of the English teachers, 79.01% of the Dzongkha teachers and 55.88% of the Dzongkha EVS teachers wanted Class III test papers to be set on higher weightings and converted them back to the required weighting (10 – 30). However, 16.67% of the principals, 30.77% of the Examination coordinators, 27.38% of the Mathematics teachers, 13.83% of the English teachers, 18.52% of the Dzongkha teachers and 44.12% of the Dzongkha EVS teachers disagreed.

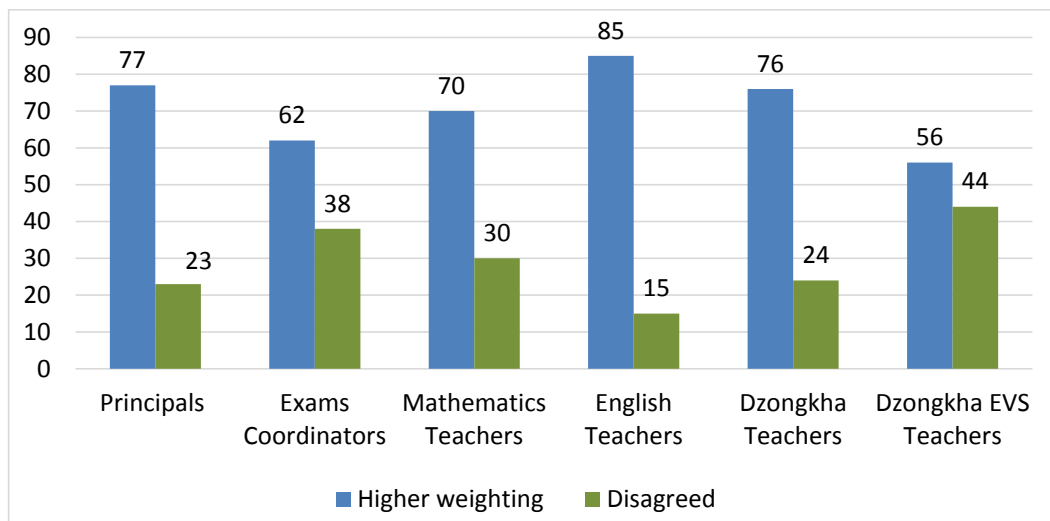


Figure 3 Opinion from the participants on whether Class III test papers to be set on higher weighting

The participants were also asked to propose higher weighting in which their response indicated that 6.88% of the participants proposed less than 30 marks, 28.66% of the participants proposed 30 marks, 11.91% of the participants proposed 40 marks, 30.66% of the participants proposed 50 marks and 6.36% of the participants proposed 60 marks.

#### 4. Midterm examination weighting and duration of writing practiced in the schools.

The following table shows the midterm examination weighting and duration of writing practiced in the schools:

Table 8 Different weighting and test duration practiced in the schools

Sl. no	Marks	Duration	Respondents
1	10-20	within 1 hour	43.48%
2	21-30	within 1 hour to 1 hour 30 minutes	35.32%
3	31-40	within 1 hour 30 minutes to 2 hours	4.28%
4	41-50	within 1 hour 30 minutes to 2 hours	9.17%
5	51-60	within 2 hours	2.7%
6	91-100	within 2 hours to 2hrs 30 minutes	1.39%

It was indicated that 43.48% their midterm examinations were conducted out of 10-20 marks within 1 hour, while 1.39% of the participants mentioned that their midterm examinations was conducted out of 91-100 marks within 2 hours to 2hrs 30 minutes.

#### 5. Conduct of Class VI year end test together with Class III year end test

The following table shows the percentage of participants indicating their preference for Class VI year end test to be conducted with Class III year end test:

Table 9 Participants opinion on the Classes III and VI test timing

Sl. no	Respondents	Class III	Class X/XII
1	Principals	77.27%	22.73%
2	Examination coordinators	76.92%	23.08%
3	Mathematics teachers	80.95%	19.05%
4	English teachers	79.79%	20.21%
5	Dzongkha teachers	85.19%	14.8%
6	Dzongkha EVS teachers	70.59%	29.41%



Of the total, 78.45% of the participants preferred to conduct Class VI year-end test with Class III year-end test. However, 29.41% of them preferred to conduct them with Class X/XII examinations.

When the participants were asked to justify their preference to conduct yearend test of Class VI simultaneously with Class III year end test, they indicated that:

- i. the inadequate spacing problem while conducting Class X and XII board examination would be solved if Class III and VI tests were conducted together,
- ii. schools will not require to make separate sitting arrangement for Class VI. It is also inconvenient and tedious for teachers to conduct and supervise exams continuously at a stretch,
- iii. the climatic condition by then becomes unfavourable (cold) for the high altitude school students while writing their examinations,
- iv. syllabus for Class VI gets covered much earlier but then teachers and students have to wait for their test (for more than a week),
- v. students are not happy to stay back and wait for their tests as all their friends would have finished their exams by then (below Class VI) and break for winter vacation,
- vi. participants feel that teaching does not become effective after home exams and after covering the prescribed syllabus. They mentioned that students tend to become more relaxed instead of working hard for their tests. They consider it as a waste of time and resource in the process of waiting for the test,
- vii. schools need time to prepare National Day celebration,
- viii. it would give ample time for teachers to evaluate, analyze and prepare the results properly,
- ix. teachers will be able to go for invigilation duty assigned by the Dzongkhag and BCSEA office,
- x. students do not get proper guidance since teachers will be very busy with other responsibilities by then (evaluation of papers, preparation of annual results and invigilation duties assigned by the respective Dzongkhag and BCSEA office) and
- xi. there are shortages of invigilators in the schools as many teachers go for invigilation duty and also as supervisors for the board examinations (in other schools in various Dzongkhags).

### Comments and suggestions for Class III year-end tests

Some comments and suggestions to improve Class III year-end test were also provided by the participants as follows:

- i. due to low weighting in the examination, opportunities to develop students' writing skills are being restricted. And also it fails to check their actual learning standards,
- ii. Class III year-end test items are not challenging enough for the students,
- iii. students are not serious about their examination thus it's a waste of resource (time and energy),
- iv. since exam weighting is just 10%, students who score 2 marks can also qualify for the next grade when added to their CA,
- v. teachers do not get enough time to evaluate students' performance,
- vi. awarding Continuous Assessment (CA) marks for all the individual subjects is very heavy for the teachers and there are chances of giving high CA marks just to acquire high position in school ranking,
- vii. students can easily qualify for next higher grade due to their high CA marks,
- viii. there is a mismatch of marks with the contents to be taught,
- ix. heavy CA compared to written examination,
- x. centralize marking and evaluation with comprehensive marking scheme,
- xi. not very advisable to have same hours of writing duration for all subjects when the weighting are different,
- xii. language used should be simple with appropriate labelled diagrams,
- xiii. font size and style of the letters used in all papers should be set as per the age of children,
- xiv. test items should cater to both low and high achievers,
- xv. there should be equal weighting for Continuous Assessment and written examinations,
- xvi. class III year-end test need to incorporate all the skills with increase in weighting which might improve student performance. It will also help determine the student's learning/understanding,
- xvii. items must be developed from teacher's manual (TRCBA for Class III) and text books in order to have item varieties,
- xviii. test items need to be more challenging for the students unlike the past years,
- xix. the distribution of marks should be uniform across all the chapters,

- xx. change the question pattern (1. passage, 2. poem, 3. grammar). Passage and poems are unseen at present,
- xxi. syllabus for Class VI is covered almost at the same time as with Class III. Thus there won't be any problem to have the test dates together.
- xxii. DCRD (REC) & BCSEA should work together on assessment.

### **Whether BCSEA should continue setting Class III year-end examination questions**

According to the survey findings of the Education Blueprint conducted in October 2014, 17.81% of the school Principals and teachers disagreed in BCSEA continuing the setting of Class III year-end examination questions, while 8.58% of them were not sure about it. However, 73.61% of them agreed in having the BCSEA to continue setting Class III year-end examination questions. However, 12.42% of the participants mentioned that Class III exam papers should be set by schools themselves.

### **Recommendations from the findings**

- i. Class III year-end test weighting should be increased to 30-50 marks across all subjects with 1 hour 15 minutes of writing duration.
- ii. Class VI year-end test should be conducted along with Class III year-end test.
- iii. Continuous Assessment and summative assessment for Class III need to be rationalized.
- iv. BCSEA should continue developing test items for Class III year-end test till the teachers in field become comfortable in developing competency items.
- v. Class III year-end test must incorporate item varieties using all levels of thinking skills to make the items more competent.
- vi. Class III year-end test items should contain only MCQ items.

## Conclusion

Out of 432 participants who were administered the survey questionnaire (on Class III year end test), 57.80% of them agreed that it was not worth conducting the year end test. Since the weighting for the test is very negligible and inconsistent across all different subjects, it does not test and demonstrate all the acquired competencies and skills of the students. It was also indicated that with the current assessment practices and heavy Continuous Assessment consolidation at Class III, the students get promoted to Class IV easily without mastering the core subjects learning standards.

The backwash effect in curricula and assessment had created learning gap between Class III and Class IV. Curriculum is very heavy for the students at this level but the assessment part is found to be too inadequate. Thus, it resulted in highest repetition rate at 11.8 % in Class IV, according to Bhutan Education Blueprint 2014-2-2015, pg. 28.

The alternative assessment (Continuous Assessment) in our education system has progressed from assessment *of* learning to assessment *for* learning then to assessment *as* learning (Torrance, 2007). The balance in summative and alternative practices serves better with overarching purposes of assessment in our education system.

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- 2 Davidson, T. A. (2015). *Assessment, Standards-Referencing and Standard Setting*. UNESCO, Bangkok.
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# **Current Status of the National Assessment System in Bhutan (A Case Study Report for Learning Enablers for Asia Pacific (LEAP) Programme)**

(Arjun Kumar Gurung)

## **Brief socio-economic and demographic profile of the country**

Bhutan is a small landlocked nation, situated between China (Tibet) and India. It has an area of 38,394 square kilometers with the kingdom's longest east-west dimension stretching about 300 kilometers and 170 kilometers at its maximum north-south dimension. The population of the country is estimated at 716,896 (2012). Most part of the country is mountainous and the land elevation ranges from 160 metres above sea level in the south to more than 7550 metres in the north. About 70.5 percent of the land surface is covered with forests; around seven percent with year-round snow and glaciers; nearly three percent is cultivated or agriculture areas; and four percent comprises meadows and pastures, while rest of the land is either barren, rocky or scrubland.

The average life expectancy in Bhutan is currently estimated at 67.75 (2011) years, with life expectancy for men little over 66.0 years and life expectancy for women at 66.2 years. This indicates the fact that the country has continued to experience declines in adult and child mortality rates. Primary health care coverage has also expanded and now covers well over 90% of the country's population.

Despite being landlocked, with difficult terrain and a widely dispersed population, Bhutan has made rapid socio-economic progress. The country's real annual economic growth averages about 7-8 per cent over the last two decades. The Gross Domestic Product per capita in Bhutan was last recorded at 2068.37 US dollars in 2014. The GDP per Capita in Bhutan is equivalent to 16 percent of the world's average. GDP per capita in Bhutan averaged 992.75 USD from 1980 until 2014, reaching all time high of 2068.37 USD in 2014 and a record low of 325.14 USD in 1980.

In recent years, Bhutan, with a primarily agrarian based economy, has experienced rapid economic growth. The economic sectors which have contributed significantly to this growth and transformation from a largely agricultural base are particularly hydropower, tourism, construction, trade and service sectors. These sectors have now become the main driving forces of the economy, with a share of GDP now as high as 40%.

Hydropower development and the export of surplus electricity to India has largely

sustained this robust growth and fundamentally transformed the structure of Bhutan's economy. Through prudent macro-economic management, the country is performing well and the Government's investment in social and human development has raised hopes of Bhutan meeting several of the Millennium Development Goals.

Bhutan's development has been guided by an original philosophy based on the concept of Gross National Happiness, striving to balance spiritual and material advancement through the four pillars: sustainable and equitable economic growth and development; preservation and sustainable use of the environment; preservation and promotion of cultural heritage; and good governance.

The otherwise an isolated country for several past decades, in economic and cultural terms, has undergone political reform with a democratically elected government and increased exposure of the country to outside influences in the form of trade, migration, education and tourism. After the first democratic elections were held in March 2008, Bhutan became a constitutional monarchy with a parliamentary democracy. The leader of the winning party (Druk Phunsum Tshokpa), Jigme Y. Thinley, became the first democratically elected Prime Minister of Bhutan. The Fifth King, Jigme Khesar Namgyel Wangchuck, ascended to the throne in December 2006 and was officially crowned on November 1st 2008.

## **Overview of school education system of the country**

### **School Education Structure, Administration and Finance**

Since 2000, the education sector has been working on the task of developing a strategic framework for education "Education Sector Strategy: Realizing the Vision 2020". It is an articulation of the goals and processes for achieving Bhutan's aspirations in the education sector as a part of the wider national development initiatives towards becoming a knowledge-based society and progressive sovereign nation.

The structure of Bhutanese education system in general consists of a day care system called early childhood care development (ECCD), seven years of primary (starting from Class PP to VI), four years of secondary (VII to X), and two years of higher secondary education (XI to XII) which terminates at the age of eighteen.

The basic education level at present is up to Class X which includes 11 years of free education until the age of sixteen (Primary +4 years of secondary or until the end of Class X). In the current education system, there are at least four key-stages of student learning (Classes III, VI, X and XII) and at the end of which children have to sit for the competency based assessment tests in case of Classes III and VI; and public examinations (high stake examinations) for Classes X and XII set by the Bhutan Council for School Examinations and Assessment (BCSEA).

Dzongkha is the national language which is taught at all levels of schooling, and for other subjects, English is used as the medium of instruction.

The anticipated successes of the education delivery will largely depend upon support mechanism such as strong financial and resources commitment of the government. The Government has always accorded a high priority to the education sector as the key agency to address the critical shortage of human resources in the country and improve the quality of life. Education has continued to receive a major share of the government budget (around 10%) since the start of First Five Year Plan in 1960s even in the face of other emerging priorities in the national development areas.

The country is guided by the vision to create Bhutan as a ‘Knowledge Based Society’ and the Royal Government accords high priority to the education sector by investing the highest budget allocation. The Government expenditure on education was measured at 4.65 of the total GDP in 2011 and 5.6 of the total GDP in 2013, according to the World Bank. The expenditure on education consists of current and capital public expenditure which includes government spending on educational institutions (both public and private), education administration, as well as subsidies for private entities (students/households and other privates entities). The table below shows capital budget outlay from 7<sup>th</sup> FYP to 11<sup>th</sup> FYP.

*Table 10 Capital outlays 7<sup>th</sup>- 11<sup>th</sup> (1992-2018) and Education Sector Budget (Nu. in million)*

	7 <sup>th</sup> Plan	8 <sup>th</sup> Plan	9 <sup>th</sup> Plan	10 <sup>th</sup> Plan	11 <sup>th</sup> Plan
	(1992-1997)	(1997-2002)	(1997-2007)	(2007-2013)	(2013-2018)
Total Government Budget	15,590.70	34,981.70	70,000.00	73,611.76	92,000.00
Education Budget	1738.00	3,292.70	10,209.40	9,489.10	7438.74
% of Total Budget	11.10%	9.40%	14.50%	12.80%	8.01%

*(Source: GNHC, RGOB)\* only capital budget outlay*

The Constitution of Bhutan ensures provision of free education services to all Bhutanese from primary to tertiary levels with the restriction that students’ access to the Classes XI and XII depends on their performance in the Board Examinations at the end of Class X. The goal is to generate a holistic growth of every Bhutanese child to realize his/her

full potential to be a socially useful and economically productive citizen with a deeper understanding of the universal values of peace, freedom, justice, fairness, equality and happiness. The country envisions that education systems prepare young people for the world of work, instil dignity of labour, build competencies and confidence to brace the challenges. To this effect, students who are not selected for government-funded further education can continue their studies in private higher secondary schools or undergo vocational training in private training institutes, both of which are of course more cost-intensive. Since 2006, the Ministry of Education has in collaboration with private higher secondary schools initiated a continuing education programme to allow school dropouts the opportunity to improve their qualifications. Students who qualify are not only given free tuition, but they are also provided with various facilities (textbooks, sporting equipment, boarding facilities, etc.). However, during the last few years the policy trend worked towards cost-sharing with parents, especially with those who are in a position to do so. Accordingly, students studying in the urban areas have had to buy their own school supplies since 1993.

The responsibility for the administration of education in Bhutan is shared by several institutions: the Ministry of Education (MoE), the Ministry of Labour and Human Resources (MoLHR), the Royal University of Bhutan (RUB), the Dzongkhags (districts) and the Gewogs (cluster of villages which constitute administrative blocks). The Ministry of Education is also linked to the Ministry of Home and Cultural Affairs regarding instructing the Driglam Namzha (Bhutanese etiquette) along with organizing other cultural activities in schools, to the Ministry of Agriculture for Agricultural programmes, and to the Central Monastic Body for religious education in the middle and higher secondary schools.

The Ministry of education is responsible for national level policy planning, administration of primary to higher secondary education and continuing education but however the actual management of the school at grass-root level is decentralized to the dzongkhags (districts) and schools. It is responsible for selecting students for international scholarship, for designing and implementing Higher Education policy and liaising with other stake holders such as Royal Education Council (REC), RUB (Royal University of Bhutan) and BCSEA.

All schools have a uniform governance and management structure. Schools also follow standard management procedure including goal setting strategies, implementing plans, monitoring of plans, review and assessment and recording and reporting. However, the effectiveness and efficiency of the structure and the process varies from one school to another.



### Enrolment trend over the past five years

Access in education refers to the way in which educational institutions and policies ensure that students have equal opportunity to take full advantage of their education. The system aims to provide access to the entire Bhutanese children at all levels to realize their potential. Despite the challenges posed by geographical location, socio-economic background, economic status, disability, academic performance, resource and infrastructure constrains, the strategies for increasing access in 2014 have succeeded greatly in improving the enrolment rates. The gross primary enrolment rate has now increased to 113% and the net primary enrolment rate has increased to 96%.

The country is close to meeting universal enrolment in the primary level at 96% and secondary level at 85% in the year 2014. The net enrolment ratio for the higher secondary education (Classes X and XII) currently stands at 27 percent and the gross enrolment ratio at the tertiary level is estimated at 24% as of 2014. The overall literacy rate of today stands at 63%.

This success can be attributed to the strategies of establishing small community primary schools, the provision of school feeding for children who have to walk long distances to school and who are from poverty pockets, as well as provision of boarding facilities in the central schools and free stationeries.

Table 1.2 presents the key education indicators for access to education, Gross Primary Enrolment Ratio (GPER), Net Primary Enrolment Rate (NPER), Gender Parity Index and Adjusted Net Primary Enrolment Rate (ANER).

Table 11 Primary Enrolment Rates 2008-2014 (Annual Education Statistics, MoE)

Year	Net Primary Enrollment				GPI
	Gross Enrollment Ratio	Male	Female	Total	
2014	113%	96%	94%	95%	0.98
2013	116%	95%	96%	96%	1.01
2012	118%	95%	96%	96%	1.02
2011	120%	94%	96%	95%	1.02
2010	118%	93%	95%	94%	1.02

However, one of the main lessons was that, rapid expansion with limited resources imposed severe challenges to access quality education.

The Bhutanese education system has, over the years, produced the current work force in the country. Students continue to graduate through the school system to pursue higher education and return to workforce in the form of academicians and professionals. However, the main challenge facing the education sector as a whole is how to increase the proportion of students achieving high quality learning outcomes.

The results from the high stake examinations indicated that the pass percentage in Class X and Class XII examinations have been very high, on an average around 90% for each level over the last 10 years. In terms of numbers, the number of students appearing these examinations has increased dramatically over the last 10 years. The number of students appearing for Class X examinations increased from 10404 students in 2011 to 11655 in 2014 and for Class XII from 9121 in 2013 to 10242 in 2014. However, the mean scores of the student performance in Classes X and XII are still below 75.00 percent.

In terms of the policies the increase in enrolment has resulted in increasing number of students completing higher secondary education. As can be seen from these numbers, more and more are now able to and have the opportunity of accessing to the higher stages of secondary education and proportion of them have achieved the expected learning outcomes.

### Student performance by grade and gender for last 5 years

Looking at the overall results at the high stake examinations, girl's performance is better than boy's in Class XII and boy's performance is better than girl's in Class X.

Table 12 Performance by gender at different grade (PPR: BCSEA)

Year	Class X		Class XII	
	Male	Female	Male	Female
2014	94.60	92.93	87.83	88.58
2013	96	94	87	86.2
2012	97.53	96.19	85.88	87.78
2011	97.46	96.62	87.18	84.76

## Large-scale assessments and policies

### 1. Current policies or framework that guide learning assessment

BCSEA aspiring to be an internationally recognized educational assessment and monitoring agency that provides quality services to build the integrity and profile of the education system is mandated to drive quality and standard of student learning, to play a pivotal role in promoting quality and standard in curricula, to enhance teaching and learning through advocacy, policy advice and support, to specialize knowledge and skills, and services. As the watchdog of the education system in the country, it is a semi-autonomous entity since it continues to receive human resource and financial support from the government but fully de-linked from the Ministry of Education in terms of governance and operation.

Following are the core thematic areas of BCSEA;

- a) Conduct of secondary school examinations,
- b) Assessment and monitoring of education,
- c) Professional development in assessment,
- d) Research and publications and
- e) Consultancy services.

The core mandate of BCSEA as described in the strategic framework and also in assessment and examination policy framework are as follows:

- a) creating research capability and assessment practices of international quality,
- b) improving the standard of public examinations and assessment practices in schools,
- c) monitoring through feedback and input regarding levels of student's learning,
- d) providing professional development to principals, teachers and other personnel in the field of examinations and assessment,
- e) conducting research into policies and programmes to improve the quality of student learning and teaching,
- f) providing insight and support to study existing school-based assessment practices and strengthen the same,
- g) developing and publishing research-based support materials to strengthen school based process and practices,
- h) providing examples of best practices,

- i) conducting national and international conferences, seminars, symposia etc. in areas of assessment and
- j) facilitating exchange programmes with other international institutes of repute.

In Bhutan, the national level testing of pupils has been the singular instrument used in the systematic measuring and monitoring of the performance of individual pupils, schools and the national education system. Pupil assessment forms an integral part of teaching and learning and thus, ultimately, an instrumental factor in improving the quality of education.

Historically, the primary aim of national testing was to create a standardized method of assessment with a significant impact on students' progress. It included national tests for the award of certificates at the end of the school such as in the case of Class X Bhutan Certificate of Secondary Education Examinations introduced in 2001, and also for the purpose of promotion or streaming at the end of an academic year. In 2006, the BCSEA took over the complete conduct of the Class XII examination, called Bhutan Higher Secondary Education Certificate Examination (BHSEC) from the Council for the Indian School Certificate Examinations (CISCE), New Delhi.

## **2. Types of existing large-scale international as well as National Assessments and main highlights of the assessment results**

The large-scale national assessment in Bhutan is called National Education Assessment (NEA). NEAs are conducted based on the need and concern of a country for information on its education quality. BCSEA is responsible for conducting all activities related to assessment such as preparing test specifications, developing instruments, piloting, revising instruments, conducting final tests, doing analysis, generating reports and dissemination of findings. Normally, it takes at least two years to complete such an assessment.

National Education Assessment (NEA) as a system-wide assessment program is designed to investigate and monitor the 'health' of the education system. The main purposes are to provide:

- ❖ policy-makers with information to monitor standards over time, to monitor the impact of particular programmes, and to make decisions about resource allocation,
- ❖ schools and teachers with information about whole school, class and individual pupil performance so that they can make decisions about resource allocation and to support learning in the classroom and
- ❖ the national system with information that will help to compare its performance with the international standards.

BCSEA started to coordinate the National Education Assessment (NEA) of student learning and performance using standardized tests and questionnaires since 2002. The first NEA on Class VI Literacy (English) and Numeracy (Mathematics) was completed in 2004. The first NEA on Class VI Dzongkha was completed in 2006. The NEA for Class X Mathematics and English was completed in 2007. The second round of the NEA for Class VI Literacy and Numeracy was conducted in 2011 and the report published and disseminated in 2012. Subsequently, in 2013 the NEA for Class X Mathematics Literacy and Class X English Literacy was conducted and the report is generated for disseminations to different stakeholders.

Brief descriptive and inferential statistics and findings of NEA 2013 (Class X Mathematics Literacy and English Literacy) are as follows:

*Table 13 Descriptive and inferential statistics of Mathematics Test*

	N	Mean	Median	SD	Skew-ness	Kurtosis	SEM	Lower CI	Upper CI	Avg P value	Cronbach's ( $\alpha$ )
<b>All</b>	5581	38.0	35.0	18.3	0.58	-0.33	0.24	37.6	38.5	0.38	0.89
<b>Boys</b>	2710	39.9	38.0	18.7	0.46	-0.56	0.36	39.2	40.6		
<b>Girls</b>	2871	36.2	33.5	17.6	0.70	-0.04	0.33	35.6	36.8		

The table above represents the number of student taking the test out of 100 marks, the mean score, median, standard deviation, skew-ness and kurtosis, standard error of measurement, confidence intervals and the reliability and validity of the test items. Overall, item analysis showed great test validity with Cronbach's coefficient ( $\alpha$ ) of (0.89). In terms of item difficulty, the p-value of (0.38) suggested that items were difficult but acceptable within the abilities of the students.

*Table 14 Descriptive and inferential statistics of English Test*

	N	Mean	Median	SD	Skew-ness	Kurtosis	SEM	Lower CI	Upper CI	Avg P value	Cronbach's ( $\alpha$ )
<b>All</b>	5523	34.72	34	10.4	0.44	0.21	0.14	34.4	35.0	0.35	0.84
<b>Boys</b>	2689	34.3	34	9.8	0.39	0.22	0.19	33.9	34.7		
<b>Girls</b>	2834	35.1	34	10.9	0.45	0.13	0.20	34.7	35.5		

The table above represents the number of student taking the test out of 100 marks, the mean score, median, standard deviation, skew-ness and kurtosis, standard error of measurement, confidence intervals and the reliability and validity of the test items.

Overall, item analysis showed great test validity with Cronbach's coefficient ( $\alpha$ ) of (0.84). In terms of item difficulty, the p-value of (0.35) suggested that items were difficult but acceptable within the abilities of the students.

Table 15 Difference in girls- boys achievement in English and Mathematics Literacy

	Girls	Boys	Difference Girls- Boys	Statistical Significance
Mean Mathematics achievement	36.2	39.9	3.7	
Mean overall English achievement	35.1	34.3	0.7	
Mean Reading & Literature achievement	38.6	37.7	0.9	
Mean Language achievement	26.6	26.5	0.1	
Mean Writing achievement	39.8	39	0.8	

The table above represents difference in girls-boys achievement in English and Mathematics literacy. There is a statistical significance difference girls-boys achievement in the Mathematics literacy. However, the achievements difference girls- boys in the reading and literature, language and writing were found very minimal.

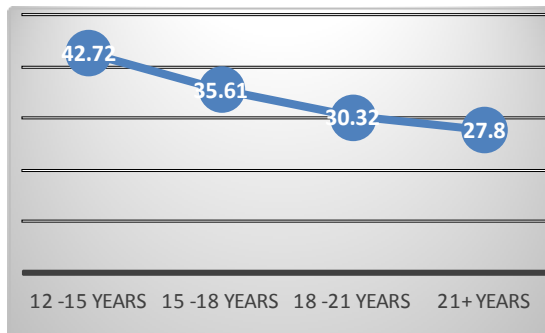


Figure 11 Age-wise performance in Mathematics

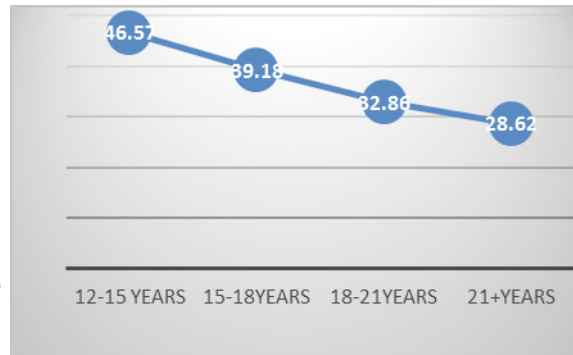


Figure 12 age-wise performance in English

In the age-wise performance, the students in the age group of 12-15 years had better achievement in both English and Mathematics literacy. As the age of the students increased the achievement appeared to proportionately decrease.

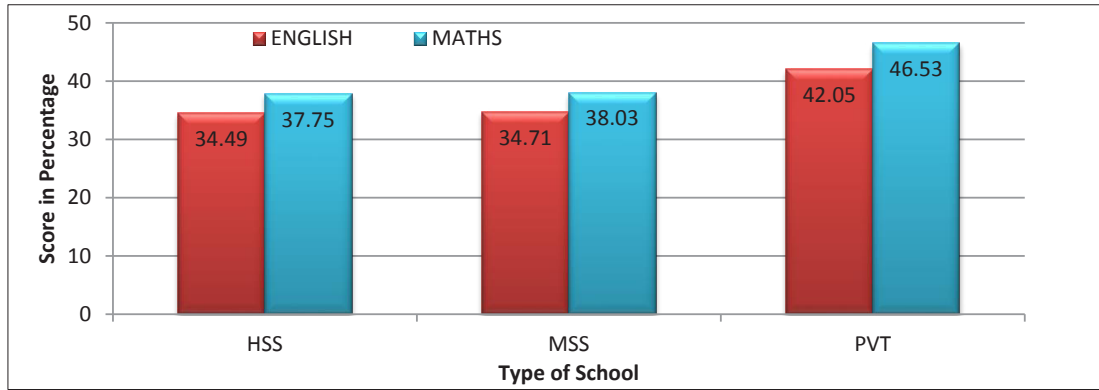


Figure 13 Mean score in English and Mathematics literacy by different types of school

Overall the achievement of the private school was better than that of the public school.

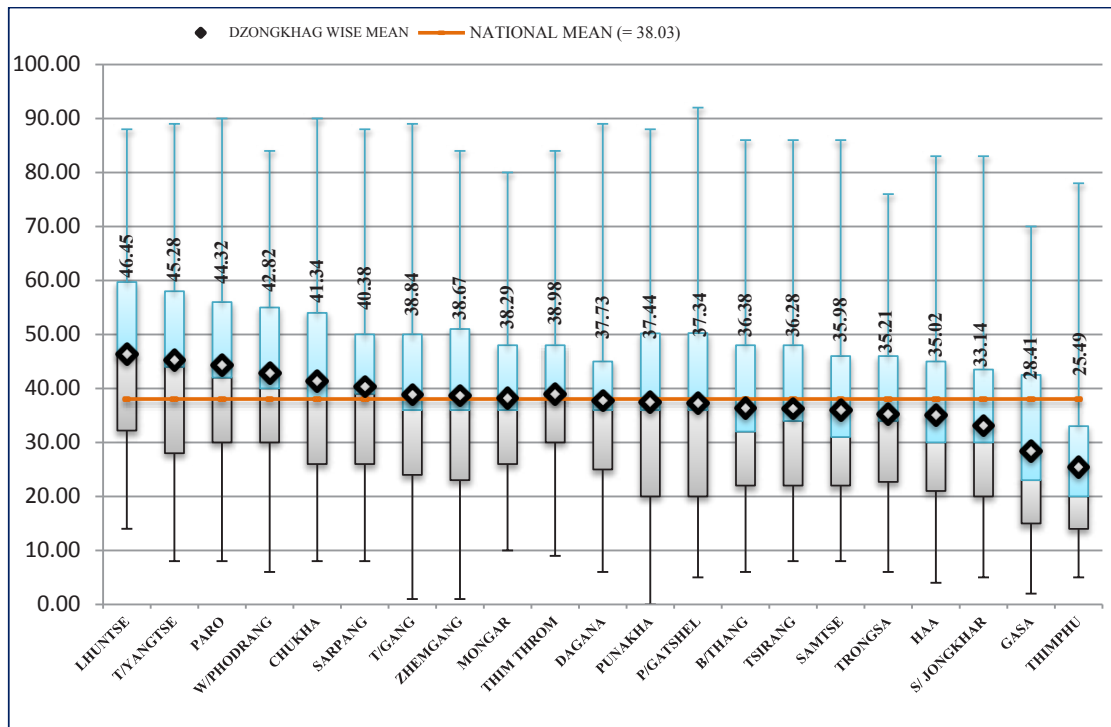


Figure 14 Distribution of Mathematics score by Dzongkhags

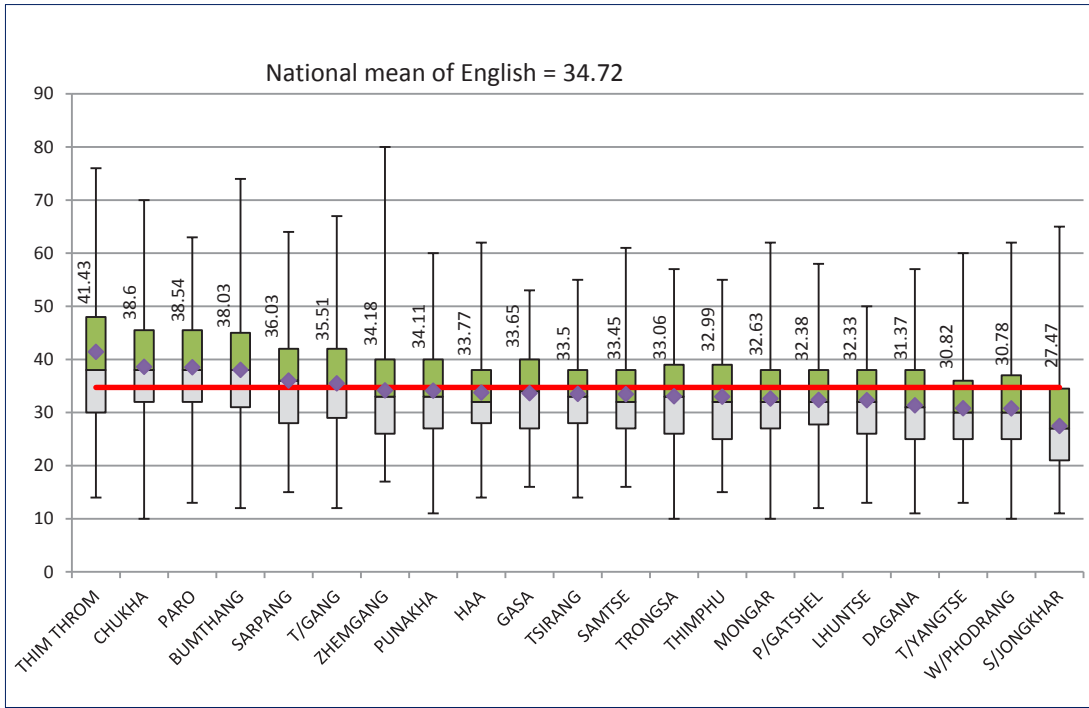


Figure 15 Distribution of English score by Dzongkhag

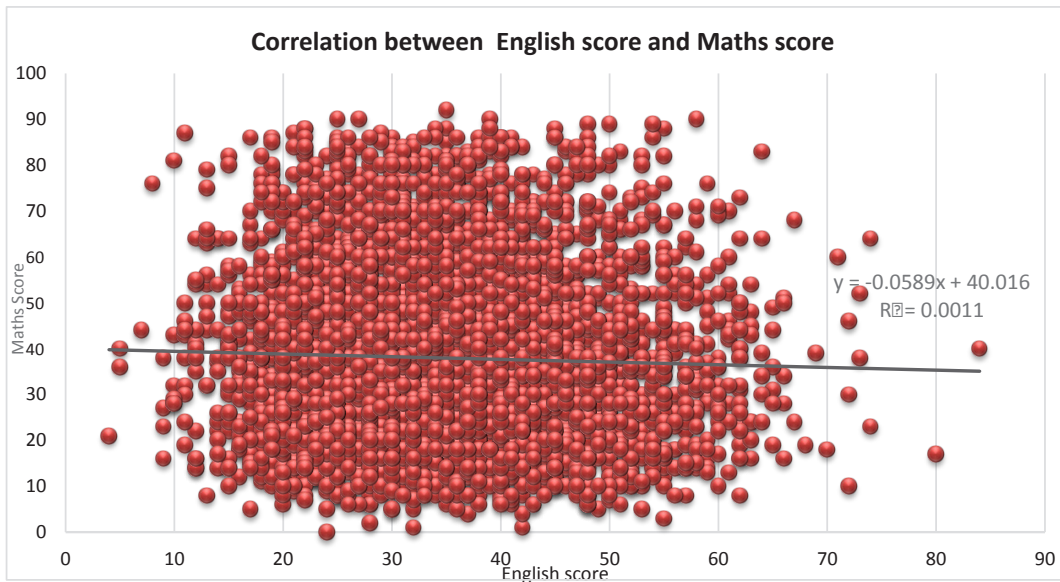


Figure 16 Correlation between English score and Mathematics score



### 3. National Assessment selected for the purpose of LEAP programme

The first round having been conducted in 2006, the NEA 2013 for Class X English and Mathematics was the second round of assessment in the same subjects and level. This was planned to assess the learning achievements in the two crucial subjects for those who were completing the basic education of 16 years of education.

NEA 2013 for Class X English and Mathematics aimed to:

- a. determine performance in English and Mathematics,
- b. relate performance to conditions or context,
- c. review curriculum development process, teaching pedagogy, resource allocation and policy based on the performance,
- d. compare with the 2006 assessment and
- e. measure abilities to solve problems based on cognitive, affective and cognitive domain of learning, and relate student achievements to the quality of Bhutanese education.

Out of the total of 114 secondary schools in the country, 61 were middle secondary schools and 53 higher secondary schools. Among them, 45 schools (25 middle secondary schools and 18 higher secondary schools and 2 private higher secondary schools) were randomly selected as the sample population for the NEA 2013 for Class X English Literacy and Mathematics Literacy tests.

To get a balanced representation of the population, the selection was based on:

- ❖ remoteness (urban, semi-urban, semi-rural, semi-remote or rural),
- ❖ ownership (government or private) and
- ❖ levels (middle or higher secondary schools).

The final sample consisted of 4 rural, 8 semi-remote, 7 semi-rural, 4 semi-urban and 22 urban schools across 20 Dzongkhags and 2 Thromdeys. The target was to get at least 40% of the total student population of 11,104 in Class X to participate in the assessment conducted by means of tests and questionnaires. A total of 82 English teachers and 83 Mathematics teachers also responded to the teacher questionnaires.

A total of 45 test administrators were involved in the test administration for English Literacy and Mathematics Literacy NEA 2013 in 20 Dzongkhags and 2 Thromdeys. The administrators included officials from BCSEA, DCRD, REC, EMSSD, ADEOs/DEOs

and TEOs/ATEOs. The officials were oriented to the assessment tools for one day. The Orientation included familiarization of Test Manual which highlighted on the conduct of English Literacy and Mathematics Literacy tests. In addition to this, 3 forms were used. One was the Test Administration Form (TAF) in which the administrators needed to fill in with problems and challenges encountered in the conduct of the tests. The other form was Teacher Tracking Form (TTF) where the test administrators were required to keep the record of all Class X English and Mathematics teachers who responded to Teachers Questionnaire. The final form was Student Tracking Form (STF) which was intended to keep the record of the students who appeared both the tests and Student Questionnaire. The tests administrators were responsible for the smooth conduct of NEA English Literacy and Mathematics Literacy tests and the questionnaire administration.

The study was carried out after obtaining official approval from the concern agencies. A prior approval for conducting NEA in the schools was sought from the respective Dasho Dzongdas, District Education Officers of the respective dzongkhag administration and the principals from the respective schools as a standard norm to be followed while carrying out the research.

Accordingly, teacher's codes were used for the teacher questionnaire and student index numbers were used for the student questionnaire during the NEA test. Anonymity of all the participants was ensured in all the relevant sections of the report where data were presented. The entire questionnaire and other interview materials were stored in the secured place at BCSEA office after the conduct of NEA test.

#### **4. Analysis and use of assessment data**

##### **4.1 Methodologies used to analyse data**

The two tests, with 26 items in English and 38 items in Mathematics, were designed to assess student competencies in the two subjects. The test items in both the subjects included the multiple choice questions (MCQ), short response questions (SRQ) and extended response questions (ERQ). They were designed by covering all learning standards of both content and competencies as per the curriculum and followed the mode of assessment prescribed by the Department of Curriculum Research and Development (DCRD). The question items were also spread well over the Bloom's Taxonomy of learning to ensure the balanced inclusion of all levels of thinking. The selection of contents for both the subjects was based on the competencies required to be acquired by the learners at the end of Class X.

To study the impact of other external factors and context of the student performance, students responded to English and Mathematics questionnaire. Those teachers who

taught English and Mathematics to the participating students were made to respond to the Teacher Questionnaire designed separately for their respective subjects. Other support tools included teachers and students tracking forms (STF and TTF) and Test Administrators Form (TAF) designed essentially to monitor and track the numbers of students participating in the assessment and to record the situations under which they participated.

Three statistical programs/tools were used to analyse the data: Structure query language (MS Access 2013), Statistical Package for Social Sciences (SPSS) and MS Excel 2013. After evaluation of test papers the scores were directly entered and process in access MS Access 2013. Using SQL, different tables were generated and data were triangulated using relational query. Simple descriptive statistics of the data were generated using SQL. Some data that needed inferential interpretation were then exported to MS Excel which was then processed for further inferential statistics using SPSS. Over all simple regression analysis model and cross-section analysis were adopted to analyse the relation between the different parameters.

The Quest program was used to provide a Rasch analysis for the multiple choice items of the test. Rasch analysis provides item and case estimates and fits statistics, with latter being extremely important measure to see if the items fit the model, helping to validate the data. Rasch scaling models stem from the idea that a person's response to an item, for example, in an ability test, is governed by two factors - the difficulty of the item and the ability of the person. The specific functions of Rasch output include estimates of item difficulty in the form of Pt-Biserial (Discrimination Index). Roughly, if a multiple choice item has discrimination index below 0.30, it indicates that the distracters in the item are not discriminating well. They are either too easy or confusing for the student to get the correct key. Based on discrimination index of item the mapping of the student's location in terms of their abilities were carried out.

Test and item characteristics are important issues in Classical Test Theory (CTT). The main test characteristics according to CTT are the reliability of a test. The reliability of a test and item-test correlation coefficient( $r$ ) was carried out using SPSS.

Data extraction was done based on format developed for report writing. This was done in keeping with the factors such as time, validity and proper execution of the data. The reporting was done, following seven major chapters and an executive summary outlining the assessment enquiry questions, major findings and recommendations.

## 4.2 Findings from the analysis and assessment data that are used in practices and policy formation

NEA 2013 for Class X English and Mathematics aimed to:

- a) identify the student performance in English literacy and Mathematics literacy,
- b) understand the variations among students' cognitive, affective abilities with regard to literacy and numeracy from socio-economic, regional, and gender dimensions,
- c) relate performance to conditions or context,
- d) review curriculum development process, teaching pedagogy, resource allocation and policy based on the performance,
- e) compare with the 2006 assessment,
- f) measure abilities to solve problems based on cognitive, affective and cognitive domain of learning,
- g) relate student achievements to the quality of Bhutanese education,
- h) provide recommendations for improving the teaching-learning environment and
- i) provide recommendations for improving the design/development of curriculum

Apart from answering the above questions, the study would allow Bhutan to learn the use of research and educational assessments to address pertinent educational policy issues. The programme would also equip Bhutan with the technical knowledge, skills and experience and build capacity to conduct research and assessment activities. Bhutan is at the juncture where the capacity to conduct high-quality, large-scale educational policy surveys continuously in order to monitor and evaluate the growth and performance of the Bhutanese education system.

The findings from the analysis and data assessment with recommendations are being disseminated to various relevant agencies at different levels. To name few examples where Ministry of Education had taken broad steps as recommended from the findings of NEA are:

- a) The formulation of Bhutan Education Blueprint (2014-2024) which proposes rethinking in education and taking radical steps to respond to the challenges and changing needs of our education system holistically.

- b) The findings of the NEA showed that children of farmers, national work force and those children staying with friends and relatives performed less well than those children with their parents. Efforts are being made to lessen these circumstantial disparities through the provision of central school in all the dzongkhags with boarding facilities and other support services. This will enhance quality of education as the central schools are provided with adequate resources.
- c) The findings of the NEA also indicated that there was an urgent need to enhance teacher competency to improve quality of education. To this end a new division under Royal Education Council is formed to look after the in-service teachers training program. This will help to enhance the teacher's competency in all areas of teaching learning process.

### **4.3 Other official datasets that are relevant for the analysis purposes**

The other important datasets that this report used were from education data processing (EDP), a unit under BCSEA, which gives detail background information of the children. These dataset are then triangulated with the individual student performance which help us to understand the variations among students' cognitive, affective abilities with regard to literacy and numeracy from socio-economic, regional, and gender dimensions. Relevant official dataset from EMIS, and annual education statistics are used in this report to do cross-sectional analysis on the children learning outcomes.

### **4.4 Forms and methods of dissemination of the results**

Many platforms are used to inform the relevant stakeholders and other education community about the results and data availability of an assessment. The different platforms adopted by BCSEA to disseminate data for the target assessment are;

- a) The assessment reports are made available online in the form of soft copy in our official website,
- b) Copies of the assessment report are distributed to all the different level of schools,
- c) The assessment report are presented to the board of directors, BCSEA, for its approval and
- d) The assessment results are presented to Ministry of Education and to other stakeholders at the national level.

## 5. Issues and Challenges

### 5.1 Major issues and challenges encountered in implementing assessment programme

The National Education Assessment (NEA) in Bhutan was carried out since 2003 by different international agencies at different levels and had come up with various findings and recommendations that entail the policy formulation at different level within the Ministry of Education. The BCSEA started conducting NEAs without involving international agencies since 2011.

Over the years BCSEA carried out this programme based on the need of the country. Although BCSEA had gained lots experience on how to conduct the program like NEA, it encountered many challenges and issues while implementing the programme as it lacked technical human capacity and the financial resources. The challenges and issues encountered are as listed below:

- a) Designing assessment task that reflect assessment framework without having proper assessment framework in place was a major challenge. At the moment the assessment tasks are developed based on the curriculum framework,
- b) Getting the correct sample population that represent population without any scientific method and deriving weighted and un-weighted participation rate,
- c) Developing and designing valid and reliable background questionnaires with proper scale,
- d) Test administration with limited resources,
- e) Validating assessment tasks using new updated quantitative and qualitative methods, including trial testing and expert review on the task,
- f) Analyzing data and making inferences out of the data,
- g) Triangulating findings from background questionnaires with the result of assessment,
- h) Creating a calibrated scale for each domain of learning and mapping children along the developmental continuum was a major challenge,
- i) Evaluating of result in terms of proficiency descriptions and in terms of the skills, knowledge and understanding demonstrated by children in the assessment task,

- j) Accommodating children with special needs in the large scale assessment,
- k) Not able to do proper data appraisal that is used to measure the sampling errors (standard error, confident limits, etc.) using software,
- l) Report writing and data dissemination,
- m) Not able to design a long-term monitoring program on the growth of achievement in cohorts throughout the school cycle, from one level to another level,
- n) Generating valid recommendations for policy formulation and proper usage of assessment data in designing new programme,
- o) Assessment data are not regularly translated into implementation into policy and planning enhancement by the policy makers, education leaders, research institutions and other civil society,
- p) Not able to produce and disseminate assessment results of students at the school level and
- q) Not able to include Progress in International Reading Literacy Study (PIRL) and Trends in Mathematic Study (TIMSS) items in order to produce international comparisons/ benchmarking.

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## **21<sup>st</sup> Century Assessment and its Emerging Challenges (A Literature Review)**

(Kinga Dakpa and Arjun Kumar Gurung)

### **1. What is Assessment?**

Assessment can be defined as the collection of information about student performance for measuring their success. Often at the school level, students are assessed for the purpose of improving their learning outcomes, monitoring and certifying their performance and achievement.

Assessment is an integral part of teaching learning process, as it determines whether or not the goals of education are being met. It affects decisions about grades, placement, advancement, instructional needs, curriculum, and, in some cases, funding. It inspire us to ask these hard questions: “Are we teaching what we think we are teaching?” “Are students learning what they are supposed to be learning?” “Is there a way to teach the subject better, thereby promoting better learning?” It frames the way students learn and significantly impacts their experiences (Boud & Associates, 2010). In fact, it has been argued for a long time that the quickest way to change the way students learn, is to change the way they are assessed (Elton & Laurilled, 1979). Very often, the school assessment is erroneously relegated to being an activity after teaching has been completed. But good assessment practice advocates instead that assessment is the starting point of planning teaching and designing curriculum.

### **2. The Principle of Assessment**

Good assessment practices do not occur arbitrarily without design. Practices can only be good if they are grounded on sound principles (Boud and Associates, 2010). Therefore, the good assessment should

- i. be valid and reliable (consistent and fair),
- ii. frame how students learn,
- iii. be an integral and designed features of teaching and curriculum,
- iv. provide students with timely and quality feedback on their work and
- v. lead to students developing self and peer evaluation skills.

### **3. The purpose of Educational Assessment**

Having studied the principles of assessment, it is perhaps prudent to examine why we assess. The overarching purposes of educational assessments can be used;

- i. to monitor the performance of **students** and improve learning. These generally include summative and formative assessments,
- ii. to provide information that helps teachers monitor their effectiveness, enhance their teaching practices and make effective **instructional decisions** ,
- iii. for the purpose of **selection, placement and certification**,
- iv. to evaluate existing **policy decisions** and provide efficacy evidence for future policy decisions concerning, for example, curriculum and the effectiveness of pedagogical practices and
- v. to help self-understanding and help in **counselling and guidance decisions**.

#### **4. A new thinking about Assessment**

- i. Assessment is viewed as the process of monitoring a child's progress along a *developmental continuum*,
- ii. The focus shifts from comparing one individual with another, towards *monitoring* what students *know* and can *do and*
- iii. It is a model based on *growth*.

#### **5. Different types of Assessment carried out by Bhutan Council for School Examinations and Assessment (BCSEA)**

There are typically three form of Assessment at the national level carried out by the BCSEA. They are national education assessment (NEA), national/public examinations (BCSE and BHSCE) and competency based assessment modular for all levels and CBA tests (terminal at grades III and VI).

NEA studies commonly known as large scale assessment are generally low-stake to individual students and the findings are used to monitor the progress of the national system over the period. It also helps in taking stock of the condition of the current education system, providing timely information for reviewing the impact of reforms and resources allocation and identifying aspects of education system in need of support. Moreover, the dissemination and discussion of result with relevant stakeholders can enhance accountability (Postlethwaite and Kellaghan, 2008).

Public examinations are generally high-stake to the students and are administered at the end of completion of high schooling and higher secondary schooling for selection and

certification purpose and as well as for fixing accountability of schools to the different stakeholders. The results of the public examination score is also used to monitor the school performance and feedback to schools for improvement since 2006. However, high-stake examinations have always been criticized for the pressure that they placed on the students and the possibility of distorting the nature of teaching “teaching to the test” (Esther Sui-cho Ho, 2013).

Similarly, CBAT is a standardized testing that is administered at the completion of pre-primary and primary education. The information collected at these levels are very important to measure and benchmark the learning achievement of the students and to different stakeholders. Student performance on these tests has become the basis for such critical decisions as student promotion from one grade to the next, informing nation on the standard of education at these key stages and provides teachers with vital information about students’ learning. It is a new approach to assessment that the BCSEA is adopting in order to adopt the need of the 21<sup>st</sup> century learners.

#### **a. Competency-Based Assessment**

It is a form of assessment that is derived from a specified set of outcomes which very clearly states both the general and specific outcomes or competencies (knowledge, skills, values and attitude (KSVA), that assessors, students and stakeholders can make reasonably objective judgements with respect to student achievement of these outcomes/competencies that equip them to move to the next competency level and prepare them for life and the world of work (BCSEA, 2015).

The three important components of competency-based assessment which the definition above encapsulates are:

- i. the emphasis on outcomes; specifically, multiple outcomes, each of which is distinctive and separately considered,
- ii. the belief that these outcomes can and should be specified to the point where they are clear and “transparent”. Assessors, assessed, and the stakeholders should be able to understand what is being assessed and what should be achieved and
- iii. the isolating assessment from particular institutions or learning programmes.

## **b. Competency Based Questions**

Competency-based questions are tools that assess student outcomes/ competencies using diverse approaches to measure both general and specific skills as opposed to that of the conventional testing approach.

Competency-based questions can be better defined by its salient features as follows:

- i. emphasis on testing the USE of knowledge rather than knowledge itself,
- ii. items are context based and related to real life situation,
- iii. the terms and concepts are kept subtle,
- iv. items are thought provoking and interesting,
- v. items are linked to learning outcomes,
- vi. test all levels of cognitive, attitudinal and psychomotor skills and most learning strands,
- vii. tendency to move away from conventional testing approach and
- viii. learning happens (assessment for learning).

## **6. BCSEA's Efforts on Assessment Reforms**

The assessment in the Education System of Bhutan for the last many years has always been a constant source of debate among general public, professionals and educationists. BCSEA and its Assessment system have been under severe criticism from different stakeholders for testing lower order thinking skills (LOTs) of memory and rote learning factual learning instead of assessing higher order thinking skills (HOTs) that promote student ability to analyse, critique, reason, justify a position, solve problems and apply their knowledge and understanding. As a result, the students are unable to apply the understanding and the knowledge of the concepts in the real-life situations.

In its attempts to address this issue, BCSEA has initiated Competency Based Assessment (CBA) across all the level of the test since 2014 test development. It tries to bring possible and significant changes through:

- a) the use of a test blueprint that specifies the kind of thinking abilities, skills and values that will be assessed,
- b) introducing new questions formats that minimize demands on memory but maximize demands on the ability to apply information,
- c) moderation and standardization of draft questions to identify and eliminate those that may be answered through a memorized response and

- d) incorporating assessment of all strands of learning including listening and speaking skills (oral testing) in languages.

Competency based Assessment as mentioned elsewhere in this report is the process of collecting evidence and making judgments on whether students have demonstrated the required learning competency that will allow them to move to the next competency level in a study course. CBA assesses the learning outcomes (competencies) that are linked to students' needs in their real life situations and on measuring holistic development of the students. It defines educational goals precisely in measurable descriptions of knowledge, skills, and attitudes which students should possess at the end of a course of study.

It also measures the higher order thinking skills of students and gives scope for assessing the 21st skills that the 21st century learners require in order to meet the emerging challenges and opportunities arising out of globalization and rapid technological changes.

*Table 13 Implemented CBA weighting at the different levels with effect from 2015*

Type of Assessment	Level	Weighting of CBA
<b>School Based Assessment</b>	III and VI	20 - 50 %
<b>High Stake Examination</b>	X and XII	15 - 20%
<b>Large Scale Assessment</b>	NEA	50 - 80%

It is to be noted that the conventional belief is that question papers, particularly in high-stakes examinations such as BCSE (X) and BHSEC (XII), should be a logical mix of LOTs and HOTs items so that they cater to the mixed ability students. The current BCSEA question item development follows the same model where the test blueprint or the table of specification ideally forms a perfect bell-shaped curve. An examination system has to be highly cautious in including more HOTs question items in the high-stakes examination so as not to run into the danger of excluding the low performing candidates. Moreover, the timing of introducing more HOTs items should be carefully considered so that school system including students and teachers are firstly not taken by surprise, and secondly that most of the students do not fail. It must also consider the curriculum and more importantly teacher preparedness at source and in-service.

In case of Bhutan, however, BCSEA has already started developing teachers' guide books on competency based assessment in all subjects for Classes, IV, V, VII and IX and distributing them to schools since 2011. The guide books, containing question items on each chapter that are mostly HOTs, are being developed and supplied to schools so that teachers and students use them during classroom teaching and teachers use them as

models to develop their own class tests, midterm tests and final examination questions. The primary objective of this initiative was to develop higher order thinking skills in students and habituate our teachers in competency based teaching in their classrooms. This would in turn prepare our school system, particularly students, to be able to write Classes X and XII national level examinations that would gradually and increasingly be competency or HOTS-based.

As such, BCSEA's opinion is that it would not be any more a surprise if a reasonable percentage of our high-stakes examination questions become increasingly higher order thinking based over the years. However, the curriculum, teaching-learning process in schools, and teacher preparation process should adequately respond to this initiative.

### **7. Challenges of Assessment Reforms**

In the early theories of learning, it was believed that complex higher-order thinking skills were acquired in small pieces, breaking down learning into a series of prerequisite skills. After these pieces were memorized, the learner would be able to assemble them into complex understanding and insight -- the puzzle could be arranged to form a coherent picture. Today, we know learning requires that the learner engage in problem-solving to actively build mental models. Knowledge is attained not just by receiving information, but also by interpreting the information and relating it to the learner's knowledge base. What is important, and therefore should be assessed, is the learner's ability to organize, structure, and use information in context to solve complex problems (Grant Wiggins, etl.). Thus assessment system needs to revamp if it has to bridge the learning gap. In Bhutan the critics are of the opinion that the assessment system has only enabled Bhutanese students to reproduce content knowledge. It has not helped to attain the desired competencies at various levels, hence the whole assessment system needs to be revamped to ensure comprehensive assessment of students (Bhutan Education Blueprint, 2015).

The demands of today's world require students learn many skills. A knowledge-based, highly technological economy requires that student's master higher-order thinking skills and that they are able to see the relationships among seemingly diverse concepts. In addition, skills such as teamwork, collaboration, and moral character traits that aren't measured by our current system of assessment that are increasingly becoming important. Therefore, the major challenges that the assessment system everywhere in the world today facing is not able to monitor cognitive as well non-cognitive skills and competencies of the students. Watanabe (2010) argued, "Individuals needs the skills to be great collaborators and orchestrators, synthesizers, explainers, versatilists, personalisers and localizer for the 21<sup>st</sup> century." The need for holistic education and assessment reforms is very critical to latch with need of the society.

In addition, there is huge challenge of capacity building, management and technical skills for monitoring educational process and outcomes of new educational assessment. It will demands large financial funding and change in the mind-set of the individuals involved in education.

## 8. Conclusion

Assessment is at the heart of education. Testing forms the bedrock of educational assessment and represents a commitment to high academic standards and school accountability. Teachers and parents use test scores to gauge a student's academic strengths and weaknesses, communities rely on these scores to judge the quality of their educational system, and state and lawmakers use these same metrics to determine the quality of education. When the assessments are too narrow or aren't properly aligned to standards, they provide little concrete information that teachers and schools can use to improve teaching and learning for individual students.

The other way of looking at the modern assessment is making it more reliable and dynamic in order to cater the needs of 21<sup>st</sup> learners. For this to happen one must adopt rigorous, multiple forms of assessment that demands students to demonstrate and apply their competencies on what they have learned in the real world tasks. This is where an alternative assessment such as; standard project based assessment; evidence-based assessment; collaborative assessment; competency based assessment, etc., needs to be made available to our students apart from the conservative type of assessment which will help to get the true picture of the students being assessed.

The 21<sup>st</sup> century assessment should help students to able to recognize the knowledge and skills they are developing and confidence to apply them in new context. It should help the seamless integration of their knowledge into the learning journey, providing clear pathways for progression and improvement, building on prior learning. It should promote the spirit of life-long learning and should able to recognize their learning opportunities, evaluate their own strength and weakness, and know how to direct and improve their own learning (Boud and Falchikov, 2006). The assessment evaluates what the student needs to know in order to succeed in life. It evaluates how much further the student need to travel in order to reach the destinations for survival, fitness and leadership.

Assessment is one of the most effective instructional strategies to increase learning. According to an analysis of approximately 800 meta-analyses, including more than 52,000 studies and millions of students, teachers who study their own effects on student learning are highly effective in raising student achievement (Hattie, 2009). According to two additional meta-analyses, high-quality assessment that is integrated into regular classroom practice can increase the rate of learning (Black & Wiliam, 1998) and is a highly cost-



effective educational intervention (Yeh, 2007). *Editor's note (2015)*: More recently, new analyses indicate that additional research is needed to better define successful formative assessment practices and their effects on student learning (Bennett, 2011; Briggs et al., 2012; Kingston & Nash, 2011).

“Success depends upon previous preparation, and without such preparation there is sure to be failure.” *Confucius*.

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