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Government of West Bengal
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PREFACE

The system of education for a particular nation has its general educational goals and specific educational objectives. While some may stress equality of opportunity, others stress quality of education and equity issues, and many stress both. In every system of education changes are made by educational planners with the aim of improving the quality of education. These changes can include a revised curriculum and syllabus, new methods of orienting teachers, increasing the amount of provisions to schools, changing the structure from a selective to a comprehensive system, reducing class size, so on and so forth. In some cases innovations need to be tried out to identify their likely shortcomings, effects and side effects before they are implemented. In other cases achievement of learners over time in one or more subjects needs to be monitored, and even the attitudes and perceptions of educational administrators, teachers and learnerstoward the evolving perspectives in pedagogy need to be studied.

Educational planners are responsible for the planning of the various component of a system of education. Decisions must be taken on what to do to improve equality, quality, or both of each component.Exhaustive and objective information are required to help policy-planners and decision-takers to operate successfully, keeping in view the limits in time, funding and polity within which they work. Herein comes the role of the educational researcher, who can provide objective recommendations instead of subjective opinions to the planners and policy makers.

The State Council of Educational Research and Training [SCERT(WB)] under the Department of School Education, Government of West Bengal is the sole research wing of the Department in the domains of school education. The Council has been hence entrusted with the onus of carrying out a study on the educational outcomes of the results published by NCERT for the state of West Bengal – among other states/UT – in National Achievement Survey, 2017 (NAS 2017), which had been carried out on November the 13, 2017 throughout the country.

SCERT (WB) thus embarked on the study for finding out the issues behind the outcomes observed in elementary education in West Bengal in the light of NAS 2017, the report of which is presented in the following chapters. In this study SCERT (WB) invited expert advices from

teacher educators, head teachers and teachers, many of who assisted in various stages in this study.

The work of the researchers through the period of just above three months will get its due recognition if the study report can provide answers – even if partially – to the issues that the study has kept as its objectives.

Director, SCERT (WB)

Chapter 1

INTRODUCTION

1.1 PROLOGUE

As one of the self-assessing and self-corrective systems, the establishment involving school education has been vigilant on the processes involved in ensuring quality education for the learners in the national and state levels. Toward this end NCERT, based on National Curriculum Framework, 2005 has developed a document on Learning Outcomes (LO) at Elementary stage for each class in Languages (Hindi, English and Urdu), Mathematics, Environmental Studies, Science and Social Science up to the Elementary stage. These Learning Outcomes are the stage-appropriate, minimum levels of learning as defined by NCERT to facilitate the monitoring of learning of students against expected standards.

It was on the basis of these Learning Outcomes that on 13th November 2017,the National Achievement Survey, 2017 (NAS 2017) was conducted across the country by MHRD-NCERT in collaboration with all the states and Union Territories. The tools for the survey were designed in the light of the Learning Outcomes and tests were conducted for classes 3, 5&8.

All over the country, SCERTs/SIEs were the implementing agencies of the survey whereas the SSA was responsible for monitoring, data uploading with the help of district MIS Cells and providing necessary support. In West Bengal the total data uploading for NAS 2017 was done by SCERT (WB) with the assistance of DIETs and in collaboration with SSA through their district MIS Cells.

In West Bengal, NAS 2017 was conducted in 22 districts for each of classes 3, 5&8. In each district, 61 schools (Govt./Govt. Aided/Govt. Sponsored) for class 3, 61 schools (Govt./Govt. Aided/Govt. Sponsored) for class 5 and 51 schools (Govt./Govt. Aided/ Govt. Sponsored) for class 8 were sampled by NCERT. The total number of schools in West Bengal which came under the survey was 3695. The tests were conducted in Bengali, English, Hindi, Urdu and Oriya medium. 11,634 number of subject teachers were interviewed and the number of students who appeared in the survey was 74,600 (Class 3 – 22,981, Class 5 – 27,784, Class 8 – 23,835). The subjects that were tested were Language, Mathematics and EVS for class 3&5 and Language,

Mathematics, Science and Social Science for class 8. NCERT, after completion of the survey and data uploading, prepared District Report Cards (DRCs) and shared the same with all the SCERTs in January 2018. Thereafter SCERT(WB) circulated the softcopy of the DRCs with all the participating districts and also with PBSSM. Subsequently NCERT has also published the State Learning Report. In few instances the data published after analysis in the State Learning Report differs from the one that was published in the District Report Cards by NCERT. According to the

District Report Cards for the districts of West Bengal, the numbers of participating schools and students were 3745 and 75,431 respectively.

1.2 SALIENT OBSERVATIONS MADE IN NAS 2017

The State Learning Report, as shared by NCERT with West Bengal indicates that -

- for class 3, the maximum number of students performed in the range of above 75% in all the three tested subjects
- for class 5, the maximum number of students performed in the range of 50-75% in all the three subjects
- for class 8, the maximum number of students performed in the range of 50-75% in Language while in Mathematics, Science and Social Science, the maximum number of students performed in the lowest range which is below 30%.

In a meeting with the Hon'ble MIC, School Education, Govt. of West Bengal in his chamber at West Bengal Assembly on 20.03.2018, the Director, SCERT(WB) was entrusted with the task to carry out a study for finding out the issues behind the educational outcomes observed for the state after the conduct of NAS 2017. The Hon'ble MIC particularly desired to get this study done within a short period of around three months' time. The then Principal Secretary to the Govt. of West Bengal, Department of School Education, while according the departmental approval for conducting this study, added a few more related dimensions which he indicated that the study may attempt to explore. Thus, with a potent field of numerous factors to be explored and with a short time period available for the entire work – the then imminent Summer Vacations in schools compounding the woes of already severe time crunch –SCERT (WB) in April, 2018 embarked on its course for carrying out the study.

1.3 OBJECTIVES OF THE STUDY

Since the study is aimed at looking into the possible issues behind the educational outcomes as have already been observed in elementary education in West Bengal in the NAS 2017, the following are the objectives for the study-

1. To find out the differences between Learning Outcomes on which NAS 2017 was based and the Learning Outcomes as notified for the state of West Bengal.
2. To find out whether the Questions/Learning Outcomes of NAS - 2017 in which the students' performances were below the National Average, were covered under the then prevailing Learning Outcomes for students for the state of West Bengal.
3. To study the trend in the decline in outcome with respect to performances across the classes 3, 5 and 8 in NAS 2017.
4. To find the extent of alignment of Curriculum/Syllabus and Textbooks for classes 3, 5&8 under different Boards like WBBPE, WBBSE, CISCE & CBSE with the Learning Outcomes for these classes as outlined by NCERT.
5. To assess whether the teaching-learning processes carried out in the schools under WBBPE, WBBSE, CISCE& CBSE for the classes 3, 5&8, are in accordance with the Learning Outcomes as recommended by NCERT.
6. To find out whether the tools used in summative evaluation of the students by the schools under WBBPE and WBBSE are suitable for assessing the Learning Outcomes identified for NAS 2017for the classes 3, 5&8.
7. To recommend steps for improvement in the performance of learners in the elementary grades of schooling.

1.4 REVIEW OF RELATED WORK

While reporting on the West Bengal State Learning Report (SLR) for Classes 3, 5 and 8 under National Achievement Survey (NAS 2017) it has been stated that a list of select learning outcomes from the national level document (NCERT, 2017) – brought out and disseminated by NCERT prior to the survey – were kept as subject-wise references on which the items in their Tools were designed for the respective grades. The learners in the sampled schools and grades were tested with such Tools. The NAS 2017 further revealed several aspects of what the Head Teachers and Teachers had to reflect on the pedagogic processes that they follow, both from academic and administrative perspectives.

In their study of the Students' & Teachers' Time-on-Task in Primary Schools of West Bengal (Samanta, Dasgupta & Raychaudhuri, 2012) the aim in view was to assess the actual prevalent classroom processes to know how lessons are transacted in a classroom, how classrooms are managed, the physical and sociological environment of a classroom, the strategies adopted by teachers and the participation of the learners in the pedagogic process. Among several tools used in this study, a format (TS-4) titled *Observation Sheet for Within Class Activities* had been developed with the purpose of real time classroom observations. This tool contained two separate columns to record the teacher's and the learners' activities. The administering of the tool entailed a short duration of observation of the entire class and then recording the occurrences in the respective fields of teachers' and corresponding learners' activities. Samanta et al. (2012) showed that with proper administration this method of recording classroom observation can nearly simulate a "snapshot" of the undergoing processes inside that classroom in real time.

References

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[2] NCERT. (2017). *Learning outcomes at the elementary stage*. New Delhi: Secretary, National Council of Educational Research and Training, New Delhi

[3] Samanta, S., Dasgupta, S., & Raychaudhuri, A. (2012). *Students' & teachers' time-on-task in primary schools of West Bengal – a report (pp. 43 – 84).* Kolkata, Director, SCERT (WB).

Chapter 2

METHODOLOGY FOR THE STUDY

2.1 OVERVIEW

In this study for finding out the issues behind the educational outcomes observed in Elementary Education in West Bengal in the light of NAS 2017 information were collected through the following processes:

- by involving a pool of Head Teachers and Teachers – both in position and retired – to review in several phases the various educational resources like the curricula/syllabi and textbooks from different Boards/Council under the study. This resource pool, within an appreciably short period to cope with the paucity of available time, has given their observations in order to adequately answer the specific research objectives as per formats developed by SCERT (WB) for the purpose.
- by involving Teacher Educators, Head Teachers and Teachers to design the Tools for a survey in the sampled schools in the six districts under the study. These sampled schools have been those which follow the two Boards viz. WBBPE and WBBSE, in the select districts. The school-level survey under the study has been carried out by select personnel from DIETs in West Bengal in the sampled districts with liaison and under the supervision of SCERT (WB).

Keeping in view the objectives of the study the sampled schools following CISCE and CBSE curricula were also attempted to be accessed. Although the attempt saw initial success in getting a few teachers from the said Board/Council while analysing curricula, syllabi and textbooks were being done, the approach could not yield desired results in case of school visits due to factors discussed in detail under *Art. 2.5*.

2.2 SAMPLING

In the light of the performances of the districts inNAS 2017 a total of six districts of West Bengal viz., Uttar Dinajpur, Jalpaiguri, Alipurduar, Birbhum, Kolkata and Purba Medinipur had been considered for the study. In four of the six selected districts the performances of the students have been found to be low whereas in the remaining two selected districts performances have been found to be high as it came out in the State Learning Report published by NCERT. The study was carried out on children of classes 3, 5 and 8 of Govt./Govt. Sponsored/Govt. Aided schools of West Bengal. Five schools per class under WBBPE & WBBSE had been sampled in each of the six districts. A total of ninety (90) schools (of which 15Govt./Govt. Sponsored/Govt. Aided schools x 6 districts) came under the ambit of the study.

2.3 TOOLS

Two Questionnaires and one Classroom Observation Schedule – having two Parts, were administered for the study. The questionnaires were named SCHOOL QUESTIONNAIRE (SQ)– to be filled-in by the Head Teacher & TEACHER QUESTIONNAIRE (TQ) – to be filled-in by the subject teacher whose class would be observed on the day of visit. Apart from those, for recording the teaching–learning processes inside the classrooms a Classroom Observation Schedule (COS) has been administered in two segments: COS and COS-Part II – which was in essence a Pupil Questionnaire (PQ).

School questionnaire (SQ) was used for gathering general information about the surveyed school. The SQs were filled-in by the Head Teachers, with the assistance of the Field Investigators, as and when needed.

Teacher questionnaires (TQ) were for collecting the subject teachers' observations regarding pedagogical processes involved in elementary education. TQ was administered on one subject teacher per class per school, where the teachers were assisted by the Field Investigators to understand the items – as and when needed – before responding.

Classroom Observation Schedule (COS) was used for ascertaining the teaching-learning process which was happening in real time inside the classes under study.

There was also a Classroom Observation Schedule – Part II (COS-II) which involved recording of observations on issues related to their classroom experiences from five students of that particular class in the surveyed school.

SCERT (WB) also devised a format titled Field Notes for the FIs for capturing their experiences in the schools during the survey. The data recorded here are more perceptional than objective.

Along with the administration of the above questionnaires/schedules in the schools, tools used for end-of-term summative evaluation of the children were collected from the schools for assessing the suitability of those for testing the learning outcomes that the children for the classes 3, 5 and 8 should achieve.

Further an in-depth study of the Curriculum/ Syllabus / Textbooks of the classes 3, 5 and 8 in the schools under WBBPE, WBBSE, CISCE and CBSE was undertaken for finding out the extent of alignment with those of the class-wise Learning Outcomes as charted out by NCERT. Experts from varied fields viz. school teachers and head teachers have been involved in these processes. Analyses in the research were conducted in groups which had been formed by inviting experts from schools following different Boards/ Council under the study.

2.4 CONDUCT OF SURVEY UNDER THE STUDY

The survey has been carried out by SCERT (WB) in collaboration with the concerned DIETs. The Principals/In-charges of DIETs acted as the District Coordinators (DC) for this study. The members of faculty from the DIETs and SCERT (WB) visited the selected schools as Field Investigators (FI) and collected the relevant data. For this, the Principal/faculty/representatives of the DIETs/SCERT (WB) had been trained for facilitating the conduct of the survey in the schools. This was followed by data collection, organization and tabulation at the state level. A detailed Data Capturing Format (DCF) was designed for this purpose at SCERT (WB).

Thereafter, analysis of data as obtained from the districts and that obtained from experts regarding alignment of Learning Outcomes/Curriculum/Syllabus/ Textbooks etc., with the Learning Outcomes as recommended by NCERT for identifying the issues behind the educational outcomes as observed after NAS-2017 has been undertaken, the report from which has been presented in the following chapters.

2.5 DELIMITATION

The following have been the delimitations of the study:

1. In view of allocated time-frame for its completion, the survey work in study has been carried out only in six (06) districts – out of surveyed twenty two (22) districts of West Bengal – whose rankings in the state have been obtained from the State Learning Report of NAS 2017published by NCERT.
2. In consideration of the access available to the researcher, and the paucity of time in the study a Purposive Sampling was made to select mostly those schools which already came under NAS 2017 sample and have been located to provide optimal access to researchers within a very short period of field work. Although the schools and classes were the mostly the same as those in NAS 2017, the survey was made on a different cohort of learners for the specified grades.
3. Pedagogic processes were studied from among those schools only in our state that follow any one of the two Boards, namely WBBPE and WBBSE.
4. Although some initial headway could be achieved, the access to the schools following CBSE and CISCE curricula which are mostly privately run, English-medium schools in our state, posed an administrative challenge which could not be adequately addressed in the short time (*three months* from inception to completion of study) of the study. Different timing of Summer Vacations in the Private Schools also proved to be a bane in their inclusion, and hence CISCE and CBSE schools were kept out of the ambit of survey under the study

Chapter 3

AN ANALYSIS OF NAS 2017 EDUCATIONAL OUTCOMES

3.1 NATIONAL ACHIEVEMENT SURVEYS

The National Achievement Survey is conducted every year by NCERT usually through SCERTs (in states) for different classes (levels) and in different cycles from 2001. It is funded by MHRD. The major objective of the survey is to find out the health of the education system as a whole and accordingly to improve the quality in education. It includes all components of education such as curriculum, teachers, students, teaching learning materials, text books, teaching-learning process, infrastructure, facilities and so on. Accordingly tools are designed and tests are conducted for different classes in different cycles.

3.2 NATIONAL ACHIEVEMENT SURVEY, 2017 (NAS 2017)

As per guidelines of MHRD and NCERT, NAS 2017 has been conducted for three different classes (3, 5 and 8) in all states of the country. The test was conducted on 13th November 2017 throughout INDIA. The significant differences of NAS 2017 with previous years' surveys are as follows-

Dimensions	Previous Cycles of NAS	NAS 2017
PARAMETERS OF STUDENT TESTING	Common core curriculum	Grade specific learning outcomes
OBJECTIVE	Systemic feedback	Decentralized systemic feedback on learning outcomes
METHODOLOGY	State as a sampling unit – at grades 3, 5, 8 and 10	District as a sampling unit – at grades 3, 5 and 8
TIMELINES	3 year cycle	Complete within the session / preliminary results published by March,2018
SURVEY OUTCOMES	State and National Reports	District level feedback for quality interventions

[Source: NCERT document on NAS 2017]

The main features of NAS 2017 are as follows –

- Sample size for conducting NAS 2017 is much bigger than previous years. It was conducted on a single day for all the classes (3, 5 and 8) throughout the country.

- NAS 2017 was conducted based on Learning Outcomes of the corresponding levels where Learning Outcomes for different classes are already designed by NCERT and sent to different states with corresponding directives.
- SCERTs of corresponding states in collaboration with DIETs and other district level organizations were responsible for conduct of the tests.
- NAS 2017 witnessed extensive convergence of different stakeholders. SCERT was the implementing agency of the survey while SSA was responsible for monitoring, data uploading with the help of district MIS Cell and necessary support.
- During the administration of the tools on 13th November 2017, observers visited different schools of all districts. The observers were appointed by the office of the Chief Secretary of the corresponding State as per MHRD guidelines.

3.3 PERFORMANCE OF WEST BENGAL IN NAS 2017 AT A GLANCE
(PUBLISHED BY NCERT)

In West Bengal, NAS 2017 was administered in 22 districts, out of which 21 are Revenue Districts and 1 (Siliguri) is Education District.

Table No. 3.1 given below shows the number of schools, students and teachers that were covered under NAS 2017. These data are provided in the State Learning Report (for West Bengal) published by NCERT.

Table No. 3.1: Number of participating Schools, Students and Teachers in NAS 2017

Class	No. of Schools	No. of Students	Teachers
3	1297	22981	3579
5	1311	27784	3937
8	1087	23835	4118
TOTAL	3695	74600	11634

Class wise and Subject wise Students' Average Achievement (in percentage) -

NAS 2017 was conducted in Language, Mathematics and EVS for classes 3 and 5; and in Language, Mathematics, Science and Social Science for class 8. Table No. 3.2 gives a picture of the average achievement of the students of the three classes in different subjects. For example, the average achievement of class 3 students in EVS is 71%. This signifies that on an average, students of class 3 responded 71% of the given items in EVS correctly.

Table No. 3.2 also shows the comparison of the state and national averages. It is evident from the Table that the state average is higher than the national average in all subjects for class 3 and in Mathematics for class 5. The state average is lower than the national average in all subjects for class 8. Thus a declining trend is seen in the performance of the students from class 3 to class 8.

Table No. 3.2: Class wise and Subject wise Students' Average Achievement (in %)

	EVS		Language		Mathematics		Science		Social Science	
	State	**National**	**State**	**National**	**State**	**National**	**State**	**National**	**State**	National
Class 3	71	65	75	68	71	64	-	-	-	-
Class 5	54	57	56	58	48	43	-	-	-	-
Class 8	-	-	55	57	39	42	41	44	38	44

Class wise and Subject wise Distribution of Students' Achievement -

The achievement of students is broken up in four ranges – up to 30%, 30 -50%, 50 – 75% and above 75%. Table No. 3.3 below shows the distribution of the percentage of students of the three classes achieving in a specified range for all the subjects. It can be seen that the percentage of students achieving in the higher ranges decreases from class 3 to class 8.

Table No. 3.3: Class wise and Subject wise Distribution of Students' Achievement

Class	**Subject**	**Percentage of Students Achieving**			
		Upto 30%	**30% to 50%**	**50% to 75%**	**Above 75%**
3	Language	4.8	10.4	28.6	56.3
	Mathematics	7.6	13.0	31.0	48.9
	EVS	7.7	11.4	30.9	50.0
5	Language	17.2	23.6	33.8	25.3
	Mathematics	25.7	29.0	29.0	15.8
	EVS	19.9	25.8	33.8	20.5
8	Language	16.8	24.4	38.2	20.5
	Mathematics	42.1	32.0	17.0	8.8
	Science	34.5	34.9	24.4	6.3
	Social Science	42.0	33.7	19.3	5.0

Average Performance of the Districts in NAS 2017 –

The participating districts were assigned positions based on the *district mean* by NCERT. The individual positions of the districts for each class can be seen from the table below (Table No. 3.4).

Table No. 3.4: Average Performance of the Districts in NAS 2017

Position	Class 3	Class 5	Class 8
1	Kolkata	Kolkata	Purba Medinipur
2	Coochbehar	Purba Medinipur	Kolkata
3	Purba Bardhaman	South 24 Parganas	South 24 Parganas
4	Paschim Bardhaman	Hooghly	Paschim Medinipur
5	Purba Medinipur	Purba Bardhaman	Murshidabad
6	Howrah	Paschim Medinipur	Purba Bardhaman
7	Dakshin Dinajpur	Bankura	Jhargram
8	Paschim Medinipur	Coochbehar	Paschim Bardhaman
9	South 24 Parganas	Howrah	Nadia
10	Nadia	Malda	Malda
11	Jhargram	Paschim Bardhaman	Hooghly
12	Hooghly	North 24 Parganas	Howrah
13	Malda	Murshidabad	Siliguri
14	North 24 Parganas	Nadia	North 24 Parganas
15	Purulia	Purulia	Coochbehar
16	Murshidabad	Alipurduar	Birbhum
17	Birbhum	Jhargram	Bankura
18	Bankura	Uttar Dinajpur	Dakshin Dinajpur
19	Alipurduar	Siliguri	Alipurduar
20	Siliguri	Dakshin Dinajpur	Purulia
21	Uttar Dinajpur	Birbhum	Jalpaiguri
22	Jalpaiguri	Jalpaiguri	Uttar Dinajpur

Average Performance of West Bengal in Learning Outcomes (LOs) of NAS 2017–

Table Nos. 3.5, 3.6 and 3.7 indicate the average performance of students of classes 3, 5 and 8 respectively of West Bengal in Learning Outcomes tested in NAS 2017. These tables show the decreasing order of the average performance of the students with respect to the individual LOs tested in NAS 2017.

Table No. 3.5: Average Performance of West Bengal in LO of NAS 2017 (Class 3)

Learning Outcomes for Class 3	Average Performance (in percentage)
EVS	
voices opinion on good/bad touch; stereotypes for tasks/play/food in family w.r.t gender, misuse/wastage of food and water in family and school	80
groups objects, birds, animals, features, activities according to differences/ similarities using different senses. (e.g., appearance/place of living/ food/ movement/likes-dislikes/ any other features)using different senses.	76
identifies relationships with and among family members	75
describes need of food for people of different age groups; animals and birds, availability of food and water and use of water at home and surroundings	71
identifies objects, signs(vessels, stoves, transport, means of communication, transport, signboards etc.);places(types of houses/shelters, bus stand, petrol pump etc.) activities (works people do, cooking processes, etc.) at home/school/ neighbourhood	70
guesses properties, estimates quantities; of materials/activities in daily life and verifies using symbols/non-standard units (hand spans, spoon/mugs, etc.)	69
records observations, experiences, information on objects / activities / places visited in different ways and predicts patterns (e.g., shapes of moon, seasons)	66
identifies directions, location of objects/ places in simple maps(of home/classroom/ school) using signs/symbols/verbally	65
identifies simple features (e.g., movement, at places found/kept, eating habits, sounds) of animals and birds) in the immediate surroundings	60
observes rules in games (local, indoor, outdoor)and other collective tasks	53
LANGUAGE	
reads small texts with comprehension i.e., identifies main idea, details and sequence and draws conclusions in English	76
reads printed scripts on the classroom walls: poems, posters, charts etc.	72
MATHEMATICS	
records data using tally marks, represents pictorially and draws conclusions.	84

identifies and makes 2D-shapes by paper folding , paper cutting on the dot grid, using straight lines etc.	82
reads the time correctly to the hour using a clock/watch	79
compares numbers up to 999 for their value based on their place value	78
constructs and uses the multiplication facts (tables) of 2, 3, 4, 5 and 10 in daily life situations	74
explains the meaning of division facts by equal grouping/sharing and finds it by repeated subtraction	72
reads and writes numbers up to 999 using place value	69
solves simple daily life problems using addition and subtraction of three digit numbers with and without regrouping, sums not exceeding 999	66
analyses and applies an appropriate number operation in the situation/ context	66
extends patterns in simple shapes and numbers	62
estimates and measures length and distance using standard units like centimetres or metres and identifies relationships	51
fills a given region leaving no gaps using a tile of a given shape	42

Table No. 3.6: Average Performance of West Bengal in LO of NAS 2017 (Class 5)

Learning Outcomes for Class 5 **(* signifies Learning Outcomes of class 4)**	**Average Performance (in percentage)**
EVS	
explains the role and functions of different institutions in daily life. (bank, panchayat, cooperatives, police station, etc.)	65
suggests ways for hygiene, health, managing waste, disaster/emergency situations and protecting/saving resources	65
identifies relationship with and among family member in extended family*	61
records observations /experiences/ information for objects, activities, phenomena, places visited in different ways and predicts patterns and activities / phenomena*	54
traces the changes in practices, customs, techniques of past and present through coins, paintings, monuments, museum etc. and interacting with elders	54
describes the interdependence among animals, plants and humans(e.g., communities earning livelihood from animals, dispersal of seeds etc.)	53
guesses (properties, conditions of phenomena), estimates spatial quantities (distance, area, volume, weight etc.) and time in simple standard units and verifies using simple tools/set ups	53
records observations and experiences; information in an organised manner (e.g., in tables/ sketches/ bar graphs/ pie charts) and predicts patterns in activities/ phenomena (e.g., floating, sinking, mixing, evaporation, germination, spoilage) to establish relation between cause and effect	52
identifies signs, directions, location of different objects/landmarks of a locality / place visited in maps and predicts directions in context of positions at different places for a location	50
voices opinions on issues observed/ experienced and relates practices / happenings to larger issues of society	49
establishes linkages among terrain, climate, resources (food, water, shelter,	32

livelihood)and cultural life.(e.g., life in distant/difficult areas like hot/cold deserts)	
groups objects, materials, activities for features and properties such as–shape, taste, colour, texture, sound, traits etc.	32
explains the super senses and unusual features (sight, smell, hear, sleep, sound, etc.)of animals and their responses to light, sound, food etc.	31
LANGUAGE	
reads text with comprehension, locates details and sequence of events	59
reads and comprehends independently storybooks, news items / headlines, advertisements etc.	51
MATHEMATICS	
calculates time intervals / duration of familiar daily life events by using forward or backward counting / addition or subtraction*	62
represents the collected information in tables and bar graphs and draws inferences from these*	57
finds the number corresponding to part of a collection	56
reads and writes numbers bigger than1000 being used in her/his surroundings	54
collects data related to various daily life situations, represents it in tabular form and as bar graphs and interprets it.	53
estimates sum, difference, product and quotient of numbers and verifies the same using different strategies like using standard algorithms or breaking a number and then using operation	52
applies operations of numbers in daily life situations*	51
converts fractions into decimals and vice versa	49
explores the area and perimeter of simple geometrical shapes (triangle, rectangle, square) in terms of given shape as a unit*	48
relates different commonly used larger and smaller units of length, weight and volume and converts larger units to smaller units and vice versa	46
classifies angles in to right angle, acute angle, obtuse angle and represents the same by drawing and tracing	44
identifies and forms equivalent fractions of a given fraction	41
applies the four fundamental arithmetic operations in solving problems involving money, length, mass, capacity and time intervals	41
identifies the pattern in triangular number and square number	39
estimates the volume of a solid body in known units	35

Table No. 3.7: Average Performance of West Bengal in LO of NAS 2017 (Class 8)

Learning Outcomes for Class 8 **(* signifies Learning Outcomes of classes 6 and 7)**	**Average Performance (in percentage)**
LANGUAGE	
reads textual/non-textual materials with comprehension and identifies the details, characters, main idea and sequence of ideas and events while reading	54
MATHEMATICS	
adds / subtracts algebraic expressions*	53
uses various algebraic identities in solving problems of daily life	51
finds various representative values for simple data from her / his daily life contexts like mean, median and mode*	48

finds rational numbers between two given rational numbers	41
provesdivisibilityrulesof2,3,4,5,6,9and 11	40
draws and interprets bar charts and pie charts	39
solves problems on daily life situations involving addition and subtraction of fractions / decimals*	38
finds squares, cubes and square roots and cube roots of numbers using different methods	37
finds out the perimeter and area of rectangular objects in the surroundings like floor of the classroom, surfaces of a chalk box etc.*	37
interprets the division and multiplication of fractions*	37
solves problems involving large numbers by applying appropriate operations*	36
arranges given / collected information in the form of table, pictograph and bar graph and interprets them*	36
interprets data using bar graph such as consumption of electricity is more in winters than summer*	36
finds out approximate area of closed shapes by using unit square grid / graph sheet*	34
solves problems related to daily life situations involving rational numbers*	32
finds surface area and volume of cuboidal and cylindrical object	31
solves problems related to conversion of percentage to fraction and decimal and vice versa*	31
verifies properties of parallelograms and establishes the relationship between them through reasoning	30
uses exponential form of numbers to simplify problems involving multiplication and division of large numbers*	28
generalises properties of addition, subtraction, multiplication and division of rational numbers through patterns	26
SCIENCE	
makes efforts to protect environment	58
differentiates materials, organisms and processes	56
measures and calculates e.g. temperature; pulse rate; speed of moving objects; time period of a simple pendulum, etc.*	46
relates processes and phenomenon with causes*	43
relates processes and phenomenon with causes	41
measures angles of incidence and reflection, etc.	39
applies learning of scientific concepts in day- to-day life	38
classifies materials and organisms based on properties / characteristics*	38
plots and interprets graphs*	36
explains processes and phenomenon	32
constructs models using materials from surroundings and explains their working*	31
conducts simple investigation to seek answers to queries*	25
SOCIAL SCIENCE	
explains preventive actions to be undertaken in the event of disasters*	52
analyses the issues related to caste, women, widow remarriage, child marriage, social reforms and the laws and policies of colonial administration towards these issues	51
draws bar diagram to show population of different countries/India/states	51

differentiates between different kinds of markets*	50
traces how goods travel through various market places*	47
describes formation of landforms due to various factors*	47
justifies judicious use of natural resources	43
explains the origin, nature and spread of the revolt of 1857 and the lessons learned from it	39
describes major crops, types of farming and agricultural practices in her/his own area/ state	39
explains the functioning of media with appropriate examples from newspapers*	37
draws interrelationship between types of farming and development indifferent regions of the world	35
distinguishes the 'modern period' from the 'medieval' and the 'ancient' periods through the use of sources	35
explains the significance of equality in democracy*	35
identifies latitudes and longitudes, e.g., poles, equator, tropics, States / UTs of India and other neighbouring countries on globe and the world map*	34
describes the functioning of rural and urban local government bodies in sectors like health and education*	33
locates distribution of important minerals, e.g., coal and mineral oil on the world map	31
identifies the role of Government in providing public facilities such as water, sanitation, road, electricity etc., and recognises their availability	30
describes the process of election to the legislative assembly*	29
analyses the decline of pre-existing urban centres and handicraft industries and the development of new urban centres and industries in India during the colonial period	27
locates important historical sites, places on an outline map of India	24
describes the process of making a law.(e.g., Domestic Violence Act, RTI Act, RTE Act)	22
applies the knowledge of the Fundamental Rights to find out about their violation, protection and promotion in a given situation	21

3.4 CHAPTER SUMMARY

- In West Bengal, NAS 2017 was administered in 22 districts. The survey covered 3695 schools (class 3 - 1297, class 5 – 1311, class 8 – 1087) , 74,600 students (class 3 – 22,981, class 5 – 27,784, class 8 – 23,835) and 11,634 teachers (class 3 – 3579, class 5 – 3937, class 8 – 4118).
- The state average is higher than the national average in all subjects for class 3 and in Mathematics for class 5. The state average is lower than the national average in all subjects for class 8. Thus a declining trend is seen in the performance of the students from class 3 to class 8.

- The percentage of students achieving in the higher range (above 75%) decreases from class 3 to class 8.
- The districts securing first three positions in NAS 2017 for class 3 are Kolkata, Coochbehar and Purba Bardhaman. The districts having lowest three positions are Siliguri, Uttar Dinajpur and Jalpaiguri.
- The districts securing first three positions in NAS 2017 for class 5 are Kolkata, Purba Medinipur and South 24 Parganas. The districts having lowest three positions are Dakshin Dinajpur, Birbhum and Jalpaiguri.
- The districts securing first three positions in NAS 2017 for class 8 are Purba Medinipur, Kolkata and South 24 Parganas. The districts having lowest three positions are Purulia, Jalpaiguri and Uttar Dinajpur.

Chapter 4

EXTENT OF ALIGNMENT OF STATE LEARNING OUTCOMES WITHLEARNING OUTCOMES PUBLISHED BY NCERT

4.1 BACKGROUND

The Learning Outcomes published by NCERT in April 2017 were compared with the subject wise State Learning Outcomes of West Bengal titled, "*Expected Learning Outcomes at the Elementary Level*" as developed by the Expert Committee on School Education, Govt. of West Bengal in April 2018. This exercise was also carried out for Council of Indian Schools Certificate Examination (CISCE) and Central Board of Secondary Education (CBSE).

A format was developed at SCERT (WB) and subject teachers from different schools were invited to study the extent of alignment of state LOs with LOs published by NCERT.

4.2 CLASSWISE ALIGNMENT OF STATE LEARNING OUTCOMES WITHLEARNING OUTCOMES PUBLISHED BY NCERT

The Learning Outcomes as published by the state agencies for the classes 3, 5 and 8 were compared with the Learning Outcomes as published by NCERT for the same classes.

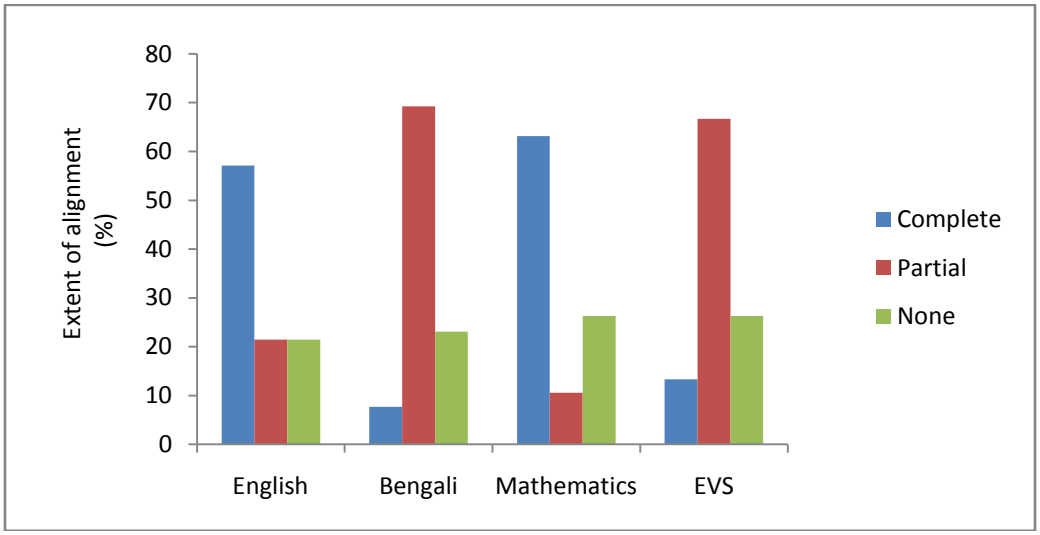
4.2.1CLASS 3, BOARD: WBBPE

The Table No. 4.1 (Figure No. 4.1) shows the extent of alignment (in percentage) of the Learning Outcomes published by NCERT with those followed by the state of West Bengal in class 3. Three subjects that were tested in NAS 2017 were taken into consideration–Language (English and Bengali), Mathematics and EVS. The percentage of complete alignment is highest for Mathematics (63.16%) and the percentage of partial alignment is highest for Bengali (69.23%). The percentage of extent of no alignmentvaries from 20 to 26.32 for all the subjects.

Table No. 4.1: Extent of Alignment of State LOs with NCERT LOsfor all Subjects of Class 3

Subject	No. of NCERT LO	Extent of Alignment (in %)		
		State LO		
		Complete	Partial	None
English	14	57.14	21.43	21.43
Bengali	13	7.69	69.23	23.08
Mathematics	19	63.16	10.53	26.32
EVS	15	13.33	66.67	20.00

Figure No. 4.1: Extent of Alignment of State LOs with NCERT LOsfor all Subjects of Class 3



4.2.2 CLASS 5, BOARD: WBBPE

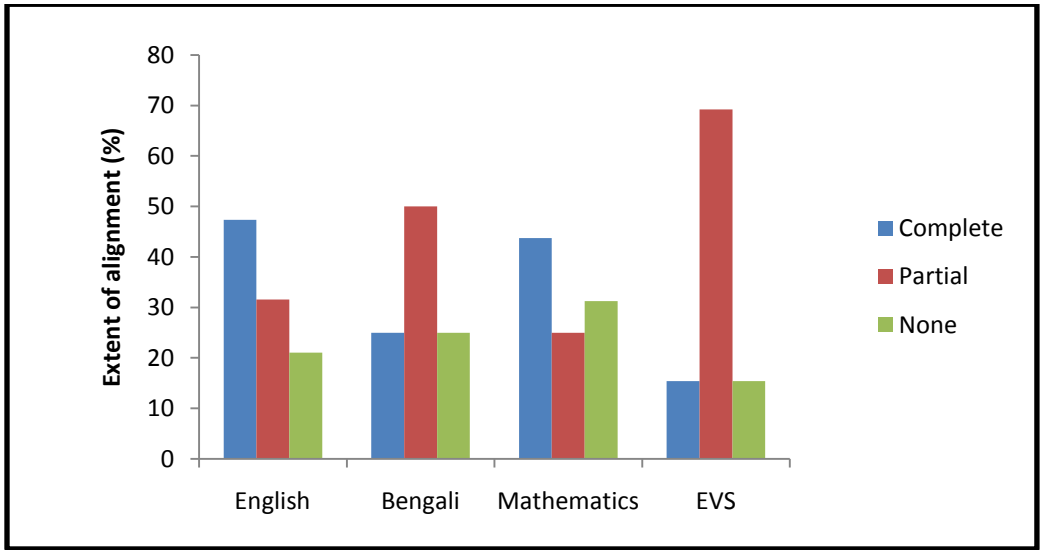
TheTable No. 4.2 (Figure No. 4.2) showsthe extent of alignment (in percentage) of the Learning Outcomes published by NCERT with those followed by the state of West Bengal in class 5. Three subjects that were tested in NAS 2017 were taken into consideration – Language (English and Bengali), Mathematics and EVS. The percentage of complete alignment is highest for

English(47.37%) and the percentage of partial alignment is highest for EVS (69.23%). The percentage of no alignment is the highest for Mathematics (31.25%).

Table No. 4.2:Extent of Alignment of State LOs with NCERT LOsfor all Subjects of Class 5

Subject	No. of NCERT LO	Extent of Alignment (in %) State LO		
		Complete	Partial	None
English	19	47.37	31.58	21.05
Bengali	16	25	50	25
Mathematics	16	43.75	25	31.25
EVS	13	15.38	69.23	15.38

Figure No. 4.2:Extent of Alignment of State LOs with NCERT LOs for all Subjects of Class 5



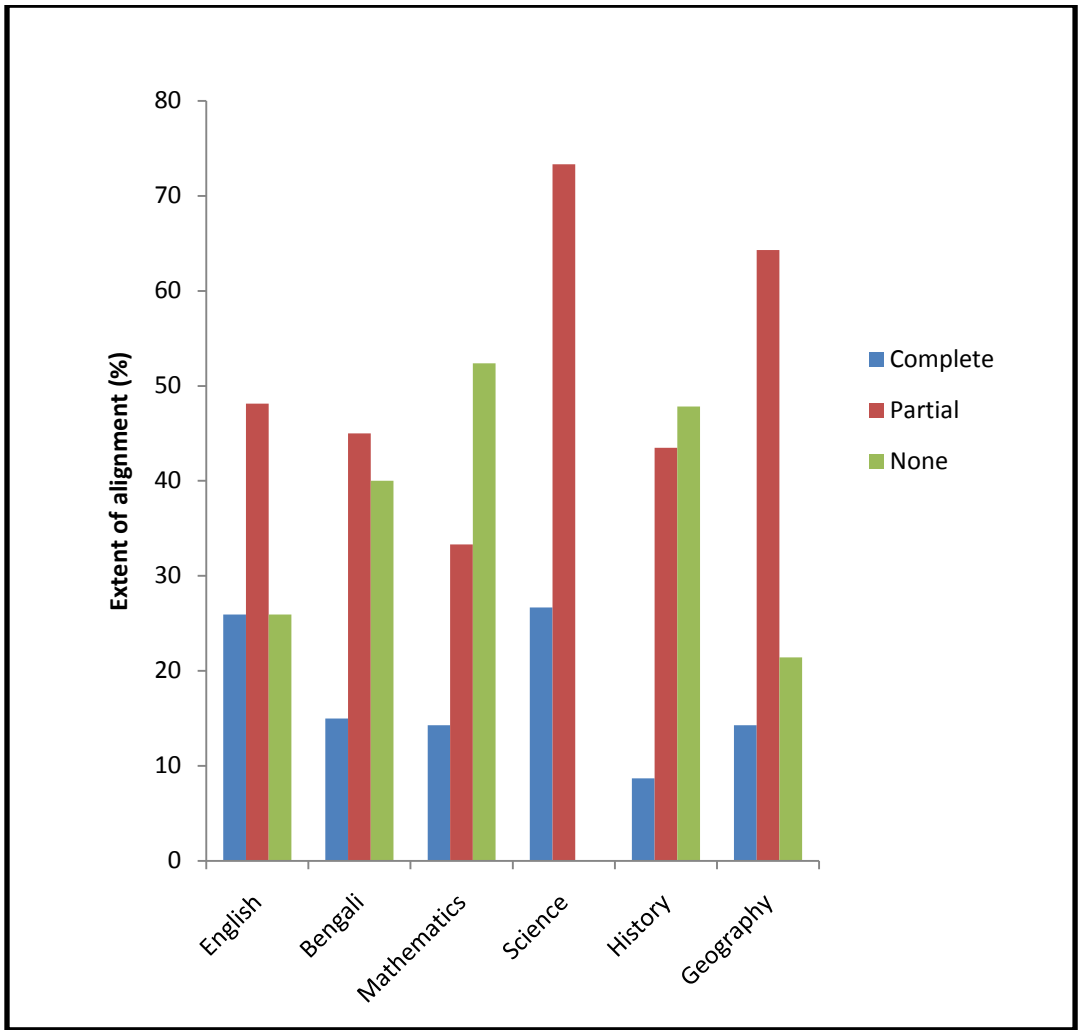
4.2.3 CLASS8, BOARD: WBBSE

The Table No. 4.3 (Figure No. 4.3) given below showsthe extent of alignment (in percentage) of the Learning Outcomes published by NCERT with those followed by the state of West Bengal in class 8. Four subjects that were tested in NAS 2017 were taken into consideration–Language (English and Bengali), Mathematics, Science and Social Science (History and Geography). The percentage of complete alignment is highest for Science (26.67%) and the percentage of partial alignment is also highest for Science (73.33%). The percentage of no alignment is the highest for Mathematics (52.38%) and the least for Science (nil).

Table No. 4.3: Extent of Alignment of State LOs with NCERT LOsfor all Subjects of Class 8

Subject	No. of NCERT LO	Extent of Alignment (in %)		
		State LO		
		Complete	Partial	None
English	27	25.93	48.15	25.93
Bengali	20	15	45	40
Mathematics	21	14.29	33.33	52.38
Science	15	26.67	73.33	0.00
History	23	8.70	43.48	47.83
Geography	14	14.29	64.29	21.43

Figure No. 4.3: Extent of Alignment of State LOs with NCERT LOsfor all Subjects of Class 8



4.3 CHAPTER SUMMARY

- Three subjects were tested in NAS 2017 for class 3. The subjects are–Language (English and Bengali), Mathematics and Environmental Science (EVS). For this classthe percentage of complete alignment ofLearning Outcomes published by NCERT with those followed by the state of West Bengal is highest for Mathematics (63.16%) and the percentage of partial alignment is highest for Bengali (69.23%). The percentage of no alignment is almost the same for all the subjects.
- In case of class 5 three subjects that were tested in NAS 2017 were taken into consideration – Language (English and Bengali), Mathematics and EVS. The extent of complete alignment (in percentage) of the LOs published by NCERT with those followed

by the state of West Bengal is highest for English (47.37%) and the percentage of partial alignment is highest for EVS (69.23%). The percentage of no alignment is the highest for Mathematics (31.25%).

- Four subjects were tested for class 8 in NAS 2017. The subjects were Language (English and Bengali), Mathematics, Science and Social Science (History and Geography). For class 8, the percentage of complete alignment between the NCERT and state LOsis highest for Science (26.67%) and the percentage of partial alignment is also highest for Science (73.33%). The percentage of no alignment is highest for Mathematics (52.38%) and the least for Science (nil).

Chapter 5

ALIGNMENT OF TEXTBOOKS AND CURRICULUM / SYLLABUS OF DIFFERENT BOARDS WITH LEARNING OUTCOMES PUBLISHED BY NCERT

5.1 EXTENT OF ALIGNMENT OF STATETEXTBOOKS AND CURRICULUM / SYLLABUSWITH LEARNING OUTCOMES PUBLISHED BY NCERT

The Learning Outcomes published by NCERT were compared with the textbooks of the West Bengal Board of Primary Education (WBBPE) for classes 3 and 5 and West Bengal Board of Secondary Education (WBBSE) for class 8 developed by the Expert Committee on School Education, Govt. of West Bengal. The curricula / syllabi of the two Boards for the said classes were also studied in the light of NCERT learning outcomes.

It may be noted that the Learning Outcome document was published by NCERT in April, 2017 and the State Learning Outcome document titled, "***Expected Learning Outcomes at the Elementary Level***" was developed by the Expert Committee on School Education, Govt. of West Bengal in April, 2018. The current curriculum / syllabus for West Bengal Board of Primary Education (Primary School Curriculum and Syllabus) and West Bengal Board of Secondary Education (Upper Primary School Curriculum and Syllabus) was published in the year 2014. The text books that are presently being used in the schools of the state were developed on the basis of the curriculum/syllabus that was published in 2014. All the text books that were used for assessing the extent of alignment with the National LOs were printed before the publication of the State Learning Outcomes.

A format was developed at SCERT (WB) and the pages of all textbooks of the concerned subjects of different Boards were scanned by a group of experts including practising head teachers and subject teachers to see to what extent the NCERT Learning Outcomes are reflected in the textbooks and curriculum / syllabus.

5.1.1 CLASS 3, BOARD: WBBPE

The Table No.5.1 [Figure No. 5.1(a) to 5.1(d)] shows the extent of alignment (in percentage) of the Learning Outcomes published by NCERT with the textbooks and curriculum / syllabus followed by the state of West Bengal in class 3. Three subjects that were tested in NAS 2017 were taken into consideration – Language (English and Bengali), Mathematics and EVS.

In case of textbooks, the percentage of complete alignment is highest for Mathematics (63.16%) and the percentage of partial alignment is highest for EVS (73.33%). The percentage of no alignment is the highest for Bengali (53.85%) and the least for EVS (nil).

In case of curriculum / syllabus, the percentage of complete alignment is highest for Bengali (61.54%) and the percentage of partial alignment is highest for English (71.43%). The percentage of no alignment is the highest for EVS (33.33%) and the least for English (7.14%).

If we see the parity among NCERT Learning Outcomes and their reflection in state textbooks and curriculum / syllabus for a particular subject, the highest parity is shown in Mathematics, followed by EVS.

Table No.5.1: Alignment of NCERT LOs with State LOs, Textbooks and Curriculum / Syllabus for Class 3

Subject	No. of NCERT LO	Extent of Alignment (in %)								
		State LO			Text Book			Curriculum / Syllabus		
		Complete	Partial	None	Complete	Partial	None	Complete	Partial	None
English	14	57.14	21.43	21.43	57.14	35.71	7.14	21.43	71.43	7.14
Bengali	13	7.69	69.23	23.08	23.08	23.08	53.85	61.54	23.08	15.38
Mathematics	19	63.16	10.53	26.32	63.16	10.53	26.32	47.37	21.05	31.58
EVS	15	13.33	66.67	20.00	26.67	73.33	0	13.33	53.33	33.33

Figure No. 5.1(a): Alignment of NCERT LOs with State LOs,Textbooks, Curriculum/ Syllabus inEnglish for Class 3

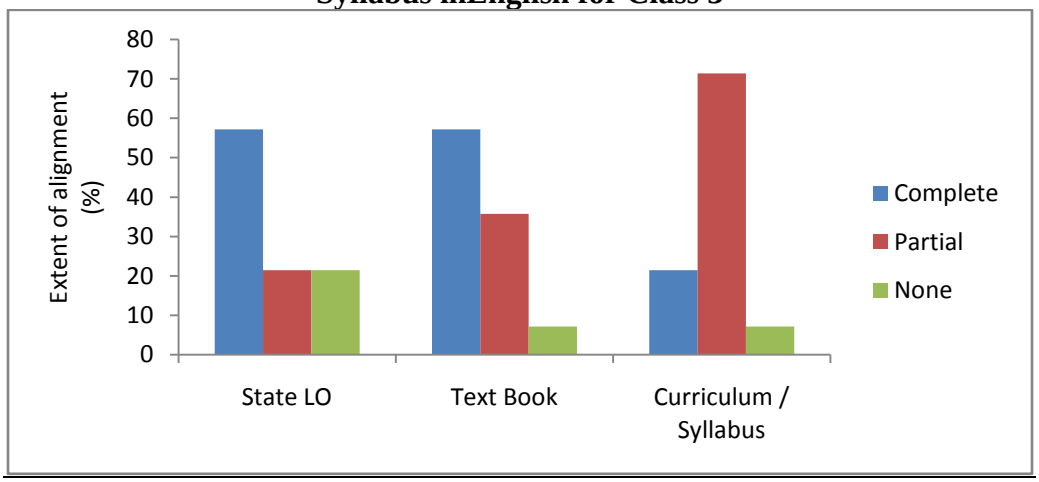


Figure No. 5.1(b): Alignment of NCERT LOs with State LOs, Textbooks, Curriculum/ Syllabus inBengali for Class 3

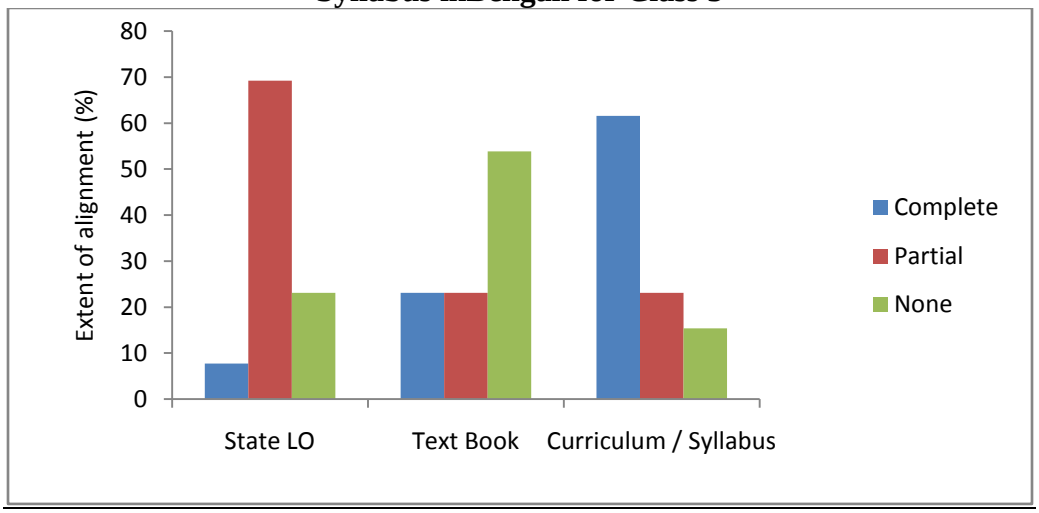


Figure No. 5.1(c): Alignment of NCERT LOs with State LOs, Textbooks, Curriculum/ Syllabus inMathematicsfor Class 3

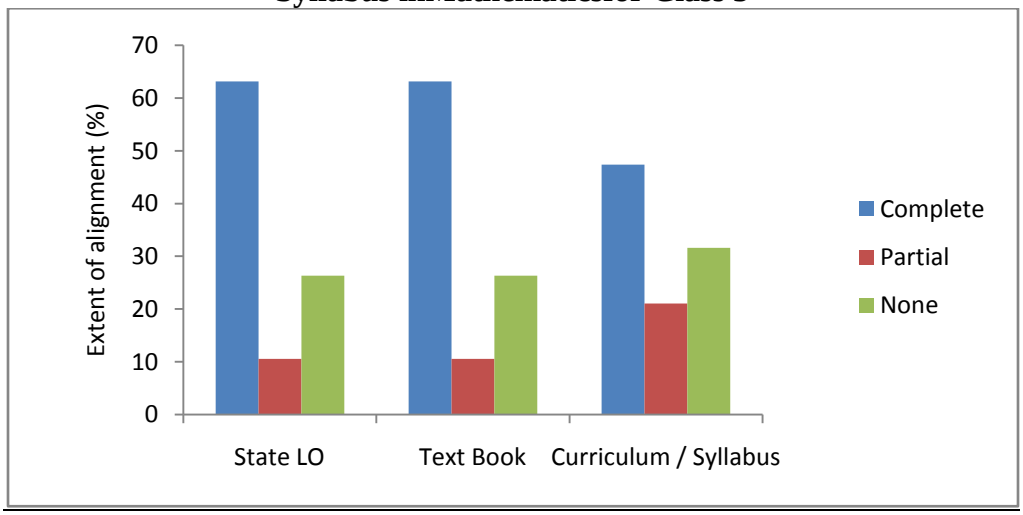
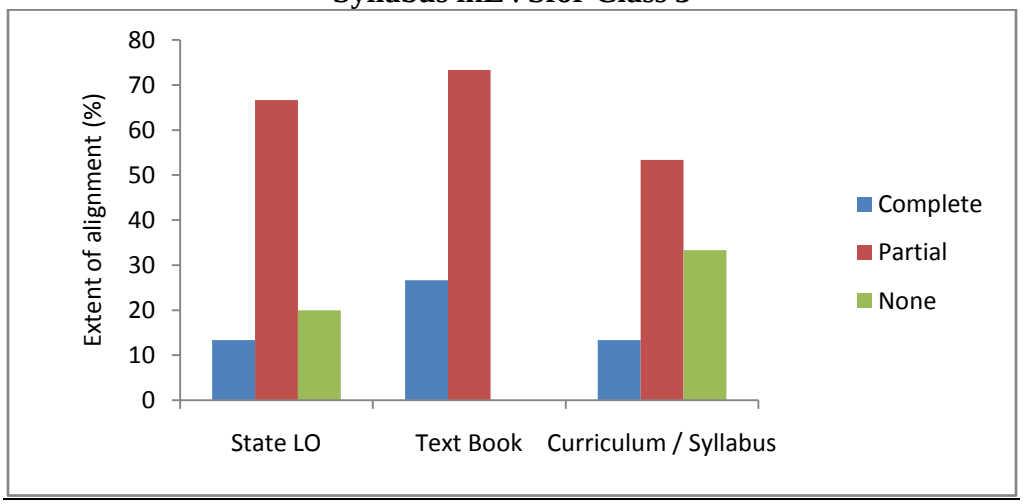


Figure No. 5.1(d): Alignment of NCERT LOs with State LOs, Textbooks, Curriculum/ Syllabus inEVSfor Class 3



5.1.2 CLASS 5, BOARD: WBBPE

The Table No. 5.2[Figure No. 5.2(a) to 5.2(d)]shows the extent of alignment (in percentage) of the Learning Outcomes published by NCERT with the textbooks and curriculum / syllabus followed by the state of West Bengal in class 5. Three subjects that were tested in NAS 2017 were taken into consideration–Language (English and Bengali), Mathematics and EVS.

In case of textbooks, the percentage of complete alignment is highest for Mathematics (50.00%) and the percentage of partial alignment is highest for Bengali (62.50%). The percentage of no alignment is the highest for English (21.05%) and the least for Mathematics (12.50%).

In case of curriculum / syllabus, the percentage of complete alignment is highest for Mathematics (75%) and the percentage of partial alignment is highest for Bengali (81.25%). The percentage of no alignment is the highest for English (36.84%) and the least for Bengali and Mathematics (6.25%).

If we see the parity among NCERT Learning Outcomes and their reflection in state textbooks and curriculum / syllabus for a particular subject, the highest parity is shown in EVS, followed by Mathematics.

Table No.5.2:Alignment of NCERT LOs with State LOs, Textbooks and Curriculum / Syllabusfor Class 5

Subject	No. of NCERT LO	Extent of Alignment (in %)								
		State LO			Text Book			Curriculum / Syllabus		
		Complete	Partial	None	Complete	Partial	None	Complete	Partial	None
English	19	47.37	31.58	21.05	42.11	36.84	21.05	47.37	15.79	36.84
Bengali	16	25	50	25	18.75	62.5	18.75	12.5	81.25	6.25
Mathematics	16	43.75	25	31.25	50	37.5	12.5	75	18.75	6.25
EVS	13	15.38	69.23	15.38	30.77	53.85	15.38	15.38	69.23	15.38

Figure No. 5.2(a):Alignment of NCERT LOs with State LOs, Textbooks,Curriculum/ Syllabus inEnglish for Class5

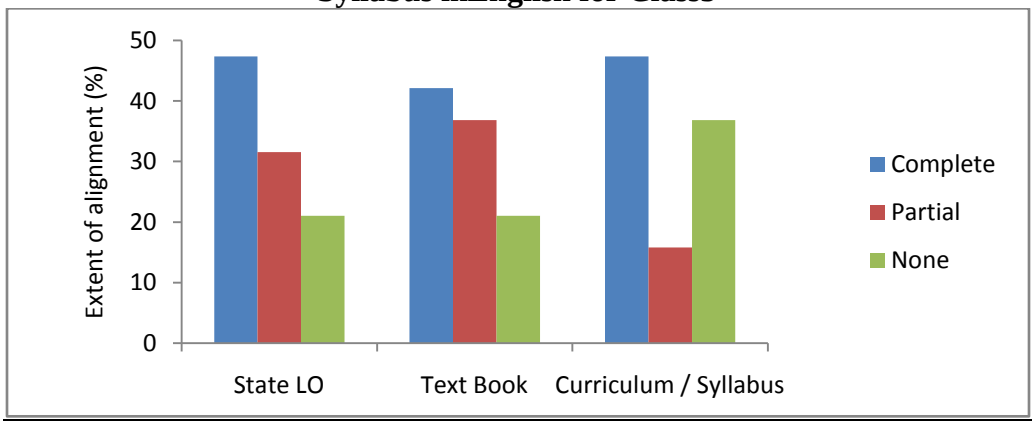


Figure No. 5.2(b):Alignment of NCERT LOs with State LOs, Textbooks, Curriculum/ SyllabusinBengalifor Class5

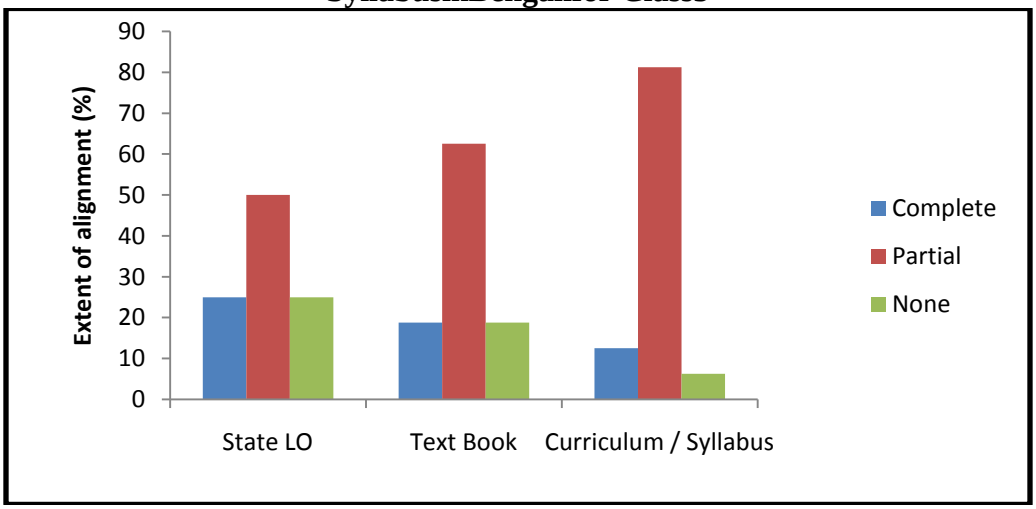


Figure No. 5.2(c): Alignment of NCERT LOs with State LOs, Textbooks, Curriculum/ Syllabus in Mathematics for Class 5

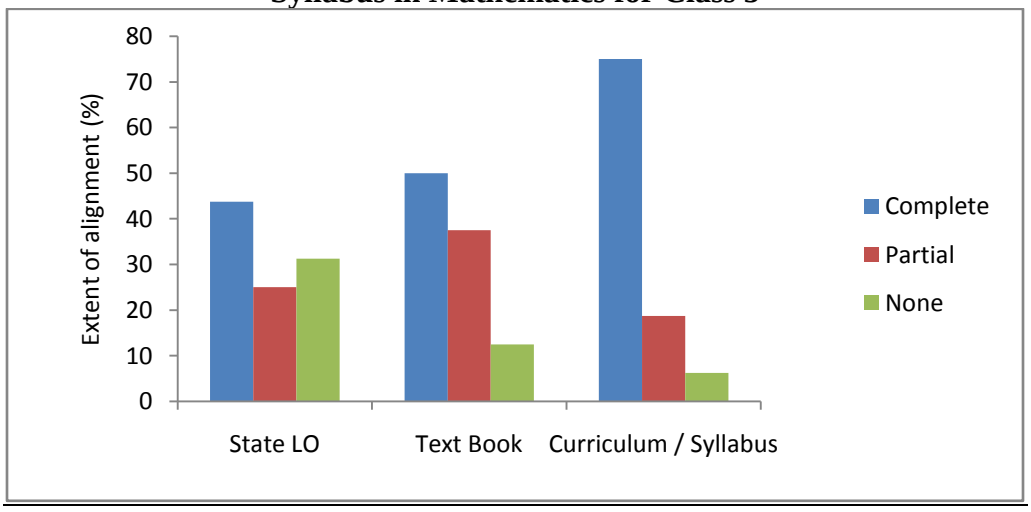
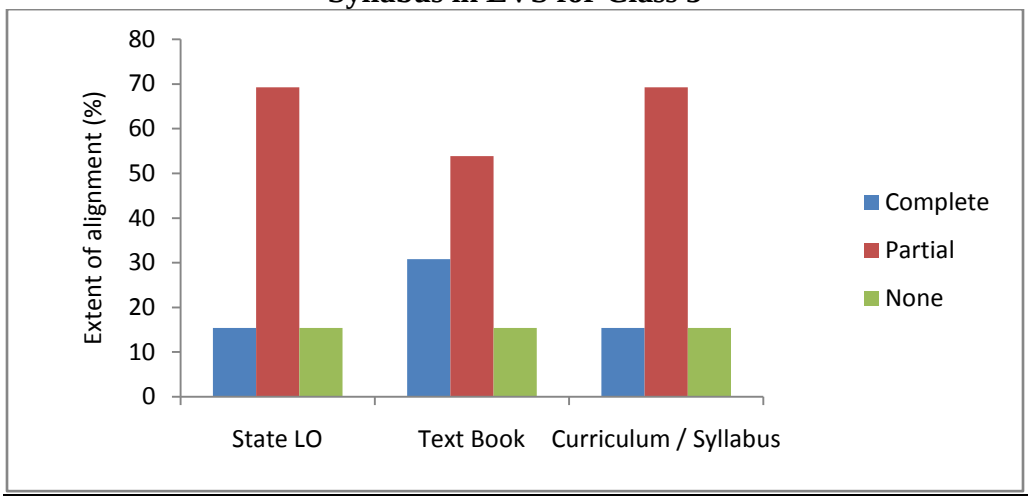


Figure No. 5.2(d):Alignment of NCERT LOs with State LOs, Textbooks, Curriculum/ Syllabus in EVS for Class 5



5.1.3 CLASS 8, BOARD: WBBSE

The TableNo.5.3[Figure No. 5.3(a) to 5.3(f)]shows the extent of alignment (in percentage) of the Learning Outcomes published by NCERT with the textbooks and curriculum / syllabus followed by the state of West Bengal in class 8.The subjects that were tested in NAS 2017 were taken into consideration –Language (English and Bengali), Mathematics, Science and Social Science.

In case of textbooks, the percentage of complete alignment is highest for Bengali (60.00%) and the percentage of partial alignment is highest for Science (73.33%). The percentage of no alignment is the highest for History (52.17%) and the least for Science (nil). It may be noted that under WBBSE, Social Science includes History and Geography.

In case of curriculum / syllabus, the percentage of complete alignment is highest for Science (40%) and the percentage of partial alignment is also highest for Bengali (75%). The percentage of no alignment is the highest for English (59.26%) and the least for Science (nil).

If we see the parity among NCERT Learning Outcomes and their reflection in state textbooks and curriculum / syllabus for a particular subject, the highest parity is shown in Science.

Table No.5.3:Alignment of NCERT LOs with State LOs, Textbooks and Curriculum / Syllabusfor Class 8

Subject	No. of NCERT LO	Extent of Alignment (in %)								
		State LO			Text Book			Curriculum / Syllabus		
		Complete	Partial	None	Complete	Partial	None	Complete	Partial	None
English	27	25.93	48.15	25.93	3.70	51.85	44.44	3.70	37.04	59.26
Bengali	20	15	45	40	60	15	25	0	75	25
Mathematics	21	14.29	33.33	52.38	4.76	61.90	33.33	33.33	14.29	52.38
Science	15	26.67	73.33	0.00	26.67	73.33	0.00	40.00	60.00	0.00
History	23	8.70	43.48	47.83	4.35	43.48	52.17	8.70	43.48	47.83
Geography	14	14.29	64.29	21.43	14.29	64.29	21.43	14.29	57.14	28.57

Figure No. 5.3(a): Alignment of NCERT LOs with State LOs, Textbooks, Curriculum/ Syllabus in English for Class 8

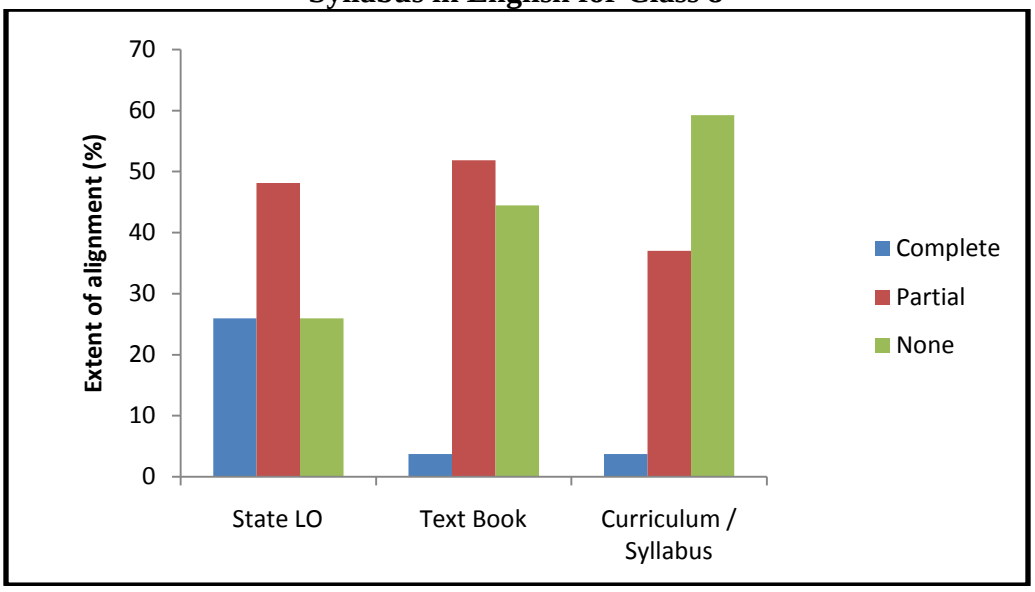


Figure No. 5.3(b): Alignment of NCERT LOs with State LOs, Textbooks, Curriculum/ Syllabus in Bengali for Class 8

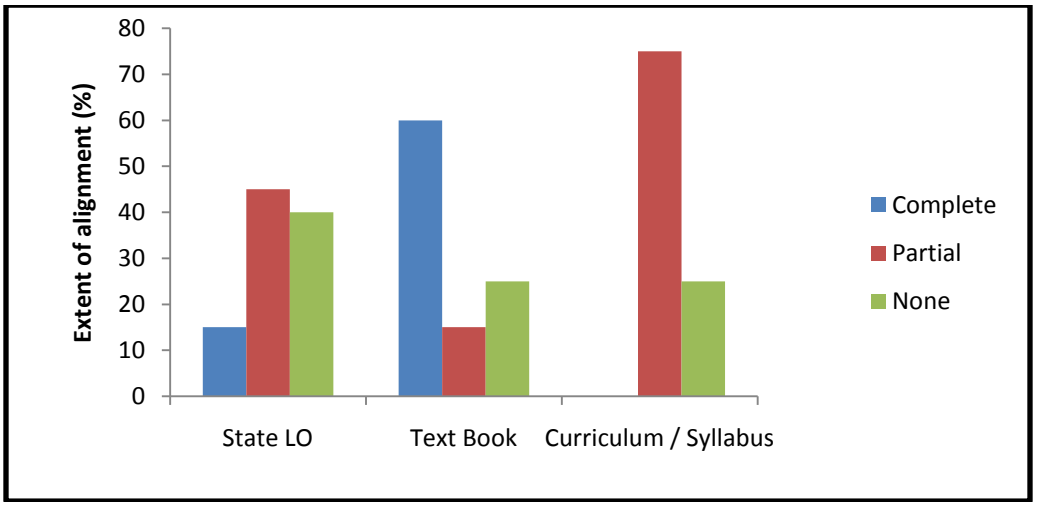


Figure No. 5.3(c):Alignment of NCERT LOs with State LOs, Textbooks, Curriculum/ Syllabus inMathematics for Class 8

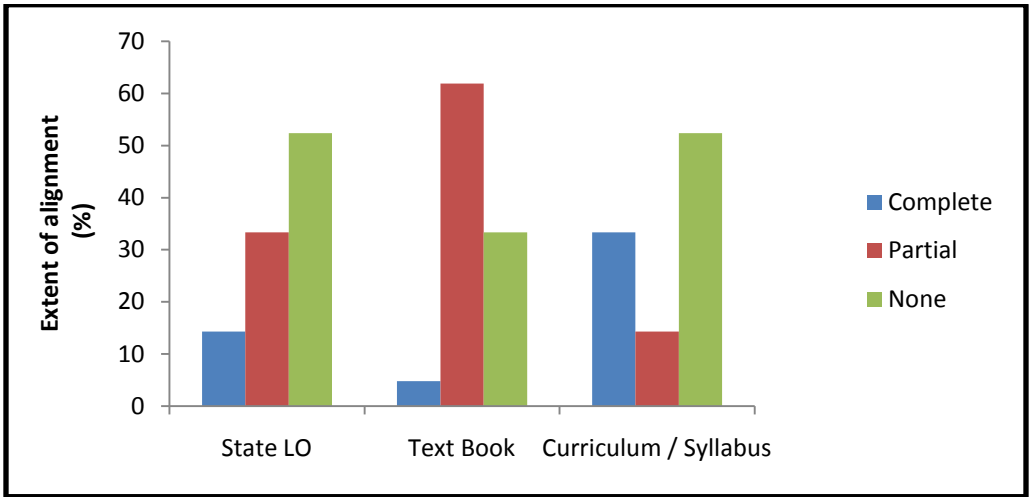


Figure No. 5.3(d):Alignment of NCERT LOs with State LOs, Textbooks, Curriculum/ Syllabus in Science for Class 8

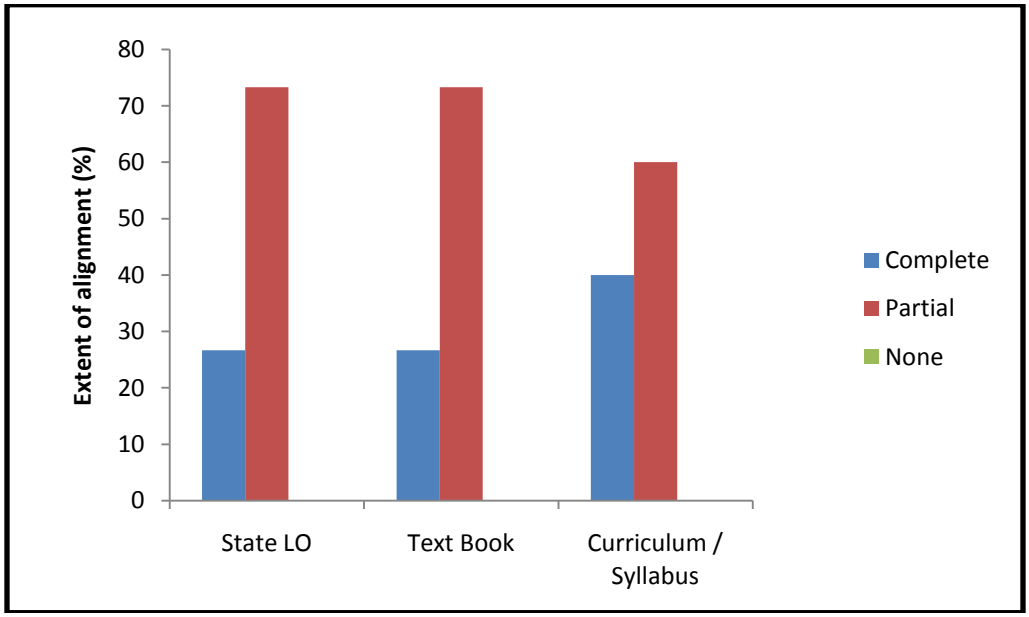


Figure No. 5.3(e):Alignment of NCERT LOs with State LOs, Textbooks, Curriculum/ Syllabus in History for Class 8

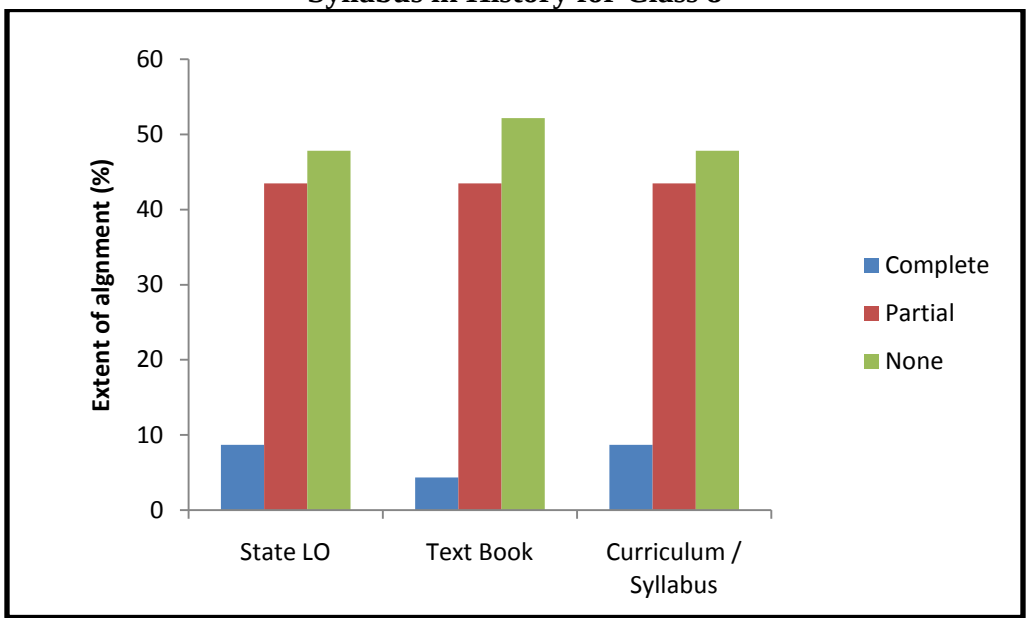
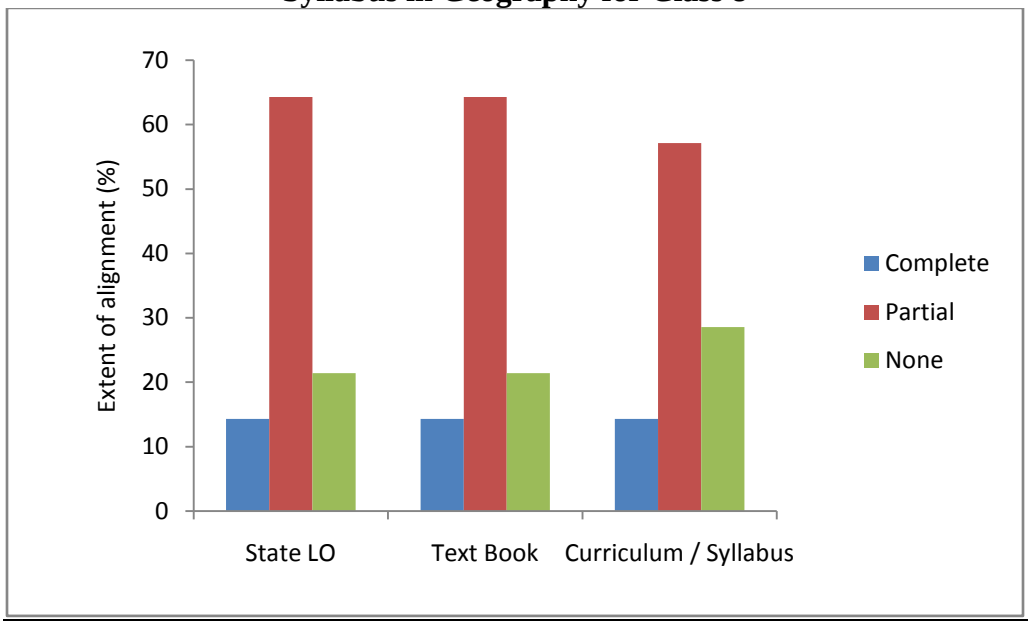


Figure No. 5.3(f): Alignment of NCERT LOs with State LOs, Textbooks, Curriculum/ Syllabus in Geography for Class 8



5.2 EXTENT OF ALIGNMENT OF LEARNING OUTCOMES, TEXTBOOKS AND CURRICULUM / SYLLABUS OF CISCE WITH LEARNING OUTCOMES PUBLISHED BY NCERT

The Learning Outcomes published by NCERT were compared with the Learning Outcomes, Textbooks of the Council for the Indian School Certificate Examination (CISCE) for classes 3, 5 and 8. The curricula / syllabi of the Boardfor the specified classeswere also studied in the light of NCERT Learning Outcomes.

It may be noted that the Learning Outcome document was published by NCERT in April, 2017 and the CISCE document on curriculum containing Learning Outcomes was published in November, 2016. Since no designatedtextbooks published by CISCE were available, the books that were available in the market and are presently being taught in the schoolsaffiliated to CISCE,wereused for the study.

The pages of all textbooks of the concerned subjects for the classes 3, 5 and 8 were scanned to see to what extent the NCERT Learning Outcomes are reflected in the CISCEbooks.

5.2.1 CLASS 3, BOARD: CISCE

The Table No. 5.4[Figure No. 5.4(a) to 5.4(c)]shows the extent of alignment (in percentage) of the Learning Outcomes published by NCERT with the Learning Outcomes, textbooks and curriculum / syllabus followed by the CISCE in class 3. Three subjects that were tested in NAS 2017 were taken into consideration –Language (English), Mathematics and EVS.

Taking Learning Outcomes into consideration, the percentage of complete alignment is highest for Mathematics (68.42%) and the percentage of partial alignment is highest for English (64.29%). The percentage of no alignment is the highest for EVS (66.67%) and the least for English (nil).

In case of textbooks, the percentage of complete alignment is highest for Mathematics (89.47%) and the percentage of partial alignment is highest for EVS (20.00%). The percentage of no alignment is the highest for EVS (73.33%) and the least for Mathematics (nil).

In case of curriculum / syllabus, the percentage of complete alignment is highest for Mathematics (57.89%) and the percentage of partial alignment is highest for English (50.00%). The percentage of no alignment is the highest for EVS (53.33%) and the least for Mathematics (15.79%).

If we see the parity among NCERT Learning Outcomes and their reflection in CISCE LOs,textbooks and curriculum / syllabus for a particular subject, the highest parity is shown in Mathematics, followed by English.

Table No.5.4:Alignment of NCERT LOs with CISCELOs, Textbooks and Curriculum / Syllabus for Class 3

Subject	No. of NCERT LO	Extent of Alignment (in %)								
		CISCE LO			Text Book			Curriculum / Syllabus		
		Complete	Partial	None	Complete	Partial	None	Complete	Partial	None
English	14	35.71	64.29	0.00	71.43	14.29	14.29	28.57	50.00	21.43
Mathematics	19	68.42	26.32	5.26	89.47	10.53	0.00	57.89	26.32	15.79
EVS	15	6.67	26.67	66.67	6.67	20.00	73.33	6.67	40.00	53.33

Figure5.4(a): Alignment of NCERT LOs with CISCELOs, Textbooks and Curriculum / Syllabus in English for Class 3

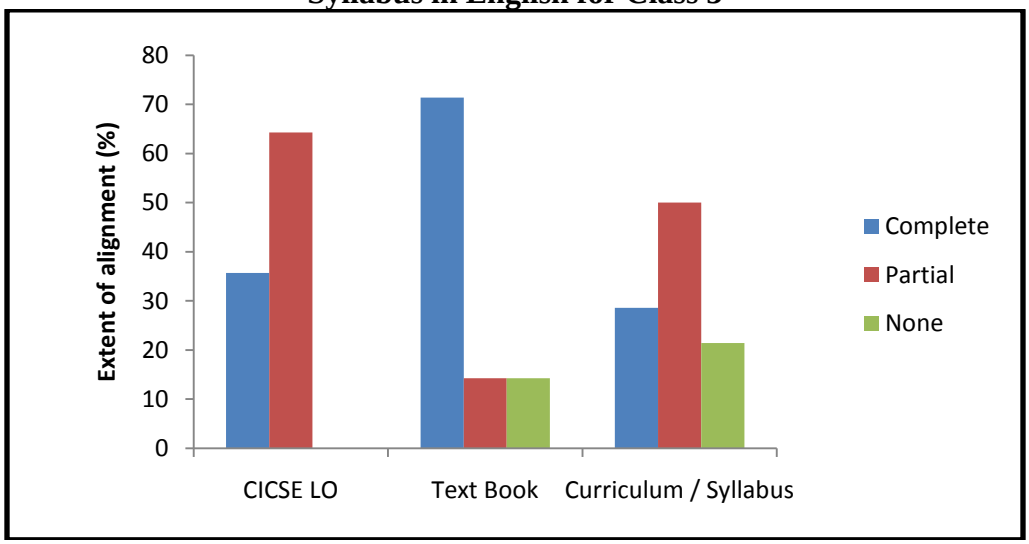


Figure5.4(b):Alignment of NCERT LOs with CISCELOs, Textbooks and Curriculum / Syllabus in Mathematics for Class 3

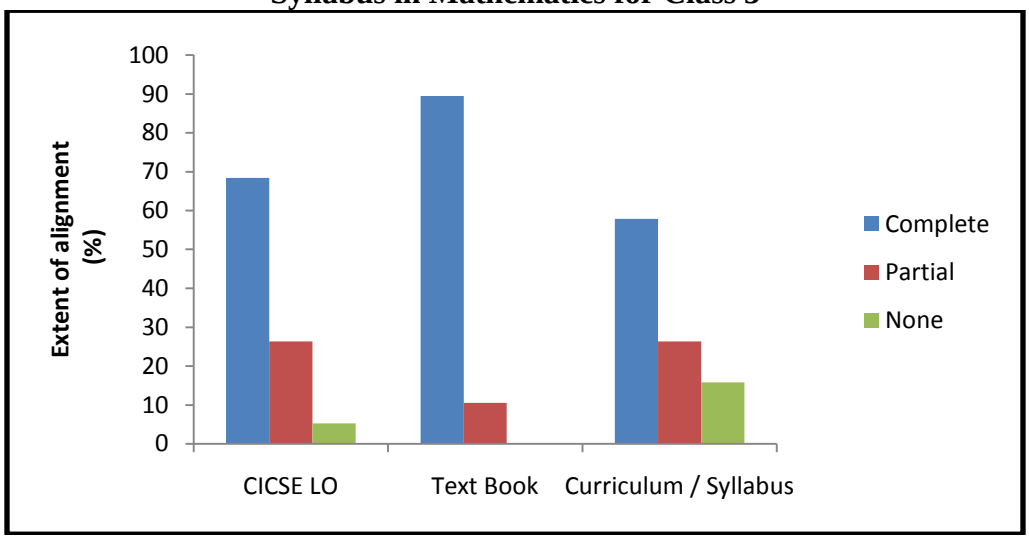
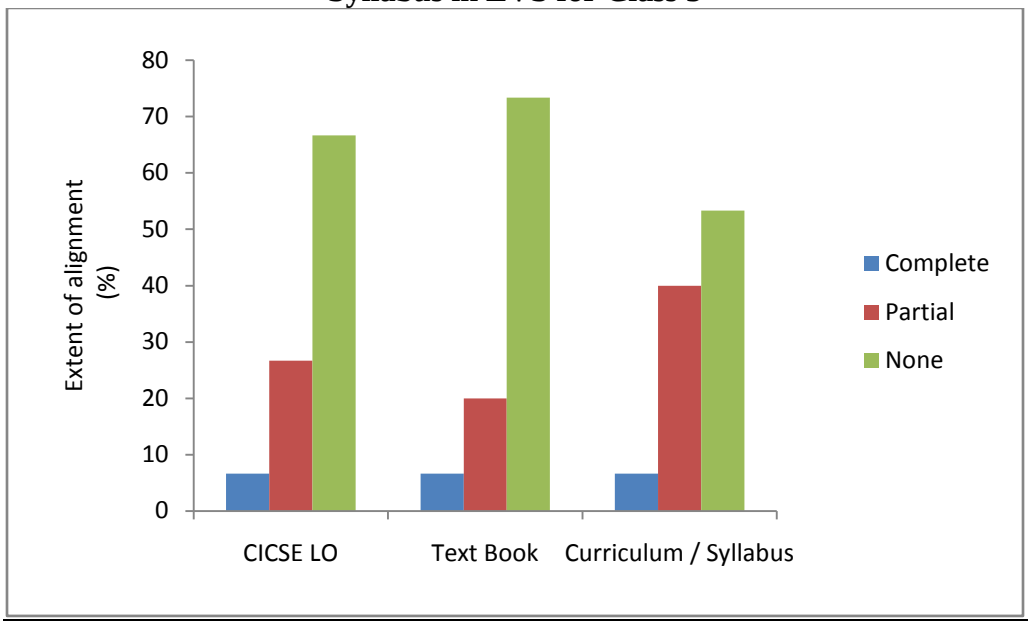


Figure5.4(c):Alignment of NCERT LOs with CISCELOs, Textbooks and Curriculum / Syllabus in EVS for Class 3



5.2.2 CLASS 5, BOARD: CISCE

The Table No. 5.5[Figure No. 5.5(a) to 5.5(c)]shows the extent of alignment (in percentage) of the Learning Outcomes published by NCERT with the Learning Outcomes, textbooks and curriculum / syllabus followed by the CISCE in class 5. Three subjects that were tested in NAS 2017 were taken into consideration –Language (English), Mathematics and EVS.

Taking Learning Outcomes into consideration, the percentage of complete alignment is highest for Mathematics (87.50%) and the percentage of partial alignment is highest for English (100%). The percentage of no alignment is the highest for EVS (76.92%) and the least for English and Mathematics (nil).

In case of textbooks, the percentage of complete alignment is highest for Mathematics (81.25%) and the percentage of partial alignment is highest for EVS (23.08%). The percentage of no alignment is the highest for EVS (76.92%) and the least for Mathematics (nil).

In case of curriculum / syllabus, the percentage of complete alignment is highest for Mathematics (81.25%) and the percentage of partial alignment is highest for English (68.42%). The percentage of no alignment is the highest for EVS (84.62%) and the least for Mathematics (12.50%).

If we see the parity among NCERT Learning Outcomes and their reflection in CISCE LOs, textbooks and curriculum / syllabus for a particular subject, the highest parity is shown in Mathematics, followed by English. The nonalignment is maximum for EVS.

Table No.5.5:Alignment of NCERT LOs with CISCELOs, Textbooks and Curriculum / Syllabus for Class 5

Subject	No. of NCERT LO	Extent of Alignment (in %)								
		CISCE LO			Text Book			Curriculum / Syllabus		
		Complete	Partial	None	Complete	Partial	None	Complete	Partial	None
English	19	0	100	0	52.63	10.53	36.84	5.26	68.42	26.32
Mathematics	16	87.5	12.5	0	81.25	18.75	0	81.25	6.25	12.5
EVS	13	0	23.08	76.92	0.00	23.08	76.92	0.00	15.38	84.62

Figure No.5.5(a):Alignment of NCERT LOs with CISCELOs, Textbooks and Curriculum / Syllabus in English for Class 5

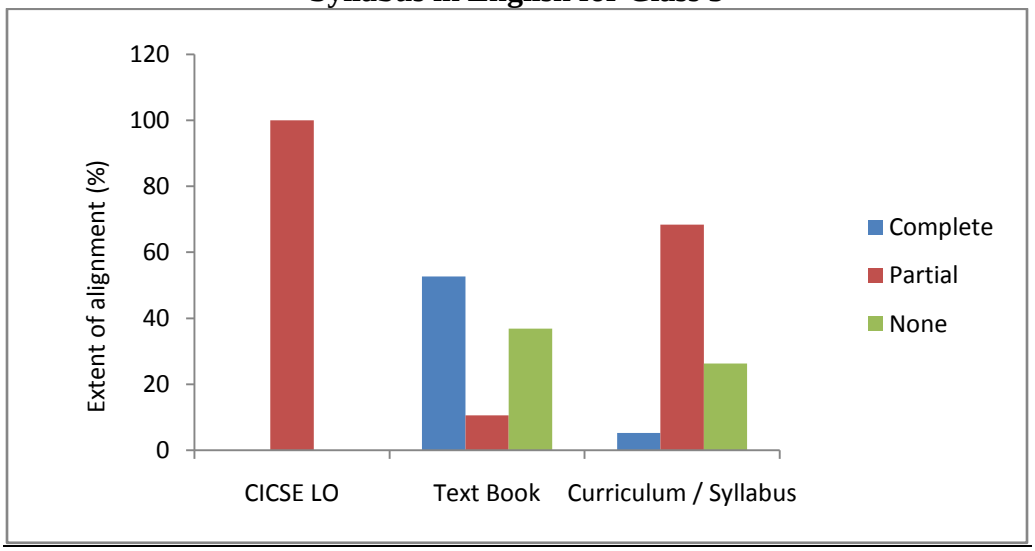


Figure No.5.5(b):Alignment of NCERT LOs with CISCELOs, Textbooks and Curriculum / Syllabus in Mathematics for Class 5

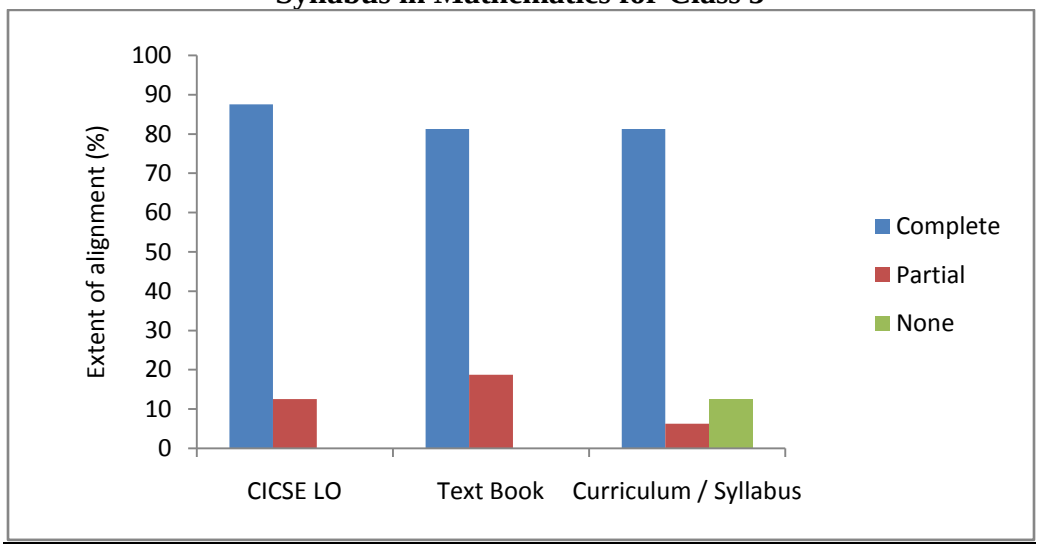
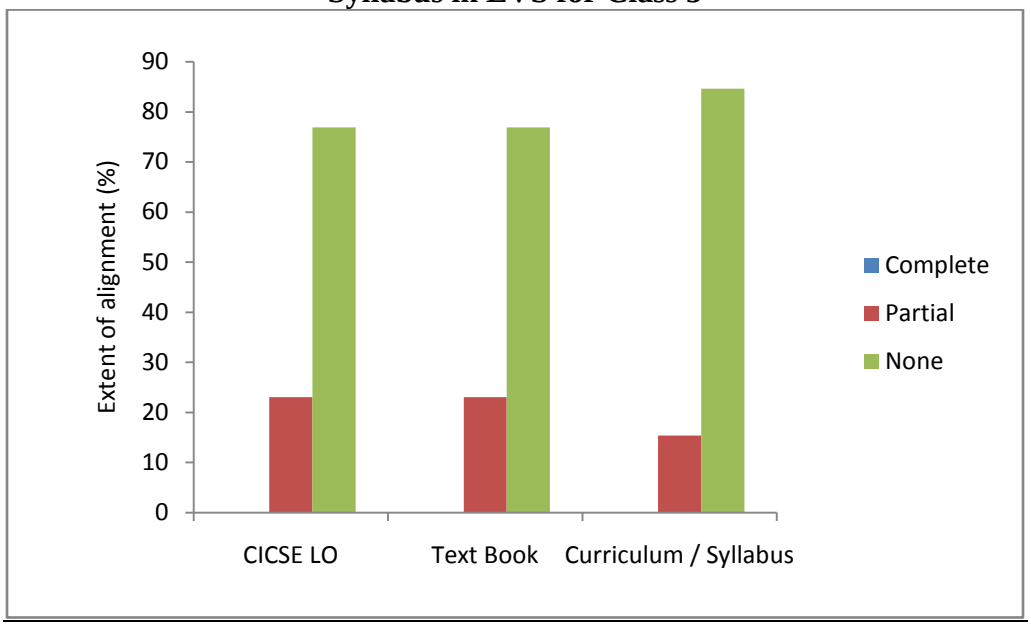


Figure No.5.5(c):Alignment of NCERT LOs with CISCELOs, Textbooks and Curriculum / Syllabus in EVS for Class 5



5.2.3 CLASS 8, BOARD: CISCE

The Table No. 5.6[Figure No. 5.6(a) to 5.6(e)]shows the extent of alignment (in percentage) of the Learning Outcomes published by NCERT with the Learning Outcomes, textbooks and curriculum / syllabus followed by the CISCE in class 8. The subjects that were tested in NAS 2017 were taken into consideration – Language (English and Bengali), Mathematics, Science and Social Science.

Taking Learning Outcomes into consideration, the percentage of complete alignment is highest for Mathematics (80.95%) and the percentage of partial alignment is highest for Science (53.33%). The percentage of no alignment is the highest for Social Science (81.25%) and the least for Mathematics (4.76%). The Learning Outcomes and curriculum / syllabus for Bengali were not published by CISCE and therefore could not be compared.

In case of textbooks, the percentage of complete alignment is highest for Mathematics (85.71%) and the percentage of partial alignment is highest for Bengali (72.22%). The percentage of no alignment is the highest for Social Science (78.13%) and the least for Bengali (nil).

In case of curriculum / syllabus, the percentage of complete alignment is highest for Mathematics (85.71%) and the percentage of partial alignment is highest for Science (53.33%). The percentage of no alignment is the highest for Social Science (81.25%) and the least for

Mathematics (nil). The curriculum / syllabus for Bengali was not published by CISCE and therefore could not be compared.

If we see the parity among NCERT Learning Outcomes and their reflection inCISCE LOs, textbooks and curriculum / syllabus for a particular subject, the highest parity is shown in Mathematics, followed by English. The highest nonalignment is seen in case of Social Science.

Table No.5.6:Alignment of NCERT LOs with CISCELOs, Textbooks and Curriculum / Syllabus for Class 8

Subject	No. of NCERT LO	Extent of Alignment (in %)								
		CISCE LO			Text Book			Curriculum / Syllabus		
		Complete	Partial	None	Complete	Partial	None	Complete	Partial	None
English	27	33.33	29.63	37.04	14.81	51.85	33.33	40.74	48.15	11.11
Bengali	18	-----	-----	-----	27.78	72.22	0.00	-----	-----	-----
Mathematics	21	80.95	14.29	4.76	85.71	9.52	4.76	85.71	14.29	0
Science	15	0	53.33	46.67	0	53.33	46.67	0	53.33	46.67
Social Science	23	12.5	6.25	81.25	12.5	9.38	78.13	9.38	9.38	81.25

Figure No. 5.6(a):Alignment of NCERT LOs with CISCELOs, Textbooks and Curriculum / Syllabus in English for Class 8

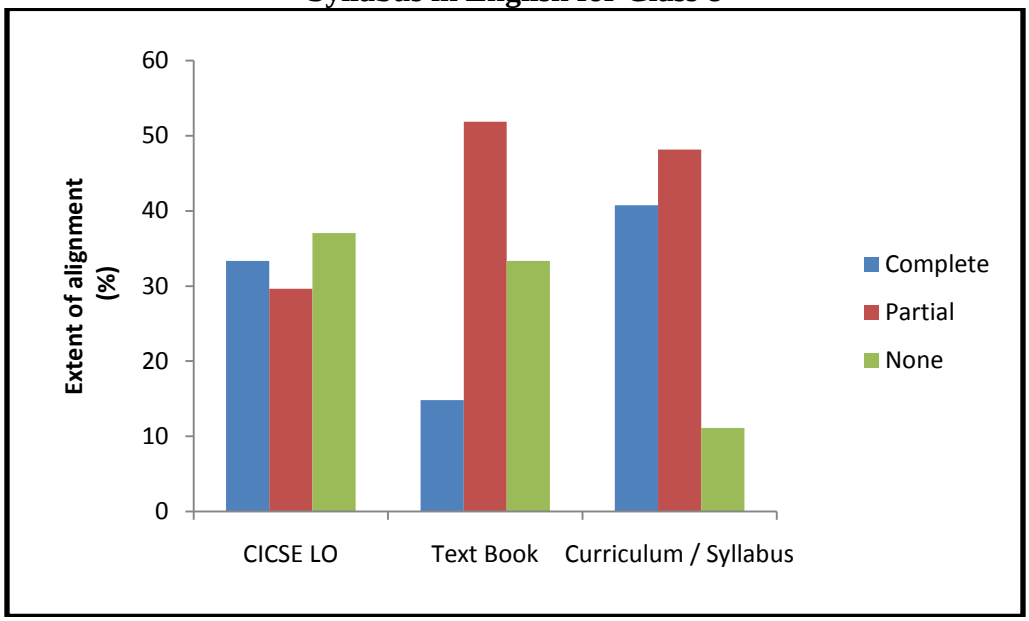


Figure No.5.6(b):Alignment of NCERT LOs with CISCELOs, Textbooks and Curriculum / Syllabus in Bengali for Class 8

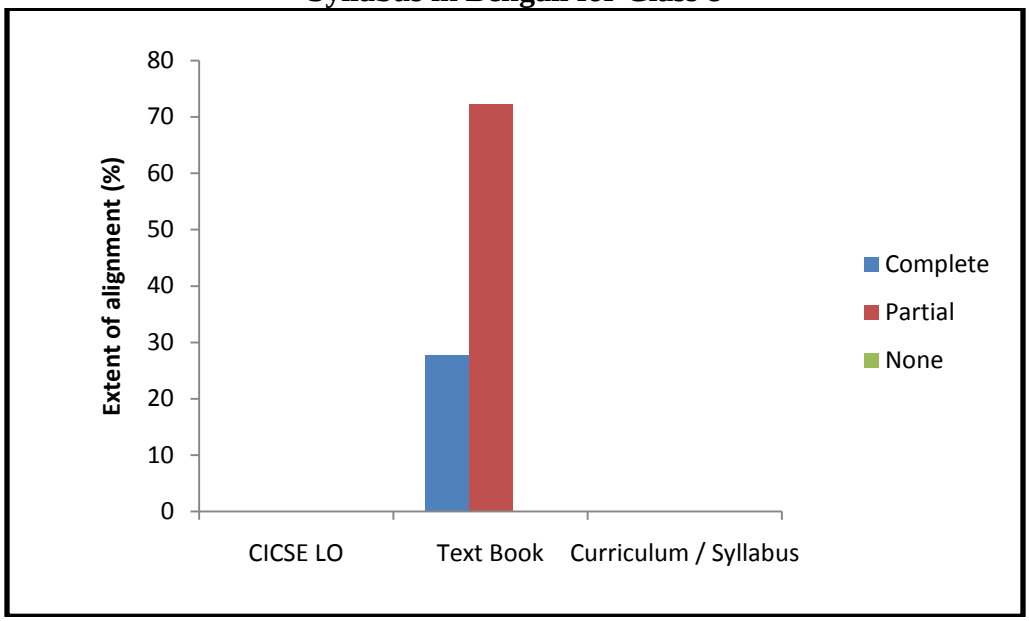


Figure No.5.6(c):Alignment of NCERT LOs with CISCELOs, Textbooks and Curriculum / Syllabus in Mathematics for Class 8

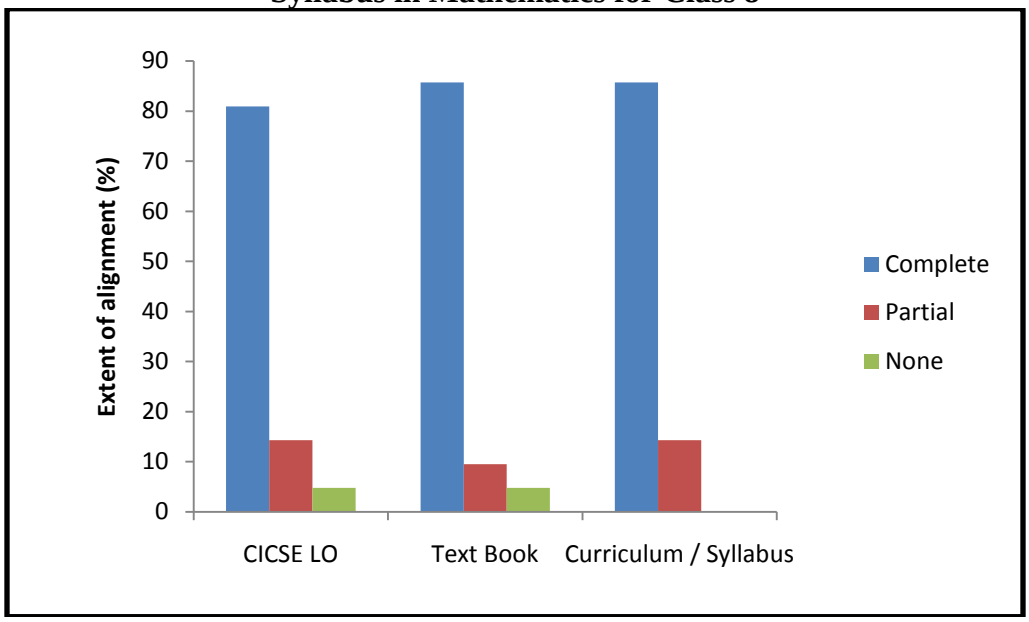


Figure No.5.6(d):Alignment of NCERT LOs with CISCELOs, Textbooks and Curriculum / Syllabus in Science forClass 8

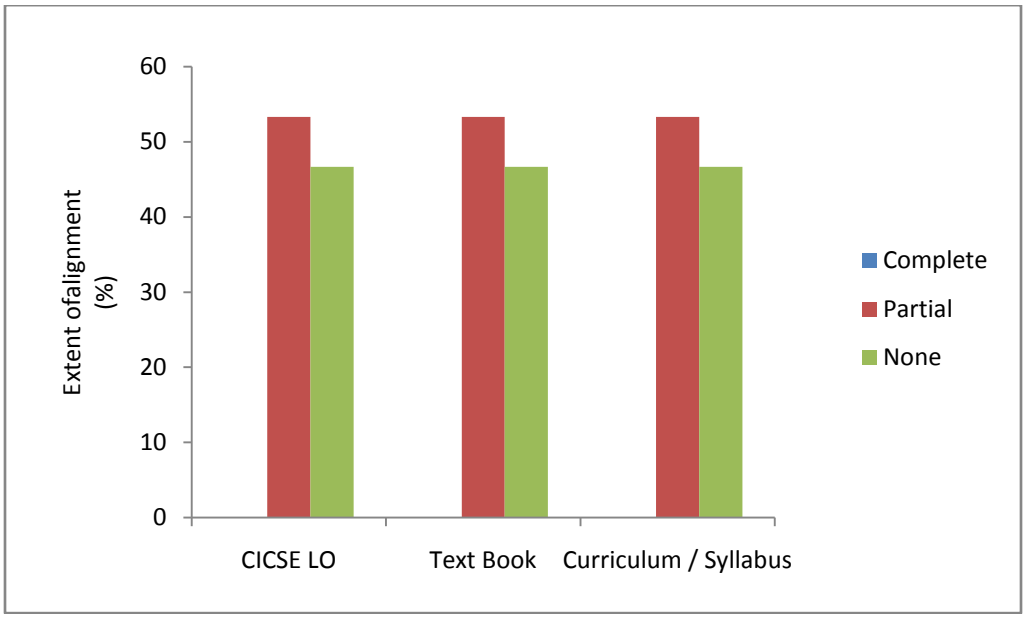
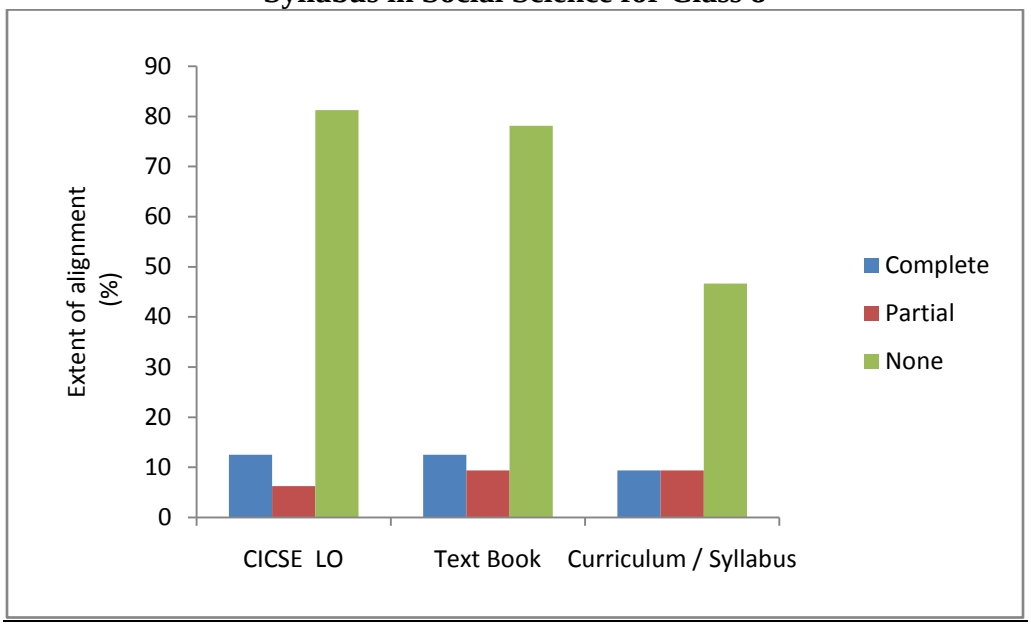


Figure No.5.6(e):Alignment of NCERT LOs with CISCELOs, Textbooks and Curriculum / Syllabus in Social Science for Class 8



5.3 EXTENT OF ALIGNMENT OF LEARNING OUTCOMES, TEXTBOOKS AND CURRICULUM / SYLLABUS OF CBSE WITH LEARNING OUTCOMES PUBLISHED BY NCERT

The Learning Outcomes published by NCERT were compared with the Textbooks of the Central Board of Secondary Education (CBSE) for classes 3, 5 and 8. The Learning Outcomes and curricula / syllabi of the Boardfor specified classes were assumed to be the same as that of NCERT Learning Outcomes.

The pages of all textbooks of the concerned subjects for classes 3,5 and 8 were scanned to see to what extent the NCERT Learning Outcomes are reflected in the CBSE textbooks.

5.3.1 CLASS 3, BOARD: CBSE

The Table No. 5.7[Figure No. 5.7(a) to 5.7(c)]shows the extent of alignment (in percentage) of the Learning Outcomes published by NCERT with the textbooks followed by the CBSE in class 3. Three subjects that were tested in NAS 2017 were taken into consideration – Language (English), Mathematics and EVS.

In case of textbooks, the percentage of complete alignment is highest for Mathematics (100%) and the percentage of partial alignment is highest for EVS (73.33%). The percentage of no alignment is the same for all subjects (nil).

Table No.5.7:Alignment of NCERT LOs with Textbooks of CBSEfor Class 3

Subject	No. of NCERT LO	Extent of Alignment (in %)		
		Text Book		
		Complete	Partial	None
English	14	57.14	42.86	0.00
Mathematics	19	100	0	0
EVS	15	26.67	73.33	0.00

Figure No.5.7(a): Alignment of NCERT LOs with CBSE Textbooks in English for Class 3

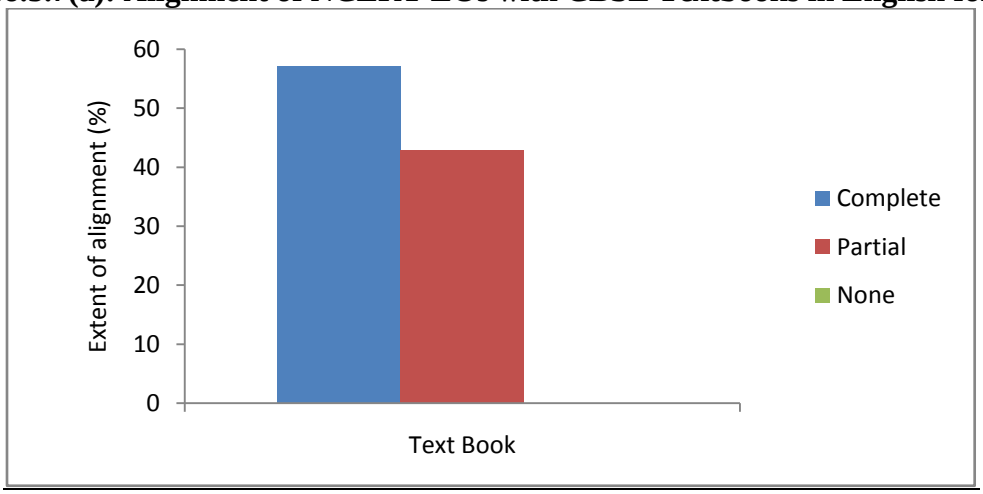


Figure No.5.7(b): Alignment of NCERT LOs with CBSE Textbooks in Mathematics for Class 3

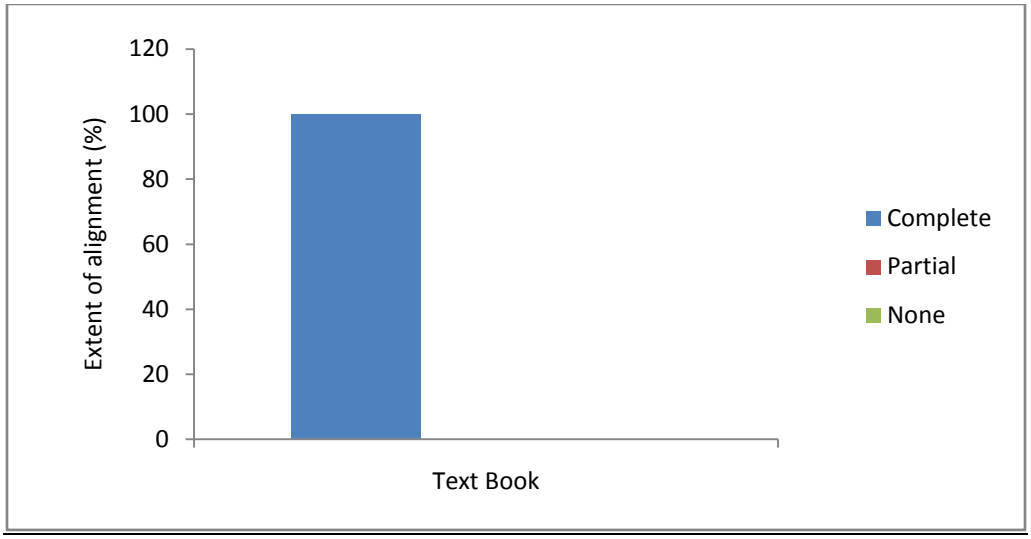
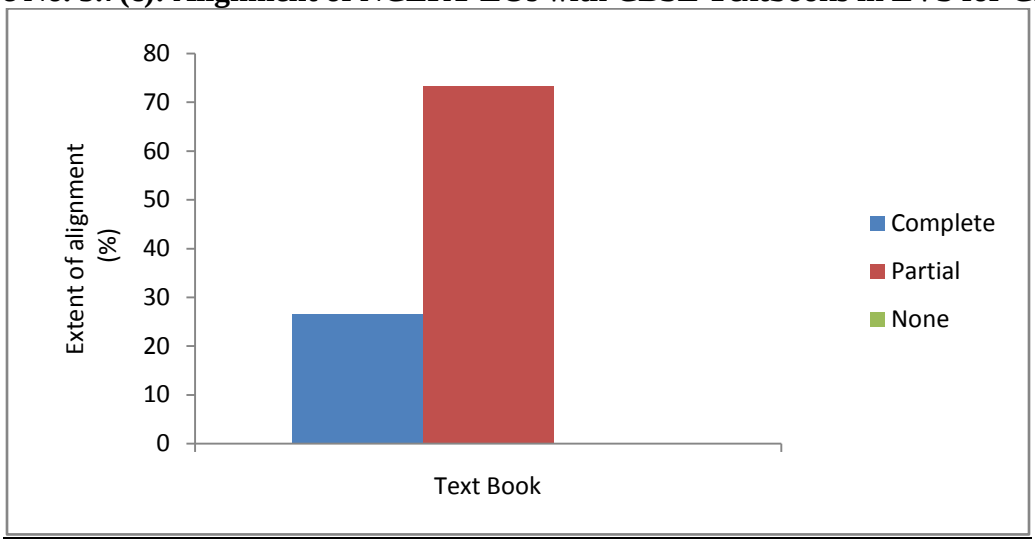


Figure No. 5.7(c): Alignment of NCERT LOs with CBSE Textbooks in EVS for Class 3



5.3.2 CLASS 5, BOARD: CBSE

The Table No. 5.8[Figure No. 5.8(a) to 5.8(c)]shows the extent of alignment (in percentage) of the Learning Outcomes published by NCERT with the textbooks followed by the CBSE in class 5. Three subjects that were tested in NAS 2017 were taken into consideration - Language (English), Mathematics and EVS.

In case of textbooks, the percentage of complete alignment is highest for Mathematics (87.50%) and the percentage of partial alignment is highest for EVS (92.31%). The percentage of no alignment is the highest for English (10.53%).

TableNo.5.8:Alignment of NCERT LOs with Textbooks of CBSEfor Class 5

Subject	No. of NCERT LO	Extent of Alignment (in %)		
		Text Book		
		Complete	Partial	None
English	19	68.42	21.05	10.53
Mathematics	16	87.5	12.5	0
EVS	13	7.69	92.31	0

Figure No.5.8(a): Alignment of NCERT LOs with CBSE Textbooks in English for Class 5

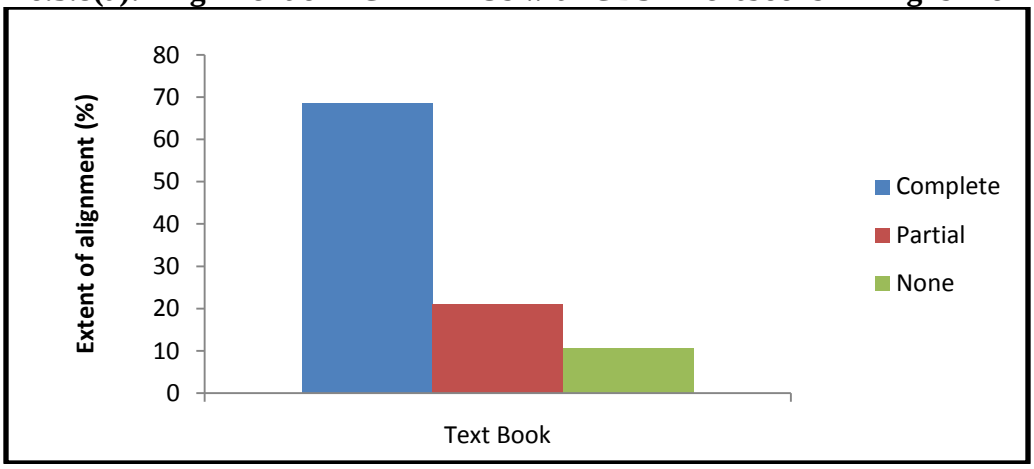


Figure No.5.8(b): Alignment of NCERT LOs with CBSE Textbooks in Mathematics for Class 5

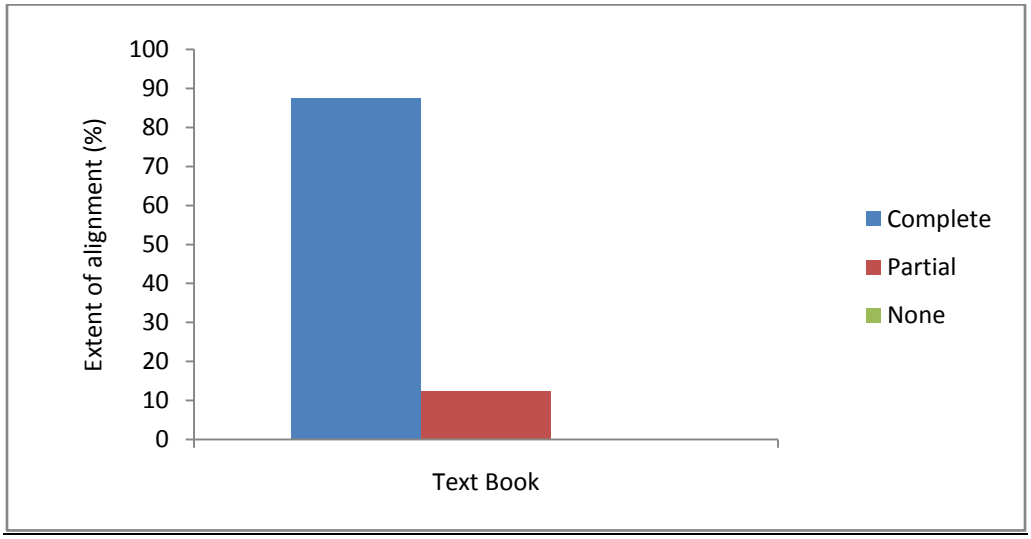
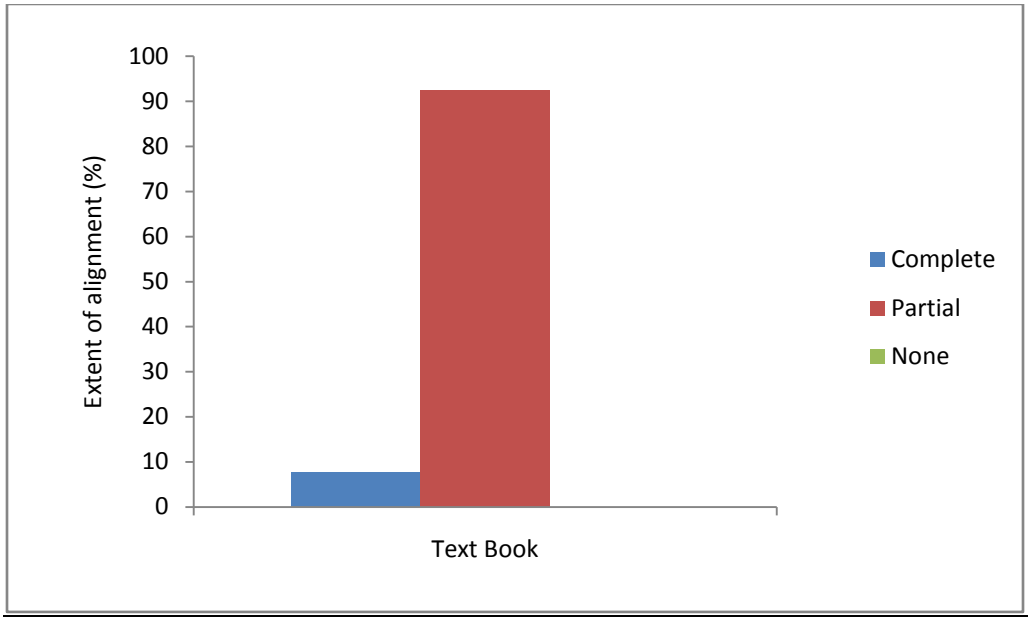


Figure No. 5.8(c): Alignment of NCERT LOs with CBSE Textbooks in EVS for Class 5



5.3.3 CLASS 8, BOARD: CBSE

The Table No. 5.9[Figure No. 5.9(a) to 5.9(d)] shows the extent of alignment (in percentage) of the Learning Outcomes published by NCERT with the textbooks followed by the CBSE in class 8. The subjects that were tested in NAS 2017 were taken into consideration –Language (English and Bengali), Mathematics and Science.

In case of textbooks, the percentage of complete alignment is highest for Mathematics (85.71%) and the percentage of partial alignment is highest for Science (86.67%). The percentage of no alignment is the highest for English (29.63%) and the least for Mathematics (nil).

Table No.5.9: Alignment of NCERT LOs with Textbooks of CBSE for Class 8

Subject	No. of NCERT LO	Extent of Alignment (in %)		
		Text Book		
		Complete	Partial	None
English	27	11.11	59.26	29.63
Bengali	19	52.63	42.11	5.26
Mathematics	21	85.71	14.29	0.00
Science	15	6.67	86.67	6.67

Figure No.5.9 (a): Alignment of NCERT LOs with CBSE Textbooks in English for Class 8

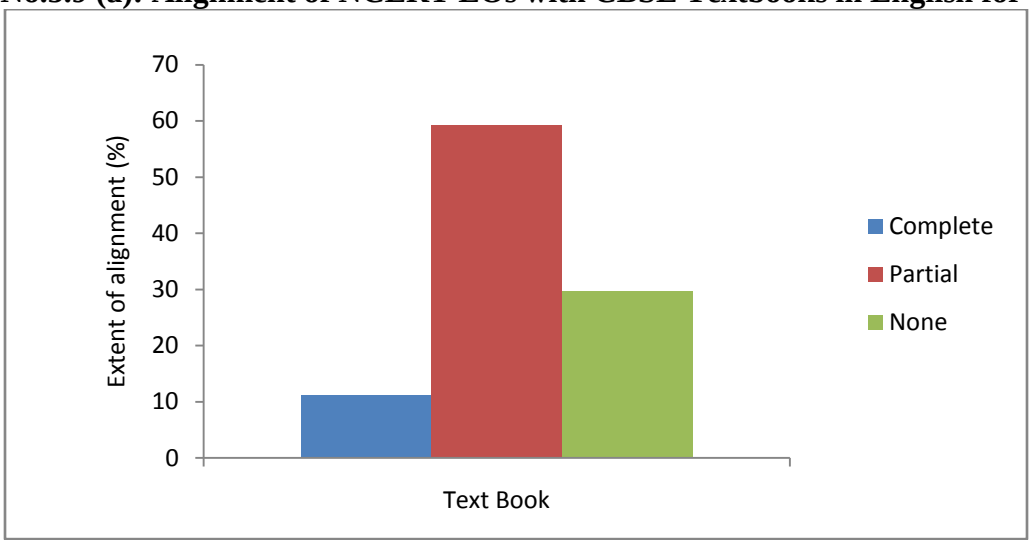


Figure No.5.9 (b): Alignment of NCERT LOs with CBSE Textbooks in Bengali for Class 8

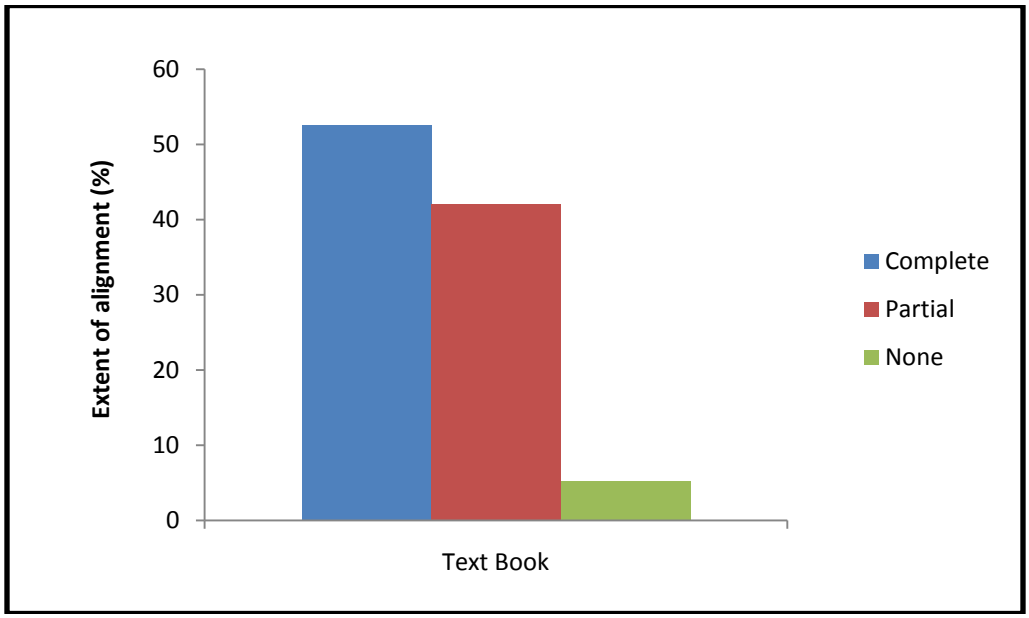


Figure No.5.9(c): Alignment of NCERT LOs with CBSE Textbooks in Mathematics for Class 8

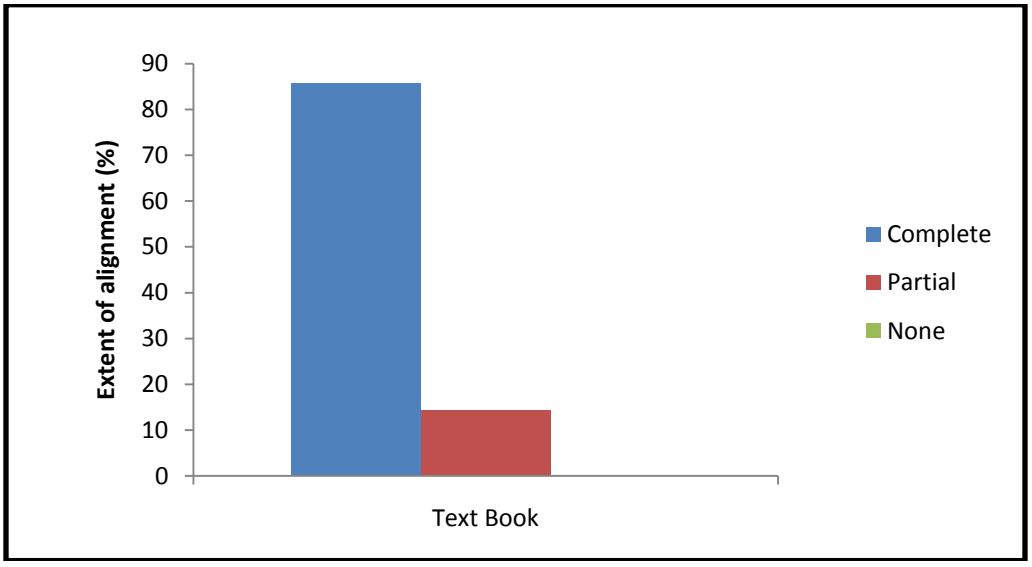
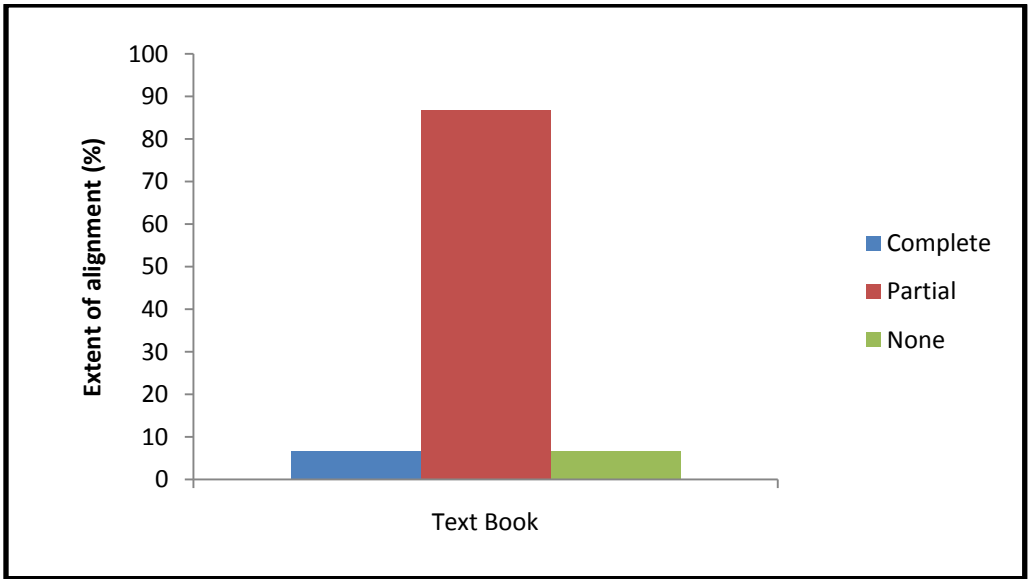


Figure No.5.9 (d): Alignment of NCERT LOs with CBSE Textbooks in Science for Class 8



5.4 CHAPTER SUMMARY

- It is seen from thestate textbooksof class 3**,** the percentage of complete alignment is highest for Mathematics (63.16%) and the percentage of partial alignment is highest for EVS (73.33%). The percentage of no alignment is the highest for Bengali (53.85%) and the least for EVS (nil).

- In case of state textbooks of class 5, the percentage of complete alignment is highest for Mathematics (50%) and the percentage of partial alignment is highest for Bengali (62.50%). The percentage of no alignment is the highest for English (21.05%) and the least for Mathematics (12.50%).
- For class 8 state textbooks, the percentage of complete alignment is highest for Bengali (60%) and the percentage of partial alignment is highest for Science (73.33%). The percentage of no alignment is the highest for History (52.17%) and the least for Science (nil). It may be noted that under WBBSE, Social Science includes History and Geography.

- While comparing curriculum / syllabusof the state for class 3, it is seen that the percentage of complete alignment is highest for Bengali (61.54%) and the percentage of partial alignment is highest for English (71.43%). The percentage of no alignment is the highest for EVS (33.33%) and the least for English (7.14%).
- Again in case of the state curriculum / syllabusforclass 5, the percentage of complete alignment is highest for Mathematics (75%) and the percentage of partial alignment is highest for Bengali (81.25%). The percentage of no alignment is the highest for English (36.84%) and the least for Bengali and Mathematics (6.25%).
- For the curriculum / syllabusof class 8, the percentage of complete alignment is highest for Science (40%) and the percentage of partial alignment is also highest for Bengali (75%). The percentage of no alignment is the highest for English (59.26%) and the least for Science (nil).

- In case of Learning Outcomes of CISCEfor class 3, the percentage of complete alignment is highest for Mathematics (68.42%) and the percentage of partial alignment is highest for English (64.29%). The percentage of no alignment is the highest for EVS (66.67%) and the least for English (nil).
- Again in case of CISCE LO forclass 5, the percentage of complete alignment is highest for Mathematics (87.50%) and the percentage of partial alignment is highest for English (100%). The percentage of no alignment is the highest for EVS (76.92%) and the least for English and Mathematics (nil).
- For class 8 CISCE LO, the percentage of complete alignmentis highest for Mathematics (80.95%) and the percentage of partial alignment is highest for Science (53.33%). The

percentage of no alignment is the highest for Social Science (81.25%) and the least for Mathematics (4.76%).

- It is seen that for CISCE textbooksof class 3, the percentage of complete alignment is highest for Mathematics (89.47%) and the percentage of partial alignment is highest for EVS (20%). The percentage of no alignment is the highest for EVS (73.33%) and the least for Mathematics (nil).
- In case of CISCE textbooks of class 5, the percentage of complete alignment is highest for Mathematics (81.25%) and the percentage of partial alignment is highest for EVS (23.08%). The percentage of no alignment is the highest for EVS (76.92%) and the least for Mathematics (nil).
- Forclass 8 CISCE textbooks, the percentage of complete alignment is highest for Mathematics (85.71%) and the percentage of partial alignment is highest for Bengali (72.22%). The percentage of no alignment is the highest for Social Science (78.13%) and the least for Bengali (nil).

- For CISCE curriculum / syllabus of class 3, the percentage of complete alignment is highest for Mathematics (57.89%) and the percentage of partial alignment is highest for English (50.00%). The percentage of no alignment is the highest for EVS (53.33%) and the least for Mathematics (15.79%).
- In case of CISCE curriculum / syllabus of class 5, the percentage of complete alignment is highest for Mathematics (81.25%) and the percentage of partial alignment is highest for English (68.42%). The percentage of no alignment is the highest for EVS (84.62%) and the least for Mathematics (12.50%).
- Again in case of CISCE curriculum / syllabus of class 8, the percentage of complete alignment is highest for Mathematics (85.71%) and the percentage of partial alignment is highest for Science (53.33%). The percentage of no alignment is the highest for Social Science (81.25%) and the least for Mathematics (nil).

- In case of CBSE textbooks of class 3, the percentage of complete alignment is highest for Mathematics (100%) and the percentage of partial alignment is highest for EVS (73.33%). The percentage of no alignment is the same for all subjects (nil).

- For CBSE textbooks of class 5, the percentage of complete alignment is highest for Mathematics (87.50%) and the percentage of partial alignment is highest for EVS (92.31%). The percentage of no alignment is the highest for English (10.53%).
- In case of class 8 CBSE textbooks, the percentage of complete alignment is highest for Mathematics (85.71%) and the percentage of partial alignment is highest for Science (86.67%). The percentage of no alignment is the highest for English (29.63%) and the least for Mathematics (nil).

  (REF. - TABLE NO. 5.7 TO 5.9)

OVERALL OBSERVATION

- If we see the parity among NCERT Learning Outcomes and their reflection in state textbooks and curriculum / syllabus for a particular subject for class 3, the highest parity is shown in EVS, followed by Mathematics. For class 5, the highest parity is shown in Mathematics, followed by EVS. For class 8, the highest parity is seen in Science.

  (REF. - TABLE NO. 5.1 TO 5.3)

- If we see the parity among NCERT Learning Outcomes and their reflection in CISCE textbooks and curriculum / syllabus for a particular subject, the highest parity is shown in Mathematics, followed by English for class 3. For class 5, the highest parity is shown in Mathematics, followed by English and the non alignment is maximum for EVS. For class 8, the highest parity is shown in Mathematics, followed by English. The highest nonalignment is seen in case of Social Science for the same class.

  (REF. - TABLE NO. 5.4 TO 5.6)

- If we see the parity among NCERT Learning Outcomes and their reflection in CBSE textbooks for a particular subject, the highest parity is shown in Maths followed by English for class 3. For class 5, the highest parity is shown in Mathematics, followed by English. For class 8, the highest parity is also seen in Mathematics.

  (REF. - TABLE NO. 5.7 TO 5.9)

Chapter 6

EXTENT OF ALIGNMENT OF TEXTBOOKS WITH THE LEARNING OUTCOMES TESTED IN NAS 2017

6.1 INTRODUCTION

NAS 2017 was conducted by NCERT on selected Learning Outcomes for classes 3, 5 and 8 in specified subjects. In addition, some LOs of class 4 were tested in class 5 and some LOs of classes 6 and 7 were tested in class 8. An attempt was made to find out the extent of alignment of the tested Learning Outcomes with the textbooks of the said classes. SCERT (WB) developed a format for recording the reflection of the Learning Outcomes tested in NAS 2017 in the state textbooks.

6.2 ALIGNMENT WITH TEXTBOOKS OF WEST BENGAL BOARDS

The extent of alignment of textbooks of the West Bengal Board of Primary Education (WBBPE), the West Bengal Board of Secondary Education (WBBSE) with the Learning Outcomes (LOs) tested in NAS 2017 was studied.

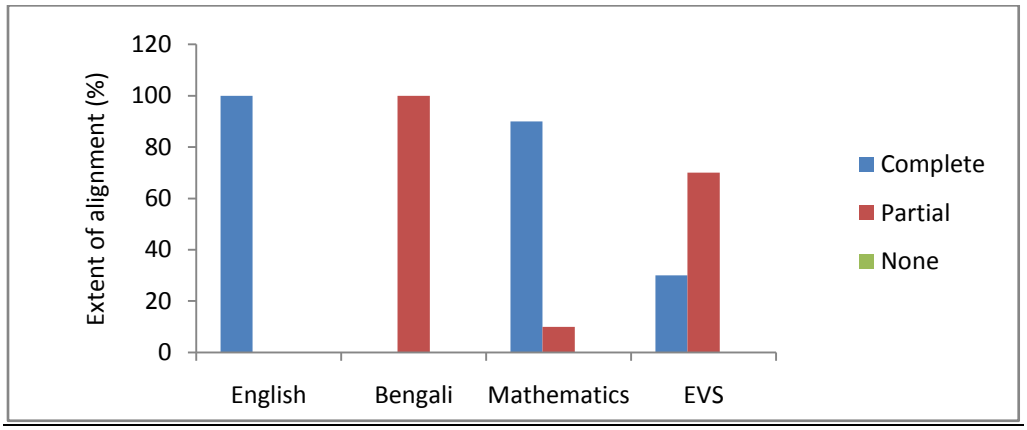
6.2.1 CLASS 3, BOARD: WBBPE

The alignment of textbooks with LOs tested in NAS 2017 for different subjects of class 3 is shown in the Table No. 6.1 (Figure No. 6.1.). The said textbooks are more or less aligned to the LOs of NAS 2017.

Table No. 6.1: Alignment of NAS 2017 LOs with State Textbooks for Class 3

Subject	No. of LOs tested in NAS 2017	Extent of Alignment (in %)		
		Text Book		
		Complete	Partial	None
English	2	100	0	0
Bengali	2	0	100	0
Mathematics	12	90	10	0
EVS	10	30	70	0

Figure No. 6.1: Alignment of NAS 2017 LOs with State Textbooks for Class 3



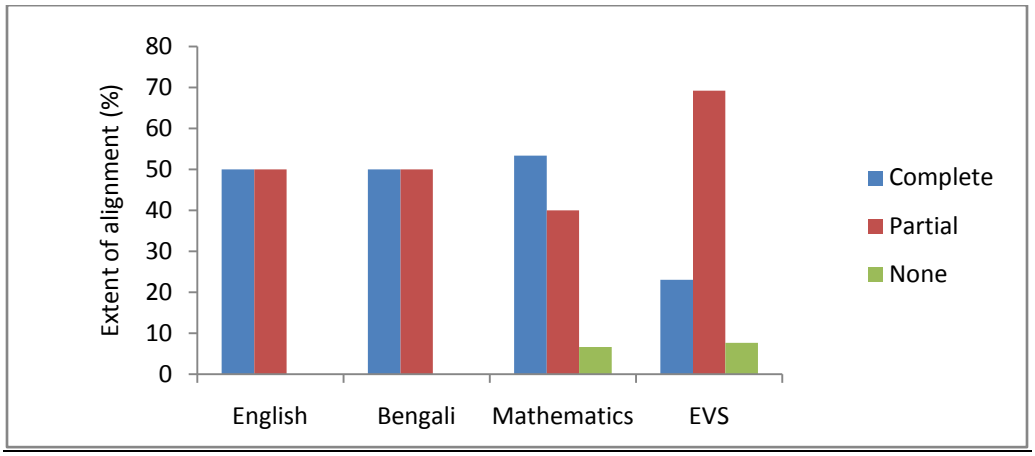
6.2.2 CLASS 5, BOARD: WBBPE

The alignment of textbooks with LOs tested in NAS 2017 for different subjects of class 5 is shown in the Table No. 6.2 (Figure No. 6.2). The said textbooks are partially aligned to the LOs of NAS 2017.

Table No. 6.2: Alignment of NAS 2017 LOs with State Textbooks for Class 5

Subject	No. of LOs tested in NAS 2017	Extent of Alignment (in %)		
		Text Book		
		Complete	Partial	None
English	2	50	50	0
Bengali	2	50	50	0
Mathematics	15	53.33	40.00	6.67
EVS	13	23.08	69.23	7.69

Figure No. 6.2: Alignment of NAS 2017 LOs with State Textbooks for Class 5



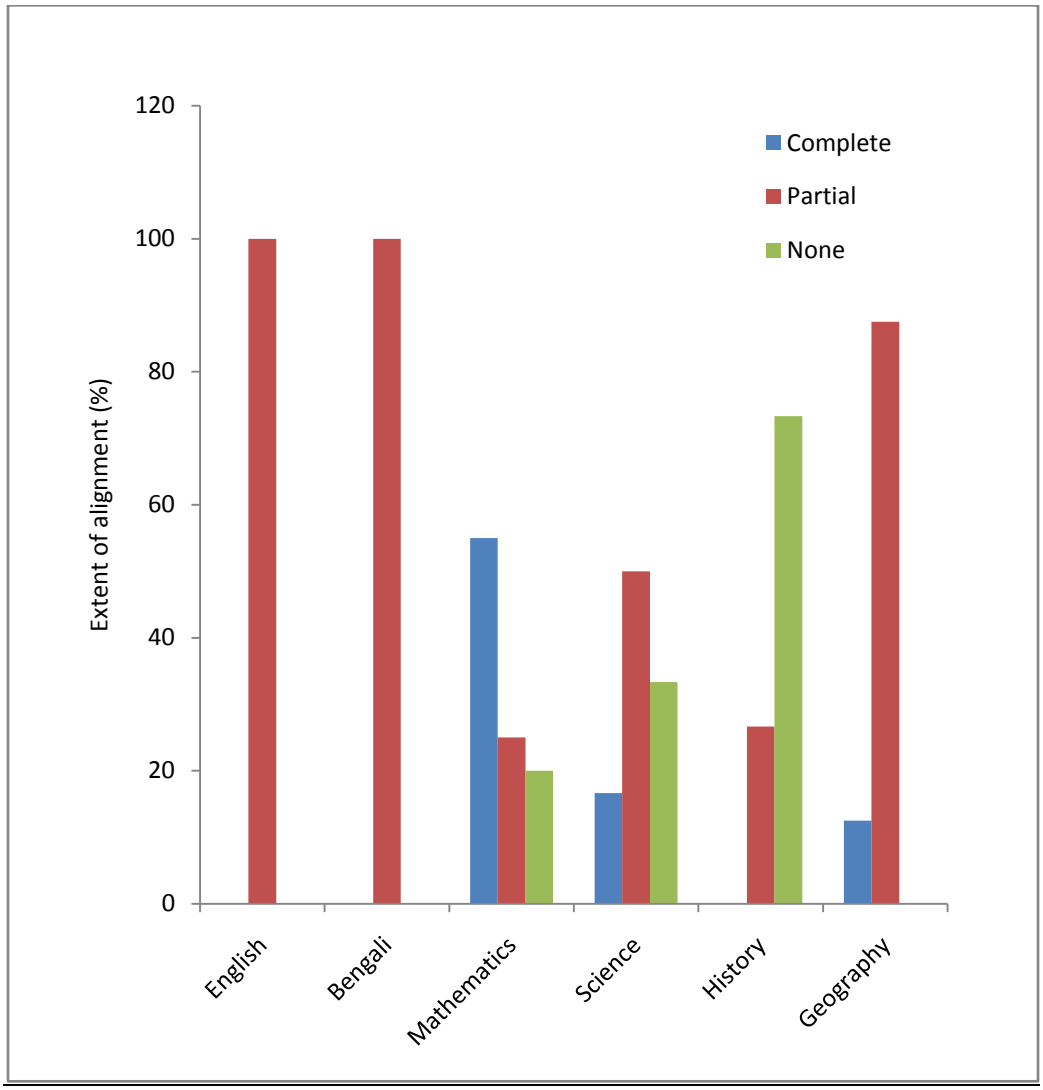
6.2.3 CLASS 8, BOARD: WBBSE

The alignment of textbooks with LOs tested in NAS 2017 for different subjects of class 8 is shown in the Table No. 6.3 (Figure No. 6.3). The said textbooks of English, Bengali and Geography are partially aligned to the LOs of NAS 2017, but the textbooks of Mathematics, Science and History show increasing nonalignment with NAS LOs.

Table No. 6.3: Alignment of NAS 2017 LOs with State Textbooks for Class 8

Subject	No. of LOs tested in NAS 2017	Extent of Alignment (in %)		
		Text Book		
		Complete	Partial	None
English	1	0	100	0
Bengali	1	0	100	0
Mathematics	20	55	25	20
Science	12	16.67	50.00	33.33
History	15	0	26.67	73.33
Geography	8	12.50	87.50	0

Figure No. 6.3: Alignment of NAS 2017 LOs with State Textbooks for Class 8



6.3 EXTENT OF ALIGNMENT OF TEXTBOOKS WITH THE LEARNING OUTCOMES TESTED IN NAS 2017 WHERE PERFORMANCES ARE BELOW THE NATIONAL AVERAGE

It is evident from the State Learning Report (SLR) published by NCERT that the state average is higher than the national average in all the subjects tested for class 3 and in Mathematics for class 5. For class 8, the state average is lower than the national average in all the subjects tested. In SLR, the average performance in all the tested individual LOs is available but the corresponding national average for individual LO is not available. For this purpose, it has been assumed that the national average for each subject is the score for the individual LOs for that subject, so that the

extent of alignment of state textbooks with the LOs tested in NAS 2017 where the performances of the students are below the national average can be ascertained.

The extent of alignment of textbooks of the West Bengal Board of Primary Education (WBBPE) for class 5 with the Learning Outcomes (LOs) tested in NAS 2017 where performance of students in the subjects tested is below the national average is shown in Table No. 6.4. The table shows that the textbooks are partially aligned (100%) in case of English and Bengali whereas in case of Mathematics the extent of partial alignment is 50% and complete alignment is 33.33%. For EVS, it is seen that for complete and partial alignment, the extent is 50% each in the textbooks.

Table No. 6.4: Alignment of NAS 2017 LOs with State Textbooks where Performance is below National Average for Class 5

Subject	National level Average performance	No. of LO(s) where Performance is below National Average	Extent of Alignment (in %)		
			Text Book		
			Complete	Partial	None
English	58	1	0	100	0
Bengali	58	1	0	100	0
Mathematics	53	6	33.33	50	16.67
EVS	57	4	50	50	0

The extent of alignment of textbooks of West Bengal Board of Secondary Education (WBBSE) for class 8 with the Learning Outcomes (LOs) tested in NAS 2017 where performance of students in the subjects tested is below the national average is shown in Table No. 6.5. The table shows that the textbooks are partially aligned (100%) in case of English, Bengali and History whereas in case of Mathematics the extent of partial alignment is 23.53% and complete alignment is 58.82%. Inspite of the fact that higher value in complete alignment exists in Mathematics, the performance of the students in 17 of the tested LOs is below than that of the national average. For Geography, it is seen that partial alignment to the extent of 80% exists in the textbooks.

Table No. 6.5: Alignment of NAS 2017 LOs with State Textbooks where Performance is below National average for Class 8

Subject	National level Average Performance	No. of LO(s) where Performance is below National Average	Extent of Alignment (in %)		
			Text Book		
			Complete	Partial	None
English	57	1	0	100	0
Bengali	57	1	0	100	0
Mathematics	42	17	58.82	23.53	17.65
Science	44	9	22.22	44.45	33.33
History	44	3	0	100	0
Geography	44	5	20	80	0

6.3 CHAPTER SUMMARY

- The textbooks of class 3 are more or less aligned to the tested LOs of NAS 2017.
- The textbooks of class 5 are partially aligned to the tested LOs of NAS 2017.
- The textbooks of class 8 in English, Bengali and Geography are partially aligned to the tested LOs of NAS 2017, but the textbooks of Mathematics, Science and History show increasing nonalignment with the tested NAS LOs.
- It is seen that the extent of complete alignment is decreasing from class 3 to class 8 for English and Mathematics. For EVS (class 3, 5) and Science (class 8), the extent of the partial alignment of the tested Learning Outcomes with the textbooks is on the higher side.
- In case of Learning Outcomes (LOs) tested in NAS 2017 where performance of students in the subjects tested is below the national average , the textbooks of class 5 are partially aligned (100%) in case of English and Bengali whereas in case of Mathematics the ex tent of partial alignment is 50% and complete alignment is 33.33%. For EVS, it is seen that for complete and partial alignment, the extent is 50% each in the textbooks.

In case of class 8, the textbooks are partially aligned (100%) in case of English, Bengali and History whereas in case of Mathematics the extent of partial alignment is 23.53% and complete alignment is 58.82%. Inspite of the fact that higher value in complete alignment exists in Mathematics, the performance of the students in 17 of the tested LOs is below than that of the national average. For Geography, it is seen that the performance of the students in 5 out of 8 tested LOs is below the national average though partial alignment to the extent of 80% exists in the textbooks. Again for Science where the extent of partial alignment is 44.45% it is observed that performance of the students in 9 out of 12 tested LOs is below the national average.

Chapter 7

AN ANALYSIS OF TEACHING LEARNING PROCESSES IN THE SURVEYED SCHOOLS

7.1 INTRODUCTION

The survey was carried out in 90 schools in 6 districts of West Bengal (Kolkata, Purba Medinipur, Uttar Dinajpur, Jalpaiguri, Alipurduar and Birbhum). 30 schools were selected for each of the classes 3, 5 and 8 from the selected six districts. All the schools belong to Govt.-aided or Govt.-sponsored category and follow the curriculum / syllabus / textbooks prescribed by the West Bengal Board of Primary Education (WBBPE) or the West Bengal Board of Secondary Education (WBBSE).

Four tools were administered to see where the teaching- learning process in West Bengal stands in the light of Learning Outcomes. For three of the four tools, the target groups were the Heads of the Institutions (School Questionnaire, SQ), the teachers (Teachers' Questionnaire, TQ) and the students (Pupils' Questionnaire, PQ). The fourth tool was designed to record the classroom teaching-learning process and was termed as Classroom Observation Schedule (COS). It aimed to record the different strategies adopted by the teachers during classroom transaction and the students' activities corresponding to each such strategy.

7.2 ANALYSIS OF SCHOOL QUESTIONNAIRE

The schools were divided into two stages – primary (class 3) and secondary (classes 5 and 8). Table No.s 7.1 to 7.9 [Figure No.s 7.1 to 7.5] show the findings based on the responses of Heads of the Institutions. These findings throw light on the different aspects of academic and administrative issues related to the functioning of a school.

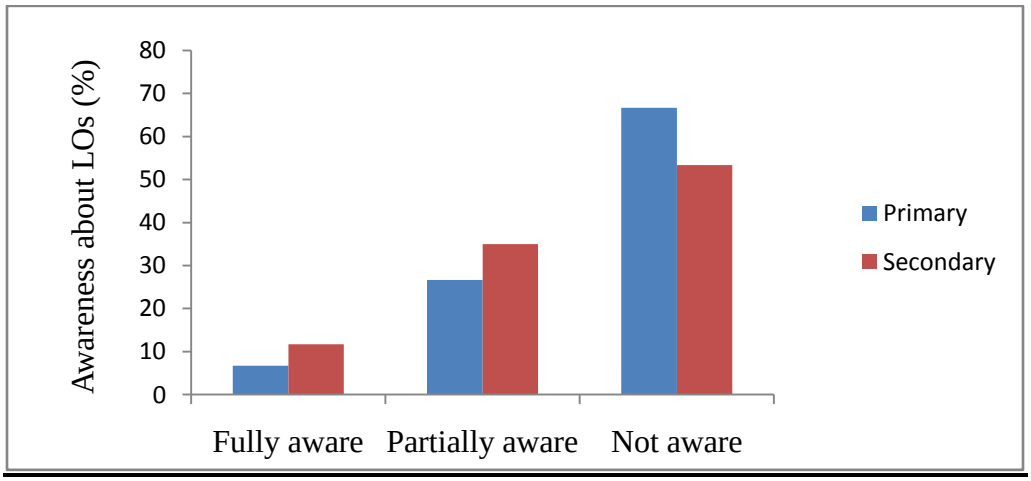
7.2.1 Awareness about Learning Outcomes (LOs) –

In response to the query regarding awareness about Learning Outcomes (LOs), 53 - 67% of the Head Teachers said that they were not aware about LOs.

Table No. 7.1: Awareness about Learning Outcomes (LOs)

Stage	Percentage		
	Fully aware	Partially aware	Not aware
Primary (Class 3)	6.67	26.67	66.67
Secondary (Classes 5 and 8)	11.67	35.00	53.33

Figure No. 7.1: Awareness about Learning Outcomes (LOs)



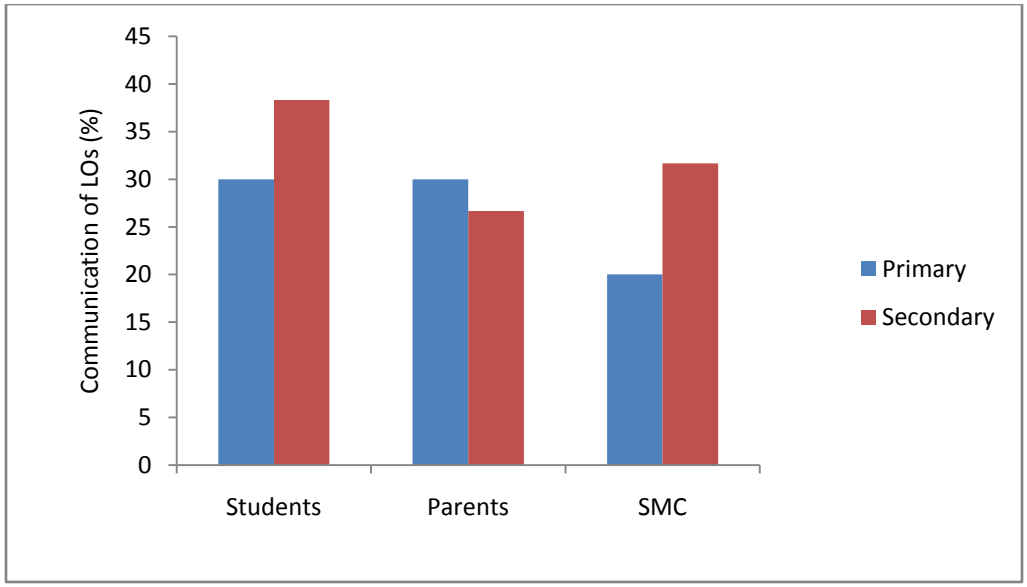
7.2.2 Communication of LOs to various target groups -

Regarding communication of LOs to students, parents and SMC, it is seen that only 20-30% of the respondents in primary stage and 26 – 38% of secondary stage respondents said that the LOs have been communicated to students, parents/guardians and School Management Committee (SMC).

Table No. 7.2: Communication of LOs to Target Groups

Target Group	LOs communicated (% of Head teachers)	
	Primary	Secondary
Students	30	38.33
Parents	30	26.67
SMC	20	31.67

Figure No. 7.2: Communication of LOs to Target Groups



7.2.3 Factors affecting school activity -

According to most of the Head teachers of Primary schools (70%), school activity was affected by inadequacy of ICT resources for delivery of instruction. A remarkable number of respondents (63.33%) said that shortage of support staff also affected school activity. The shortage of subject-specific teaching staff is not an influencing factor in case of primary schools as in primary schools the teachers are expected to teach all subjects.

For Secondary schools, most of the Head teachers (68.33% and 63.33%) said that school activity was affected by shortage of teaching staff and support staff. 60% of the respondents said that shortage of subject-specific teaching staff also affected school activity.

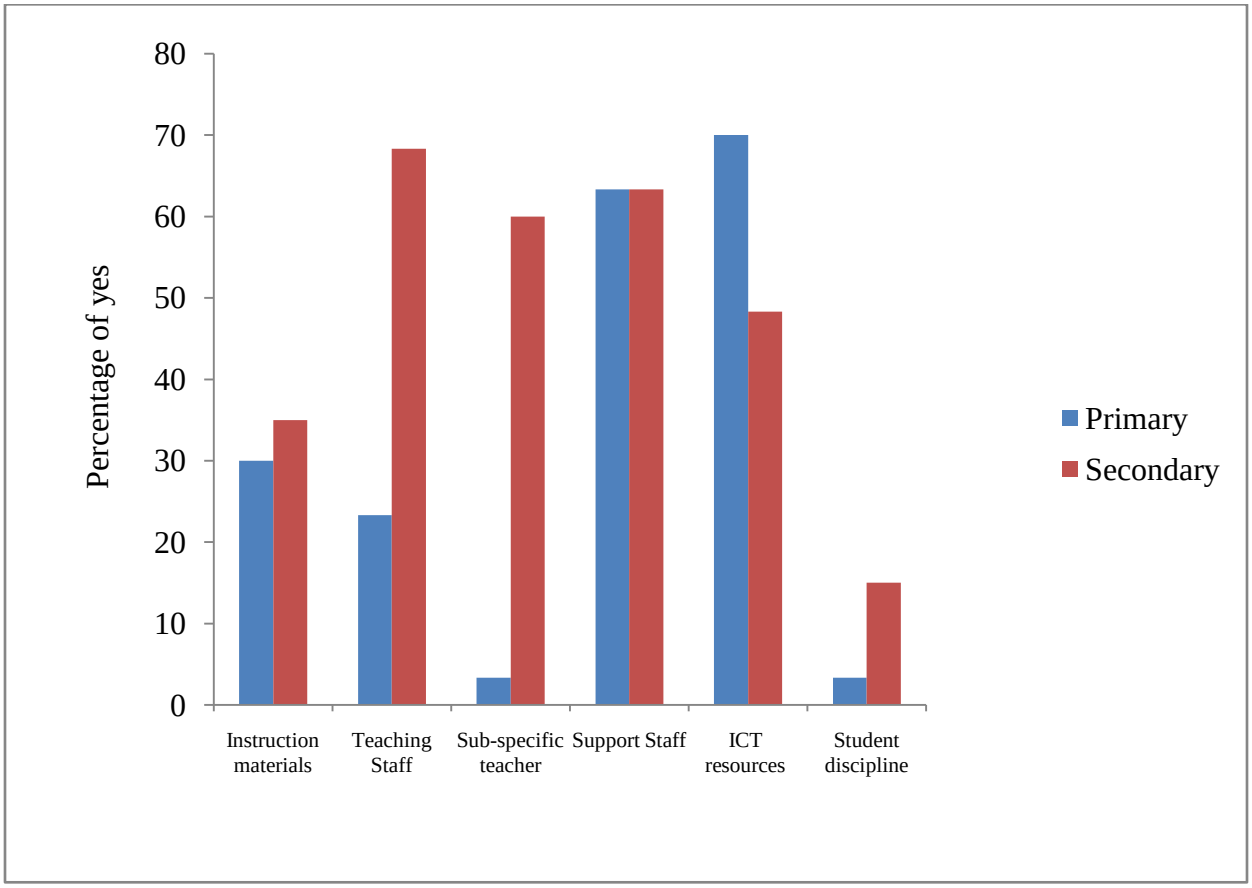
Table No. 7.3: Factors Affecting School Activity

School activity affected by shortage or inadequacy of	Percentage of affirmative answers	
	Primary	Secondary
Instruction materials(e.g. text books, TLM)	30.00	35.00
Teaching Staff	23.33	68.33
Subject-specific teaching staff	3.33	60.00
Support Staff	63.33	63.33
ICT resources for delivery of instruction	70.00	48.33
Student discipline	3.33	15.00

The other causes that, according to the respondents, affected school activity are –

- inadequacy of rooms
- teachers assigned with non teaching jobs
- lack of family support and awareness (for students)
- high roll strength
- inadequate school development fund
- insufficiency of games and sports materials
- lack of play ground, boundary wall
- shortage of safe drinking water, bench and other furniture
- absenteeism of students
- lack of projector room, science laboratory, auditorium, library
- shortage of separate, clean, hygienic toilets for boys and girls

Figure No. 7.3: Factors Affecting School Activity



7.2.4 Monitoring of different activities -

According to most of the respondents (90% and above), all the aspects of pedagogy and administration mentioned in the table are monitored.

Table No. 7.4: Monitoring of Different Activities

Monitoring of	Percentage of affirmative answers	
	Primary	Secondary
Classroom teaching- learning process	96.67	98.33
Infrastructural facilities	90.00	95.00
Teacher's absenteeism	93.33	96.67
Student's absenteeism	96.67	91.67

Other issues that are monitored are –

- Health of students
- Parent-teacher-student relationship and solving of various problems
- Social activities
- Student discipline
- Mid-day meal and hygiene
- Safe drinking water
- Different school projects

7.2.5(a) Facts regarding questions for summative evaluation -

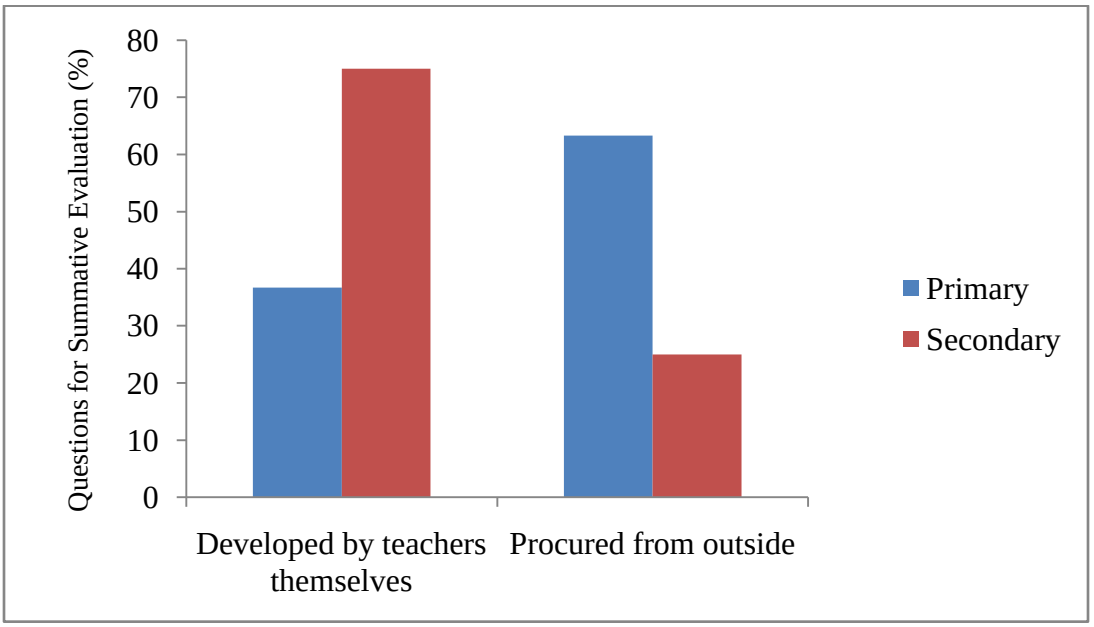
When asked whether the questions for summative evaluation of the school were developed by teachers of the school or procured from outside, majority (63.33%) of the Head teachers of primary schools said that the question papers were procured from outside.

The situation is reverse in the secondary stage. Here 75% of the Head teachers said that the teachers of the schools develop the questions for summative evaluation.

Table No. 7.5: Facts regarding Questions for Summative Evaluation

Stage	Percentage of responses	
	Developed by teachers themselves	Procured from outside
Primary	36.67	63.33
Secondary	75.00	25.00

Figure No. 7.4: Facts regarding Questions for Summative Evaluation



7.2.5(b) Attainment of LOs by the students with procured question papers -

When asked whether the question papers procured from outside test and evaluate the attainment of LOs by the students, the respondents in both stages appear to be almost equally divided, the percentage of respondents answering in the affirmative being slightly higher.

Table No. 7.6: Attainment of LOs by the Students with Procured Question Papers

Stage	Percentage of	
	Yes	No
Primary	57.89	42.11
Secondary	60.00	40.00

7.2.6 Requirement of orientation for developing LO attainment tests -

Almost all the respondents in both primary and secondary stages are of the opinion that an orientation is required for developing expertise on designing standardized LO attainment tests.

Table No. 7.7: Requirement of Orientation for Developing LO Attainment Tests

Stage	Percentage of	
	Yes	No
Primary	100	0
Secondary	96.67	3.33

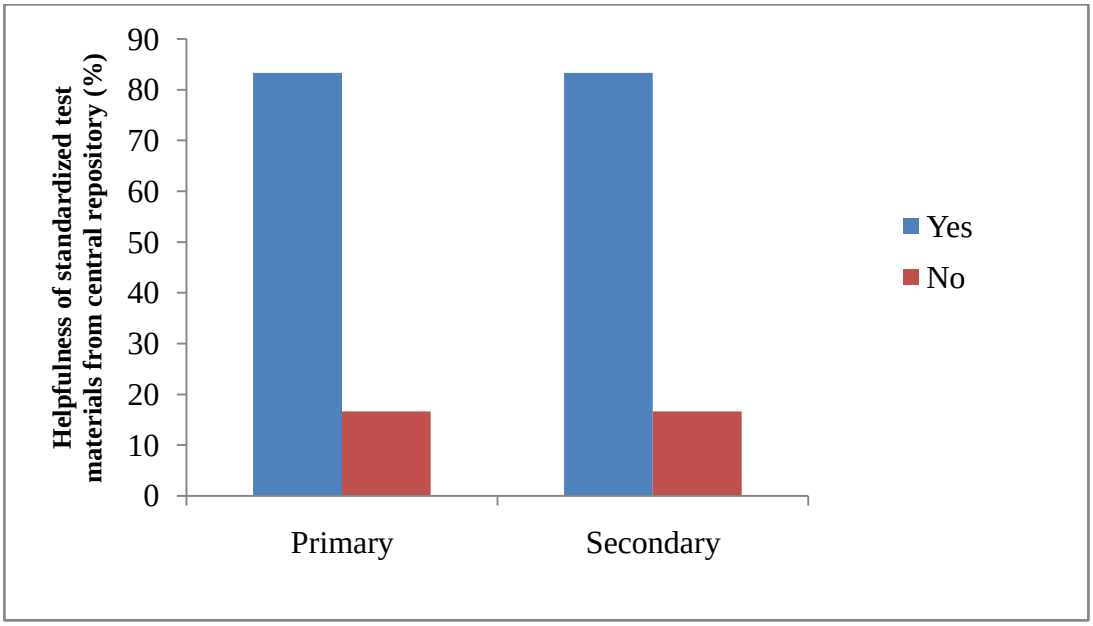
7.2.7 Helpfulness of standardized test materials from central repository -

Most of the respondents (83.33%) in both primary and secondary stages are of the opinion that using standardized test materials from a central repository (CLRC / CRC) will be helpful in determining the attainment of LOs.

Table No. 7.8: Helpfulness of standardized test materials from central repository

Stage	Percentage of	
	Yes	No
Primary	83.33	16.67
Secondary	83.33	16.67

Figure No. 7.5: Helpfulness of standardized test materials from central repository



7.2.8 Challenges perceived in school management -

Regarding the challenges perceived in school management, the main challenges are being overburdened with other responsibilities (70 – 80%), lack of infrastructural facilities (about 70%), absenteeism of students (60 – 70%), no orientation received on current pedagogical practices (60% for primary schools and 42% for secondary schools) and allocation of resources (50 - 60%). These data are applicable to schools of both the stages.

Table No. 7.9: Challenges Perceived in School Management

Challenges	Percentage of Yes	
	Primary	**Secondary**
Large class size	13.33	55.00
Classroom management by teachers	33.33	30.00
Absenteeism of students	60.00	71.67
Absenteeism of teachers	13.33	25.00
Infrastructural facilities	70.00	71.67
Overburdened with other responsibilities	80.00	70.00
Allocation of resources	50.00	61.67
Optimization of allocated resources	30.00	50.00
Outside school disturbance	23.33	16.67
No orientation received on current pedagogical practices (e.g. SLDP, Child Protection Policy, Guidance & Counseling, Inclusive Education etc.)	60.00	41.67

Other challenges included -

- Lack of awareness about LOs
- No separate room for Mid day meal
- Need for purified water supply
- Local issues
- Some children come from far distances
- Posts lying vacant

7.3 ANALYSIS OF TEACHERS QUESTIONNAIRE

The tools were administered on 90 teachers teaching in classes 3, 5 and 8 of 6 districts of West Bengal. Table No.s 7.10 to 7.20 [Figure No. 7.6 to 7.7] shows the findings based on the responses of the teachers whose classroom transaction of lessons was observed. These findings reflect their views on different aspects of the teaching learning process.

7.3.1 Average Teaching Experience (in years) –

The average teaching experience of the teachers of class 3 included in the survey is nine (9) years. For class 5 teachers, the average teaching experience is eleven (11) years and that of class 8 teachers is thirteen (13) years.

7.3.2 Academic Qualification of Teachers –

The academic qualification of the teachers of class 3 ranges from Madhyamik (MP) to Postgraduate, the percentage of postgraduates being the highest (26.67%). For classes 5 and 8, 56- 73% of the teachers are postgraduates.

Table No. 7.10: Academic Qualification of Teachers (in Percentage)

Class	Academic Qualification of Teachers (in %)				
	MP	HS	Honours Graduate	Pass Graduate	Post Graduate
3	6.67	23.33	23.33	20.00	26.67
5	0	0	26.67	16.67	56.67
8	0	0	20.00	6.67	73.33

7.3.3 Professional Qualification of Teachers –

More than half (53.33%) the teachers of class 3 possess the requisite D.El.Ed. qualification. 20% of the teachers are PTT qualified and 20% teachers have B.Ed. degree. But 6.67% teachers do not have any professional qualification. 80% and 96.67% teachers of class 5 and class 8 respectively have B.Ed. degree.

Table No. 7.11: Professional Qualification of Teachers (in Percentage)

Class	Professional Qualification of Teachers (in %)			
	PTT	D. El. Ed.	B.Ed.	None
3	20	53.33	20	6.67
5	3.33	13.33	80.00	3.33
8	0	3.33	96.67	0

7.3.4 Whether teaching the same subject as studied in highest Degree Course –

63 - 77% of the teachers said that in school they teach the same subject that they pursued in the highest degree course.

Table No. 7.12: Teachers Teaching the Same Subject as Studied in Highest Degree Course

Class	Affirmative Responses (in %)
3	63.33
5	73.33
8	76.67

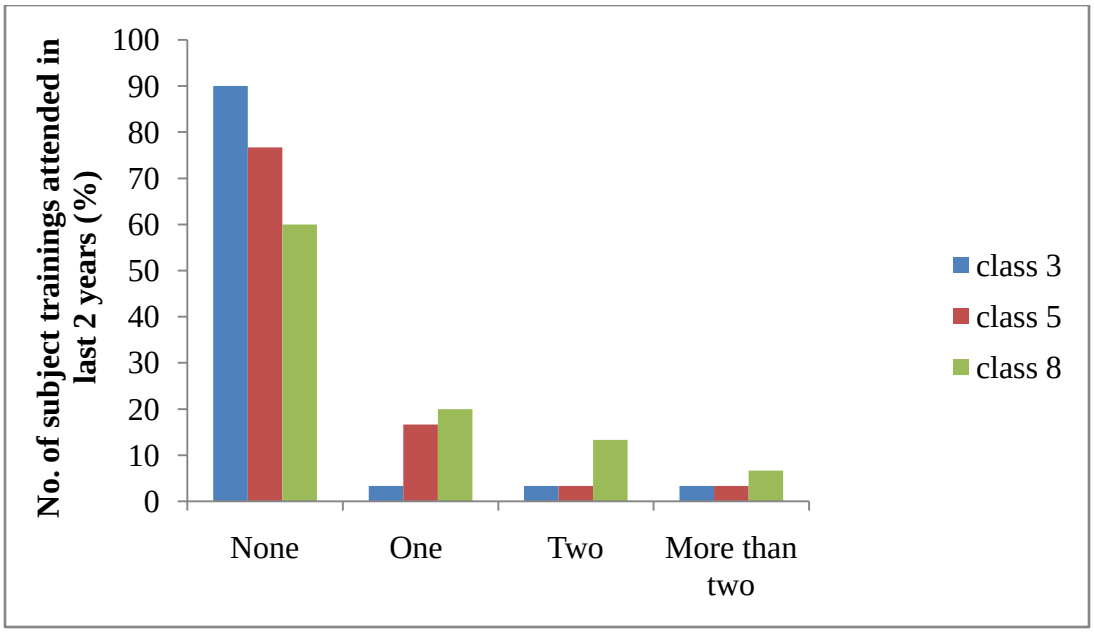
7.3.5 In-Service Training Programmes attended as subject teacher in the last 2 years –

90% of class 3 teachers said that they have not attended any training as a subject teacher on the subjects taught by them in the last two years. For class 5 and class 8, this figure is 76.67% and 60% respectively.

Table No. 7.13: In-Service Training Programmes attended as Subject Teacher in Last 2 years (in Percentage)

Class	No. of Subject Trainings attended in last 2 years (in %)			
	None	1 (One)	2 (Two)	More than 2
3	90.00	3.33	3.33	3.34
5	76.67	16.67	3.33	3.33
8	60.00	20.00	13.33	6.67

Fig. No. 7.6: In-Service Training Programmes attended as Subject Teacher in Last 2 years (in %)



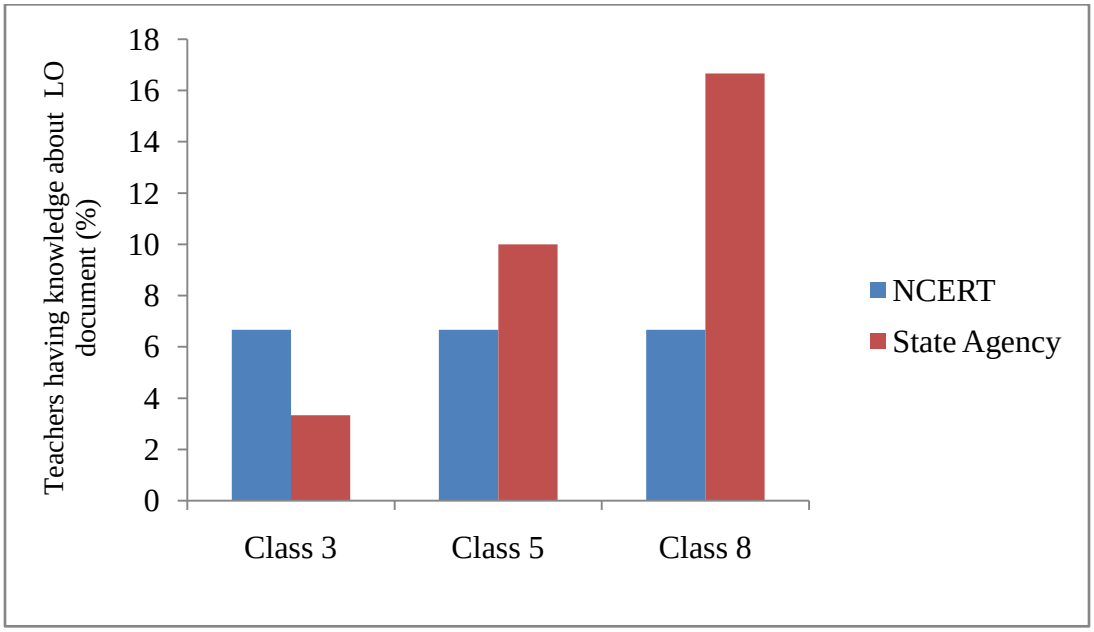
7.3.6 a) Knowledge about LO document-

When asked if they know about the Learning Outcomes document published by NCERT (in 2017) or by any appropriate state agency, only 6.67% of the teachers of the three classes said that they knew about the LO document published by NCERT. Percentage of teachers having knowledge about LO document published by a State Agency increases from class 3 (3.33%) to class 8 (16.67%).

Table No. 7.14: Knowledge about LO Document

LO document published by	Teachers having knowledge about LO document (in %)		
	Class 3	Class 5	Class 8
NCERT	6.67	6.67	6.67
State Agency	3.33	10.00	16.67

Fig. No. 7.7: Knowledge about LO Document



7.3.6.b) Reflection of teachers' ideas and views in LO Document –

50% of class 3 teachers who had knowledge about a document on Learning Outcomes, said that the concerned document reflected some of their ideas. 75 – 80% of classes 5 and 8 teachers having knowledge about a document on Learning Outcomes, said that the concerned document reflected some of their ideas.

Table No. 7.15: Reflection of teachers' ideas and views in LO Document

Class	Reflection of teachers' idea and views in LO Document (in %)			
	Very few	Some	All	Not Studied
3	0	50	0	50
5	0	75	0	25
8	0	80	0	20

7.4.6c) Attending of Training Programme on LOs –

Only 3.33% of the surveyed teachers of class 3 said that they have attended training programme on LOs. For both classes 5 and 8, 10% of the teachers had attended training programmes on LOs.

Table No. 7.16: Attending of Training Programme on LOs

Class	Attended Training Programme on LOs (in %)
3	3.33
5	10.00
8	10.00

7.3.6 d) Extent of alignment of the textbooks to attainment of desirable LOs by the students –

70% of class 3 teachers did not respond to this item. According to 23.33% teachers, the extent of alignment is 30 - 80% and 6.67% teachers said that the extent of alignment is more than 80%. For classes 5 and 8, 43 - 47% of the teachers did not respond and according to 13.33% of the teachers of these two classes the extent of alignment is more than 80%.

Table No. 7.17: Extent of Alignment of the Textbooks to Attainment of Desirable LOs by the Students

Class	Extent of Alignment of Textbooks to LO (in %)			
	> 80%	30 – 80%	<30%	No Response
3	6.67	23.33	0	70.00
5	13.33	33.33	10.00	43.33
8	13.33	36.67	3.33	46.67

7.3.6 e) Catering of integrated approach adopted in textbooks to attainment of desirable LOs by students –

33 - 43% of the teachers did not respond to this item and 37 - 53% partially agreed with the concept that the integrated approach adopted in textbooks caters to attainment of desirable LOs by students.

Table No. 7.18: Catering of integrated approach adopted in textbooks to attainment of desirable LOs by students

Class	Integrated Approach caters to attainment of LOs (in %)			
	Fully Agreed	Partially Agreed	Not Agreed	No Response
3	3.33	53.33	0	43.33
5	23.33	36.67	3.33	36.67
8	16.67	50.00	0	33.33

7.3.7 Existence of Resources / Supportive Environment for implementation of specified strategies –

Most of the teachers (93 - 97%) said that there were resources / supportive environment for carrying out classroom discussion and problem solving. The existence of supporting resources for carrying out ICT related activities was agreed upon by only 23% of class 3 teachers and by 50% teachers of classes 5 and 8.

Table No. 7.19: Existence of Resources / Supportive Environment for implementation of specified strategies

Strategy	Teachers' agreeing about existence of resources / supportive environment (in %)		
	Class 3	Class 5	Class 8
Classroom discussion	96.67	96.67	93.33
Peer and Group Learning	90.00	90.00	86.67
Integration of TLM in pedagogical processes	80.00	76.67	90.00
Role Playing / Simulation	66.67	63.33	60.00
Project work	40.00	73.33	83.33
Problem Solving	96.67	96.67	93.33
Hands-on Activity	86.67	86.67	76.67
ICT supported activities	23.33	50.00	50.00

Other interventions included creative activities like drawing, group songs, drama, etc.

7.3.8 Challenges perceived in the classroom teaching-learning processes –

The main challenges that emerge from the inputs given by the surveyed teachers of all the three classes are absenteeism of students, lack of infrastructural facilities and having no orientation on emerging pedagogical issues. For teachers of classes 5 and 8, large class size is also one of the major challenges.

Table No. 7.20: Challenges perceived in the classroom teaching-learning processes

Challenges perceived in the classroom teaching-learning processes	Respondents in agreement (in %)		
	Class 3	Class 5	Class 8
Large Class Size	10.00	53.33	46.67
Classroom indiscipline	10.00	20.00	3.33
Absenteeism of students	56.67	53.33	46.67
Infrastructural facilities	56.67	50.00	36.67
Work other than teaching	36.67	23.33	33.33
Overburdened with classes	20.00	23.33	16.67
Access to resources	13.33	16.67	16.67
Outside class disturbance	23.33	16.67	13.33
Outside school disturbance	20.00	13.33	13.33
No orientation received on current pedagogical practices (e.g. Child Protection Policy, Guidance & Counselling, Inclusive Education etc.)	53.33	43.33	56.67

Other challenges as perceived by the teachers include decline in enrolment, handling of differently-abled children and lack of awareness among guardians about their child /children's learning process.

7.4 AN ANALYSIS OF PUPILS' QUESTIONNAIRE

The tools were administered on 447 students studying in classes 3, 5 and 8 of 6 districts of West Bengal. Table Nos. 7.21 to 7.26 [Figure Nos.7.8 to] show the findings based on the responses of the students attending classes of teachers whose classroom transaction of lessons were observed. These findings reflect their opinions regarding different aspects of the teaching learning process.

7.4.1 Enjoying the Class Taught –

82 - 91% of the surveyed students said that they enjoyed the class they attended.

Table No. 7.21: Enjoying the Class Taught

Students enjoying the class (in %)		
Class 3	Class 5	Class 8
89.80	91.33	82.00

The reasons they cited for liking the class were -

- Easy to understand
- Known topic
- Not scolded by the teacher today
- Explained well by the teacher
- Enjoyed the story told by the teacher along with pictures
- Enjoyed teamwork
- Teacher is enthusiastic and encourages interaction
- Good interaction, joyful and fearless environment
- Participation in classroom discussion
- Teacher used TLM
- Teacher asked questions
- Group learning
- Worksheet given by the teacher
- Students were allowed to draw pictures
- The teacher is very friendly
- The teacher asks question to everyone. If any student fails to answer, she explains the answer
- The teacher has cited real life examples

The following reasons were cited by the students for not liking the class -

- Failed to understand the lesson
- Cannot understand the language used during teaching
- Sickness of the student
- No scope for interaction

7.4.2 Difference in home language and school language and Comprehension of language used in schools –

84 - 85% of the students of the three classes said that the language used in school is the same as the language spoken at home and about 97% of the students said that they can comprehend the language used by the teacher.

Table No. 7.22: Difference in Home Language and School Language and Comprehension of Language used in Schools

Issue	Students in Agreement (in %)		
	Class 3	Class 5	Class 8
Language in school same as that at home	83.67	84.67	85.33
Comprehension of language used by the teacher	97.28	96.67	96.67

7.4.3 Connecting lessons with real life experiences –

68 - 73% of the students of the three classes said that they can connect lessons with real life experiences.

Table No. 7.23: Connecting Lessons with Real Life Experiences

Connecting lessons with real life experiences (in %)		
Class 3	Class 5	Class 8
73.47	72.00	68.00

7.4.4 Participation in different classroom activities –

66 - 73% of the students said they regularly take part in classroom activities and 48 - 59% students said that they ask questions in the class regularly.

As for the classes observed on the day of the survey, the students' responses show that the percentages of participation in classroom activity and asking questions are 55 - 59 and 48 - 59 respectively.

Table No. 7.24: Participation in Different Classroom Activities

Classroom Activity	Affirmative responses of students (in %)		
	Class 3	Class 5	Class 8
Participation in classroom activity on the day of the survey	58.50	58.67	54.67
Regular participation in classroom activity	67.35	66.00	73.33
Asking questions on the day of the survey	26.53	20.00	17.33
Asking questions regularly in the class	47.62	49.33	58.67

7.4.5 Different activities of students in school and at home –

According to 14 to 18% of the students of classes 3 and 5 and 43% students of class 8, they get books / materials from school library. The percentage of the students which said that they discuss and share at home the lessons taught in classrooms, decreases from 82% in class 3 to 75% in class 8. 82 - 86% students of the three classes are able to take up the classwork or homework assigned to them. Regarding encouragement by the teacher to collect materials and/ develop TLMs, 34.69% students of class 3, 26% students of class 5 and 45% students of class 8 said that they are encouraged to do so. 42% students of class 3 and 8 and 32% of students of class 5 stated that they work in groups in class while doing activities. The percentage of students saying that ICT is used in the schools increases from class 3 (15%) to class 8 (30%).

Table No. 7.25: Different Activities of Students in School and at Home

Activities in School and at Home	Affirmative responses of students (in %)		
	Class 3	Class 5	Class 8
Getting books / materials from school library	14.29	18.67	42.67
Discussion and sharing of lessons taught in the class at home	81.63	78.67	75.33
Ability to take up class work / homework	82.31	82.67	86.00
Encouragement by the teacher to collect materials and/ develop TLMs	34.69	26.00	45.23
Working in groups in class while doing activities	41.50	32.00	42.00
Use of ICT in schools	14.97	27.33	30.00

7.4.6 Participation in field studies organised by school -

31.29% of the students said that they participate in field trips / nature studies organised by school. All of these students said that they enjoy such trips.

Table No. 7.26: Participation in Field Studies Organised by School

Activity	Affirmative responses of students (in %)		
	Class 3	Class 5	Class 8
Participation in field trips / nature studies organised by school	31.29	22.00	25.33
Enjoying the field trips	100	93.94	100

7.5 ANALYSIS OF CLASSROOM OBSERVATION SCHEDULE

In this section, the findings based on the observation of classroom teaching-learning are reflected. The classroom transaction of the three subjects tested in NAS 2017 – Language, Mathematics and EVS was observed. The time devoted by the 30 observed teachers to different activities in a class and the student activities corresponding to each teacher activity were noted. These findings throw light on the different pedagogical aspects of classroom transaction.

The study was carried out in class 3 of 30 primary schools in 6 districts. For each of the three subjects mentioned above, classroom observations were done in 10 schools. All the schools belong to Govt.-aided or Govt. – sponsored category and follow the curriculum / syllabus / textbooks prescribed by the West Bengal Board of Primary Education (WBBPE).

7.5.1 Percentage of students present on the day of the Survey –

In the schools surveyed, 68% of class 3 students, 50.31% of class 5 students and 49.21% of class 8 students were present on the day of the Survey.

Table No. 7.27: Percentage of Students Present on the Day of the Survey

Class	Total Enrolment of surveyed schools	Total number of Students Present on the day of the Survey	Percentage of Students Present on the day of the Survey
3	775	527	68
5	2232	1123	50.31
8	1971	970	49.21

7.5.2 Physical Environment of the Class –

Almost all classrooms observed had functional black / white boards. 73 - 90% of the classrooms had adequate seating space. Adequate light was enjoyed by 87 - 90% of the classes. Teaching aids were used in 37 - 50% of the classes.

Table No. 7.28: Physical Environment of the Class

Physical Feature	Classrooms (in %)		
	Class 3	Class 5	Class 8
Adequate seating space	80	73.33	90.00
Functional Black board / White board	100	93.15	100
Adequate Light	90	90.00	86.67
Teaching Aids used during teaching	50	43.33	36.67

7.5.3 Average Class Duration and Average Time for imparting lessons –

The average class duration is of 40 minutes and the average time taken for imparting lessons is 38 minutes.

7.5.4 Individual Teacher Activities and corresponding Student Activities during observation of classroom transaction –

The possible teacher activities and their corresponding student activities were listed. Some teacher's activities were designated as main activities and various other activities were listed under these main activities. The average time spent on carrying out each main activity and its subdivisions were calculated in percentage.

During classroom transaction, all the individual teacher activities and the corresponding student activities were observed and noted.

It may be mentioned that since the individual activities of both teachers and students as shown in the tables are overlapping, the sum of the percentages of time spent on each activity will exceed 100.

The findings are shown in the following tables.

A) Introductory steps to break ice: Drawing students' attention –

It is seen from the Table No. 7.29 that on an average, the teachers spend about 13% of the total time taken for imparting lessons on introductory steps to break ice which help in drawing students' attention to the ongoing class. During this activity, the maximum time is spent by the teacher on asking of probing questions.

Corresponding to this teacher's activity, on an average, 69 - 74% students of the three classes were involved in getting ready for class. An increasing percentage of students from classes 3 and 5 (50%) to class 8 (69%) are seen to be engaged in listening attentively. Around 50% students of the three classes are seen to be responding to questions / instructions.

Table No. 7.29: Introductory Steps to Break Ice: Drawing Students' Attention

Teacher's Activity	Average time spent (in %)			Corresponding Student Activity	Average Students' involvement (in %)		
	Class 3	Class 5	Class 8		Class 3	Class 5	Class 8
A)Introductory steps to break ice: Drawing students' attention	**13.22**	**13.62**	**13.22**	Getting ready for class	74.17	71.58	69.69
Presentation of concrete objects/materials	1.60	2.07	1.49				
Anecdotes	0.09	0.34	1.05	Listening Attentively	50.53	54.25	69.09
Stories	1.69	3.28	3.33				
Probing Questions	7.36	6.03	4.64	Responding	50.65	52.27	47.39
Presenting a problem / puzzle	2.04	1.90	2.10	Inattentive	25.00	28.57	22.27
Any other	0.44	0	0.61				

B) Recapitulation of previous lessons –

Table 7.30 shows that on an average, the teachers spend increasing percentage of the time for imparting lessons on recapitulation of previous lessons from class 3 (12%) to class 8 (22%). During this activity for classes 3 and 5, the maximum time is spent by the teacher on citing related examples and testing previous knowledge by questioning. For class 8, the maximum time

is spent by the teacher on testing previous knowledge by questioning and recalling the previous lesson in form of statement.

Corresponding to this teacher's activity for the three classes, on an average, 45 - 48% students of were involved in recalling. 35 - 41% students were engaged in identifying and 36 - 43% of the students were engaged in correlating.

Table No. 7.30: Recapitulation of Previous Lessons

Teacher's Activity	Average time spent (in %)			Corresponding Student Activity	Average Students' involvement (in %)		
	Class 3	Class 5	Class 8		Class 3	Class 5	Class 8
B) Recapitulation of previous lessons	**11.89**	**15.43**	**22.42**	Recalling	47.69	45.56	45.24
Recalling the previous lesson in form of statement	1.95	2.33	6.13				
Testing previous knowledge by questioning	4.53	7.07	10.51	Identifying	37.86	35.00	41.25
Citing related examples	5.41	6.03	5.78				
Any other	0	0	0	Correlating	43.67	36.00	36.67

C) Strategies adopted to engage students in the day's lesson –

It is seen from Table 7.31 that the teachers spend the maximum time for strategies adopted to engage students in the day's lesson. Of the total time, 55.27% is spent on this activity in class 3 and 47% is spent in classes 5 and 8. During this activity, time is spent by the teacher mainly on questioning and reading aloud with proper intonation.

Corresponding to this teacher's activity, on an average, 53 - 59% students of classes 3 and 5 and 25% of students of class 8 participated in loud reading. 52 - 59% students got engaged in activities. 41 - 51% of the students were engaged in responding to teacher's instruction and 41 – 43% students answered questions. The percentage of students putting up questions to the teacher is 23, 46 and 39 for classes 3, 5 and 8 respectively.

Table No. 7.31: Strategies Adapted to Engage Students in the Day's Lesson

Teacher's Activity	Average time spent (%)			Corresponding Student Activity	Average Students' involvement (in %)		
	Class 3	Class 5	Class 8		Class 3	Class 5	Class 8
C)Strategies adopted to engage students in the day's lesson	**55.27**	**47.06**	**47.11**	Responding to teacher's instruction	48.50	40.88	50.50
Questioning	19.96	16.29	18.56	Answering	42.78	41.25	40.96
Involving students in activities / experimentation	7.01	7.41	8.23	Questioning	23.00	45.50	39.38
Reading aloud with proper intonation	15.26	16.64	12.26	Getting engaged in activities	54.17	51.76	58.75
Using Teaching Aids etc.	13.04	6.72	8.06	Participating in loud reading	59.23	53.85	25.00

D) Discussion on Content and Explanation –

Table No. 7.32 shows that the teachers spend 31 - 43% of the total time taken for discussion on content and its explanation. The percentage shows an increasing trend from class 3 to class 8. The percentage of students taking notes decreases from class 3 (60%) to class 8 (51%). 35 - 39% students of the three classes were involved in relating knowledge with previous experiences. The trend of asking questions increases from class 3 (28%) to class 5 (59%) and class 8 (53%).

Table No. 7.32: Discussion on Content and Explanation

Teacher's Activity	Average time spent (%)			Corresponding Student Activity	Average Students' involvement (in %)		
	Class 3	Class 5	Class 8		Class 3	Class 5	Class 8
D) Discussion on Content and Explanation	**30.61**	**36.98**	**43.35**	Taking notes	60.45	50.00	51.25
				Raising Questions	28.33	58.57	53.13
				Relating knowledge with previous experiences	39.44	38.53	34.58

E) Mode of exchange -

The teachers spend 19 - 26% of the total time taken for exchange with the students through different modes. During this activity, the maximum time is spent by the teacher on impartial interactions. This activity was followed in time duration by encouragement of peer interaction for classes 3 and 5, and inviting dialogues in class 8.

Corresponding to this teacher's activity, on an average, 46 - 48% students of classes 3 and 5 were engaged in peer interaction and for class 8, this percentage is 67. 40 - 45% students of the three classes were involved in interaction with the teacher. 42 -55% students of classes 5 and 8 are engaged in debate.

Table No. 7.33: Mode of Exchange

Teacher's Activity	Average time spent (%)				Corresponding Student Activity	Average Students' involvement (in %)		
	Class 3	Class 5	Class 8			Class 3	Class 5	Class 8
E)Mode of exchange	**20.50**	**25.60**	**18.91**		Interaction	42.94	44.69	39.62
Impartial interactions	17.39	23.36	15.59					
Inviting Dialogues	0	0.34	2.10		Dialogues	0	15.00	31.00
Role Play	0	0	0		Role Play	0	0	0
Encouraging debates	0	0.34	0.35		Debates	0	41.67	55.00
Encouraging peer interaction	3.11	1.12	0.88		Peer interaction	48.33	46.00	66.67

F) Proper use of relevant Teaching Aids –

It is seen from Table No. 7.34 that on an average, the teachers spend 27 - 31% of the total time for proper use of relevant teaching aids. During this activity, the maximum time is spent by the teacher on using the blackboard. A little time was used on the use of charts, maps and low cost / no cost materials.

Corresponding to this teacher's activity, on an average, 46 - 48% students were engaged in interaction on the teaching aids used.

Table No. 7.34: Proper use of Relevant Teaching Aids

Teacher's Activity	Average time devoted (%)				Corresponding Student Activity	Average Students' involvement (in %)		
	Class 3	Class 5	Class 8			Class 3	Class 5	Class 8
F)Proper use of relevant Teaching Aids	**29.37**	**27.16**	**30.74**		Interacting on the Teaching Aids used	47.05	48.16	46.32
Blackboard	26.26	23.71	27.67					
Charts	1.51	0.17	1.31					
Maps	0.89	0	0					
Globes	0	0	0					
Models	0	1.03	0					
Low Cost / No Cost materials	0.44	2.24	1.75					
Any other innovative materials	0.27	0	0					

G) Use of designed worksheet by teacher involving students –

It is seen from Table No. 7.35 that, on an average, the teachers spend 1 - 4% of the total time taken for use of designed worksheet by teacher involving students. The use of worksheets decreases in higher classes.

Corresponding to this teacher's activity, on an average, 90% students of classes 3 and 8 were engaged in working on the worksheets in groups. Percentage of students solving the worksheets individually for classes 3 and 5 is 78 and 55 respectively.

Table No. 7.35: Use of Designed Worksheet by Teacher involving Students

Teacher's Activity	Average time devoted (%)				Corresponding Student Activity	Average Students' involvement (in %)		
	Class 3	Class 5	Class 8			Class 3	Class 5	Class 8
G)Use of designed worksheet by teacher involving students	**3.64**	**1.29**	**1.75**		Getting engaged in solving the worksheet i) In individual capacity	78.33	55.00	0
					ii) In groups	90.00	0	90.00

H) Appropriate pedagogical use of relevant ICT in classroom -

It is found that there is no appropriate pedagogical use of relevant ICT in classroom.

Table No. 7.36: Appropriate Pedagogical Use of Relevant ICT in Classroom

Teacher's Activity	Average time devoted (%)			Corresponding Student Activity	Average Students' involvement (in %)		
	Class 3	Class 5	Class 8		Class 3	Class 5	Class 8
H)Appropriate pedagogical use of relevant ICT in classroom	0	0	0	Getting involved with the ICT	0	0	0

I) Triggering / Facilitating a thought provoking process –

Table No. 7.37 shows that on an average, the teachers spend 5 - 11% of the total time taken for triggering / facilitating a thought provoking process. The time for this activity decreases in higher classes.

Corresponding to this teacher's activity, on an average, 35 - 44% students responded reflectively.

Table No. 7.37: Triggering / Facilitating a Thought Provoking Process

Teacher's Activity	Average time spent (%)			Corresponding Student Activity	Average Students' involvement (in %)		
	Class 3	Class 5	Class 8		Class 3	Class 5	Class 8
I) Triggering / Facilitating a thought provoking process	**10.91**	**4.74**	**5.95**	Responding reflectively	44.38	41.67	35.00

J) Inclusive strategies taken up by teacher -

The teachers of class 3 spend 12% of the total time on inclusive strategies. In case of classes 5 and 8 the teachers spend 3 – 4% of the total time on these strategies.

On an average, 45 - 55% students responded to teacher's intervention.

Table No. 7.38: Inclusive Strategies Taken up by Teacher

Teacher's Activity	Average time devoted (%)				Corresponding Student Activity	Average Students' involvement (in %)		
	Class 3	Class 5	Class 8			Class 3	Class 5	Class 8
J) Inclusive strategies taken up by teacher	**11.98**	**2.84**	**3.94**		Responding to teacher's intervention	46.11	45.00	55.00

K) Inbuilt Assessment -

It is seen from Table No. 7.39 that on an average, the teachers spend 12 - 13% of the total time taken for inbuilt assessment.

Corresponding to this teacher's activity, on average, 46 - 47% students participated in assessment.

Table No. 7.39: Inbuilt Assessment

Teacher's Activity	Average time spent (%)				Corresponding Student Activity	Average Students' involvement (in %)		
	Class 3	Class 5	Class 8			Class 3	Class 5	Class 8
K) Inbuilt Assessment	**13.49**	**12.41**	**12.00**		Participating in assessment	47.06	45.71	46.88

L) Enabling environment in classroom:- effort to make the learning joyful -

The teachers of class 3 spend 24 % of the total time taken on making efforts to make the learning joyful. The teachers of classes 5 and 8 spend 12 - 16 % of the total time.

Corresponding to this teacher's activity, on an average, 45 - 50% students were spontaneously involved in the classroom processes.

Table No. 7.40: Enabling Environment in Classroom - Effort to Make the Learning Joyful

Teacher's Activity	Average time devoted (%)			Corresponding Student Activity	Average Students' involvement (in %)		
	Class 3	Class 5	Class 8		Class 3	Class 5	Class 8
L) Enabling environment in classroom:- effort to make the learning joyful	**24.22**	**15.78**	**12.26**	Spontaneous involvement in classroom processes	50.26	48.67	44.58

M) Connecting knowledge with real life situation -

The teachers of class 3 spend 18% of the total time on connecting knowledge with real life situation. 14% and 8% of the total time is spent on the activity by teachers of classes 5 and 8 respectively.

33 - 46% of the students cited examples. 31 - 35% students were involved in solving problems. For class 3, 25% students raised questions / issues. For classes 5 and 8, the corresponding percentages for this activity are 42 and 15 respectively.

Table No. 7.41: Connecting Knowledge with Real Life Situation

Teacher's Activity	Average time devoted (%)			Corresponding Student Activity	Average Students' involvement (in %)		
	Class 3	Class 5	Class 8		Class 3	Class 5	Class 8
M) Connecting knowledge with real life situation	**17.92**	**13.71**	**7.88**	Citing examples	46.00	44.58	32.78
				Solving problems	33.08	35.00	31.00
				Raising questions / issues	25.00	42.14	15.00

CHAPTER SUMMARY

- On analysis of the School Questionnaire (SQ), following are observations that can be surmised-
  - In response to the query regarding awareness about Learning Outcomes (LOs), 66.67% of the Head Teachers of Primary schools said that they were not aware about LOs.
    In case of Secondary schools, 53.33% of the Head Teachers said that they were not aware about LOs.

  - According to most of the Head teachers (70%) of Primary schools, school activity was affected by inadequacy of ICT resources for delivery of instruction. A remarkable number of respondents (63.33%) said that shortage of support staff also affected school activity. The shortage of subject-specific teaching staff is not an influencing factor in case of primary schools as in primary schools the teachers are expected to teach all subjects.
    For Secondary schools, most of the Head teachers (68.33% and 63.33%) said that school activity was affected by shortage of teaching staff and support staff. 60% of the respondents said that shortage of subject-specific teaching staff also affected school activity.

  - When asked whether the questions for summative evaluation of the school were developed by teachers of the school or procured from outside, 63.33% of Head teachers of Primary schools and 25% of Head teachers of Secondary schools said that the question papers were procured from outside.

  - When asked whether the question papers procured from outside test and evaluate the attainment of LOs by the students, about 60% of the respondents in both Primary and Secondary schools answered in the affirmative.

  - Almost all the respondents are of the opinion that an orientation is required for developing expertise on designing standardized LO attainment tests.

- Most of the respondents (83.33%) are of the opinion that using standardized test materials from a central repository (CLRC / CRC) will be helpful in determining the attainment of LOs.

- As to the challenges perceived in school management, the main challenges are being overburdened with other responsibilities (70 – 80%), lack of infrastructural facilities (about 70%), absenteeism of students (60 – 70%), no orientation received on current pedagogical practices (60% for primary schools and 42% for secondary schools) and allocation of resources (50 - 60%).

- On analysis of the Teachers' Questionnaire (TQ), following are observations that can be surmised-
  - The average teaching experience of the teachers of class 3 included in the survey is nine (9) years. The average teaching experience of class 5 teachers is eleven (11) years and that of class 8 teachers is thirteen (13) years.

  - 90%, 77% and 60% of the teachers for classes 3, 5 and 8 respectively said that they have not attended any training as a subject teacher on the subjects taught by them in the last two years.

  - When asked if they know about the Learning Outcome document published by NCERT (in 2017) or by any appropriate state agency, only 6.67% of all the teachers said that they knew about the LO document published by NCERT. Only 3.33% of class 3 teachers, 10% of class 5 teachers and 17% of class 8 teachers had knowledge about LO document published by a State Agency.

  - Only 3.33% of the surveyed class 3 teachers said that they have attended training programme on LOs. For both class 5 and class 8 teachers, the figure is 10%.

  - Most of the teachers (93-97%) said that there were resources / supportive environment for carrying out classroom discussion and problem solving. The existence of supporting resources for carrying out ICT related activities was agreed upon by only 23% of class 3 teachers and by 50% teachers of classes 5 and 8.

- The main challenges that emerge from the inputs given by the surveyed teachers of all the three classes are absenteeism of students, lack of infrastructural facilities and having no orientation on emerging pedagogical issues. For teachers of classes 5 and 8, large class size is also one of the major challenges.

- On analysis of the Pupils' Questionnaire (PQ), following are observations that can be surmised-
  - About 84% of the surveyed students of classes 3, 5 and 8 said that they the language used in school is the same as the language spoken at home and according to about 97% of these students, they can comprehend the language used by the teacher.

  - 74% of the surveyed students of class 3 said that they can connect lessons with real life experiences. This percentage decreases progressively as we move to the higher classes.
  - On the day of the survey, 54-58% of the interviewed students of classes 3, 5 and 8 said that they participated in classroom activity. The percentage of students of classes 3, 5 and 8 that asked questions on the day of the survey is 27, 20 and 17 respectively.
  - 66 - 73% of the surveyed students (of classes 3, 5 and 8) said that they regularly take part in classroom activities and 47 - 58% of these students said that they ask questions in the class regularly.
  - According to 14 to 18% of the students of classes 3 and 5 and 43% students of class 8, they get books / materials from school library.
  - The percentage of the students which said that they discuss and share at home the lessons taught in classrooms, decreases from 82% in class 3 to 75% in class 8.
  - 82 - 86% students of the three classes are able to take up the classwork or homework assigned to them.
  - Regarding encouragement by the teacher to collect materials and/ develop TLMs, 34.69% students of class 3, 26% students of class 5 and 45% students of class 8 said that they are encouraged to do so.
  - 42% students of class 3 and 8 and 32% of students of class 5 stated that they work in groups in class while doing activities.
  - The percentage of students saying that ICT is used in the schools increases from class 3 (15%) to class 8 (30%).

- On analysis of the Classroom Observation Schedule (COS), following are observations that can be surmised-

  - Almost all classrooms (3, 5 and 8) observed had functional black / white boards.

  - For class 3, 80% of the classrooms and for class 8, 90% of the classrooms had adequate seating space. This percentage decreases in class 5 (73%).

  - Adequate light was enjoyed by about 90% of the classes.

  - The use of teaching aids in classrooms is seen to decrease from class 3 (50%) to class 8 (37%).

  - The teachers of all the classes observed (3, 5 and 8), spend about 13% of the total time taken for imparting lessons on introductory steps to break ice which help in drawing students' attention to the ongoing class. During this activity, the maximum time is spent by the teacher on asking of probing questions.

    Corresponding to this teacher's activity, on an average, 69 - 74% students of the three classes were involved in getting ready for class. An increasing percentage of students from classes 3 and 5 (50%) to class 8 (69%) are seen to be engaged in listening attentively. Around 50% students of the three classes are seen to be responding to questions / instructions.

  - On an average, the teachers spend increasing percentage of the time for imparting lessons on recapitulation of previous lessons from class 3 (12%) to class 8 (22%). During this activity for classes 3 and 5, the maximum time is spent by the teacher on citing related examples and testing previous knowledge by questioning. For class 8, the maximum time is spent by the teacher on testing previous knowledge by questioning and recalling the previous lesson in form of statement.

    Corresponding to this teacher's activity for the three classes, on an average, 45 - 48% students of were involved in recalling. 35 - 41% students were engaged in identifying and 36 - 43% of the students were engaged in correlating.

  - The teachers spend the maximum time for strategies adopted to engage students in the day's lesson. Of the total time, 55.27% is spent on this activity in class 3 and 47% is

spent in classes 5 and 8. During this activity, time is spent by the teacher mainly on questioning and reading aloud with proper intonation.

Corresponding to this teacher's activity, on an average, 53 - 59% students of classes 3 and 5 and 25% of students of class 8 participated in loud reading. 52 - 59% students got engaged in activities. 41 - 51% of the students were engaged in responding to teacher's instruction and 41 – 43% students answered questions. The percentage of students putting up questions to the teacher is 23, 46 and 39 for classes 3, 5 and 8 respectively.

- The teachers spend 31 - 43% of the total time taken for discussion on content and its explanation. The percentage shows an increasing trend from class 3 to class 8.

  The percentage of students taking notes decreases from class 3 (60%) to class 8 (51%). 35 - 39% students of the three classes were involved in relating knowledge with previous experiences. The trend of asking questions increases from class 3 (28%) to class 5 (59%) and class 8 (53%).

- The teachers spend 19 - 26% of the total time taken for exchange with the students through different modes. During this activity, the maximum time is spent by the teacher on impartial interactions. This activity was followed in time duration by encouragement of peer interaction for classes 3 and 5, and inviting dialogues in class 8.

  Corresponding to this teacher's activity, on an average, 46 - 48% students of classes 3 and 5 were engaged in peer interaction and for class 8, this percentage is 67. 40 - 45% students of the three classes were involved in interaction with the teacher. 42 -55% students of classes 5 and 8 are engaged in debate.

- The teachers of the three classes spend 27 - 31% of the total time taken for proper use of relevant teaching aids. During this activity, the maximum time is spent by the teacher on using the blackboard.

  On an average, 46 - 48% students of the three classes were engaged in interaction on the teaching aids used.

- On an average, the teachers spend 1 - 4% of the total time on using designed worksheet involving students.

Corresponding to this teacher's activity, on an average, 90% students of classes 3 and 8 were engaged in working on the worksheets in groups. Percentage of students solving the worksheets individually for classes 3 and 5 is 78 and 55 respectively.

- In all the three classes, it is found that there is no appropriate pedagogical use of relevant ICT in classroom.

- The teachers spend 5 - 11% of the total time taken for triggering / facilitating a thought provoking process. The highest percentage (11%) is seen in class 3.
  As for corresponding student activity, 44%, 42% and 35% of the students of classes 3, 5 and 8 respectively responded in a reflective manner.

- The teachers of class 3 spend 12% of the total time on inclusive strategies. In case of classes 5 and 8 the teachers spend 3 – 4% of the total time on these strategies.
  On an average, 45 - 55% students responded to teacher's intervention.

- The teachers of the three classes spend 12 - 14% of the total time taken for inbuilt assessment.
  Corresponding to this teacher's activity, on average, 46 - 47% students participated in assessment.

- The teachers of class 3 spend 24 % of the total time taken on making efforts to make the learning joyful. The teachers of classes 5 and 8 spend 12 - 16 % of the total time.
  Corresponding to this teacher's activity, on an average, 45 - 50% students were spontaneously involved in the classroom processes.

- The teachers of class 3 spend 18% of the total time on connecting knowledge with real life situation. 14% and 8% of the total time is spent on the activity by teachers of classes 5 and 8 respectively.
  33 - 46% of the students cited examples. 31 - 35% students were involved in solving problems. For class 3, 25% students raised questions / issues. For classes 5 and 8, the corresponding percentages for this activity are 42 and 15 respectively.

Chapter 8

STUDYING THE SUITABILITY OF SUMMATIVE EVALUATION TESTS USED IN OUR STATE FOR ASSESSING THE LEARNING OUTCOMES AS TESTED IN NAS 2017

8.1 PREMISE

The conduct of NAS 2017 covered schools following varied Boards and Councils in India. Different methods are followed while assessments and evaluations are done by the respective Boards and Councils and the Achievement Tests developed and administered in NAS 2017 followed certain principles in developing those Tests. An important hallmark in the NAS 2017 Test tools has been that those were aimed toward assessing the achievement of learners in the light of a select set of Learning Outcomes (LO). These sets of Learning Outcomes, which were developed separately for different classes and different subjects under the test, have been published by NCERT in their report. A scrutiny will reveal that any such set of LO – for classes 5 and 8 in particular – is in essence a mix of LOs from one or two earlier grade levels. This is more apparent in sets of LO tested in Class-8.

Learning Outcomes (LO) are statements that specify what students will know, be able to do or be able to demonstrate when they have completed the lessons in their respective classes and subjects. The NAS 2017 has been conducted using those test items on selected LO developed by the NCERT to find out the ability of the students in classes 3, 5 and 8. The subjects that were tested in NAS 2017 were Language, Mathematics and EVS for classes 3 and 5, and Language, Mathematics, Science and Social Science for grade 8.

As per its proposed objectives, the present study aimed at looking for any parity that the NAS 2017 Test tools may have with the Tests that our sampled schools had used during their final/third Summative Evaluation for those specific grades, during end of 2017. However, due to unavailability of the tests from surveyed schools in a few cases, the tests used in first Summative Evaluation (held in early 2018) have been considered for those schools.

8.2 METHOD OF ANALYSIS

The Tests used in Summative Evaluation by the schools have been reviewed by a group of subject experts constituting Head Teachers and Teachers, who among other things aimed to find

- *if the items in the Summative Evaluation tests used for a particular class in the surveyed schools test those learning outcomes as were identified in developing of NAS 2017 Test tools – for that subject;*

8.3 FINDINGS ON TEST ANALYSIS

The following Table shows the total numbers of Summative Evaluation Tests (SET) used in classes 3, 5 & 8 by the surveyed schools, have been reviewed by the practising teachers/experts:

Table 8.1: Subject-wise number and percentage of Tests reviewed for different classes

CLASS	SUBJECTS OF THE REVIEWED TESTS									
	LANGUAGE				MATHEMATICS		EVS/ SOCIAL SCIENCE		SCIENCE	
	No. of BENG Tests	(%)	No. of ENG Tests	(%)	No. of MATHS Tests	(%)	No. of EVS/SOCIAL SCIENCE Tests	(%)	No. of SCIENCE Tests	%
3	23	27.4	24	28.6	15	17.9	22	26.2	____	
5	19	26.3	17	23.3	20	27.4	17	23.3	____	
8	15	15.78	11	11.57	13	13.68	Geo- 25 History- 15	Geo- 26.31 His- 15.78	16	16. 84

Table 8.2: Subjects of the reviewed SET in Class 3

CLASS 3	%
LANGUAGE (Bengali)	27.4
LANGUAGE (English)	28.6
MATHEMATICS	17.9
EVS	26.2

Figure 8.1: Percentage of Reviewed Summative Evaluation Tests for Class 3

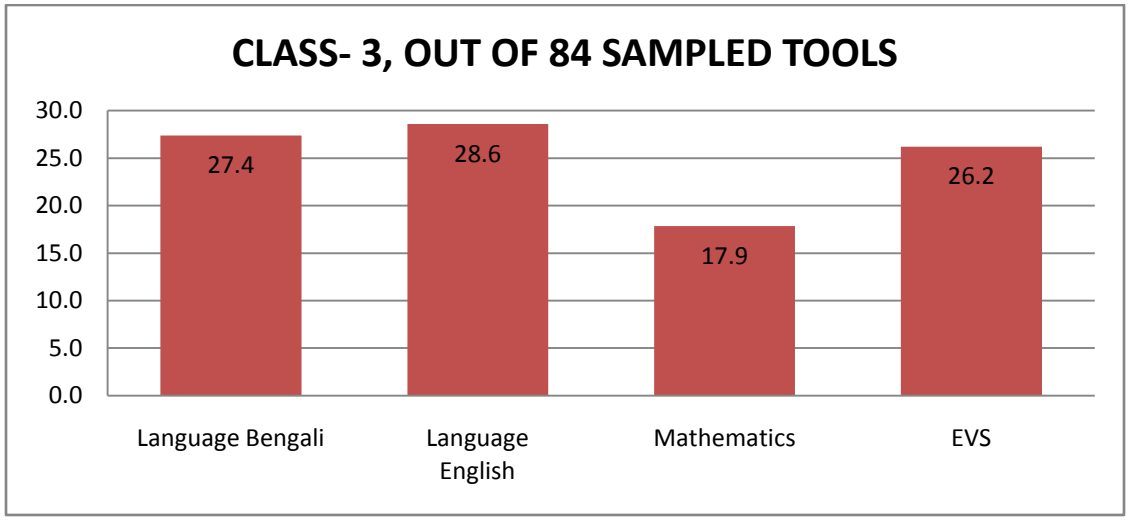


Table 8.3: Subjects of the reviewed SET in Class 5

CLASS 5	%
Language Bengali	26.03
Language English	23.29
Mathematics	27.40
EVS	23.29

Figure 8.2: Percentage of Reviewed Summative Evaluation Tests for Class 5

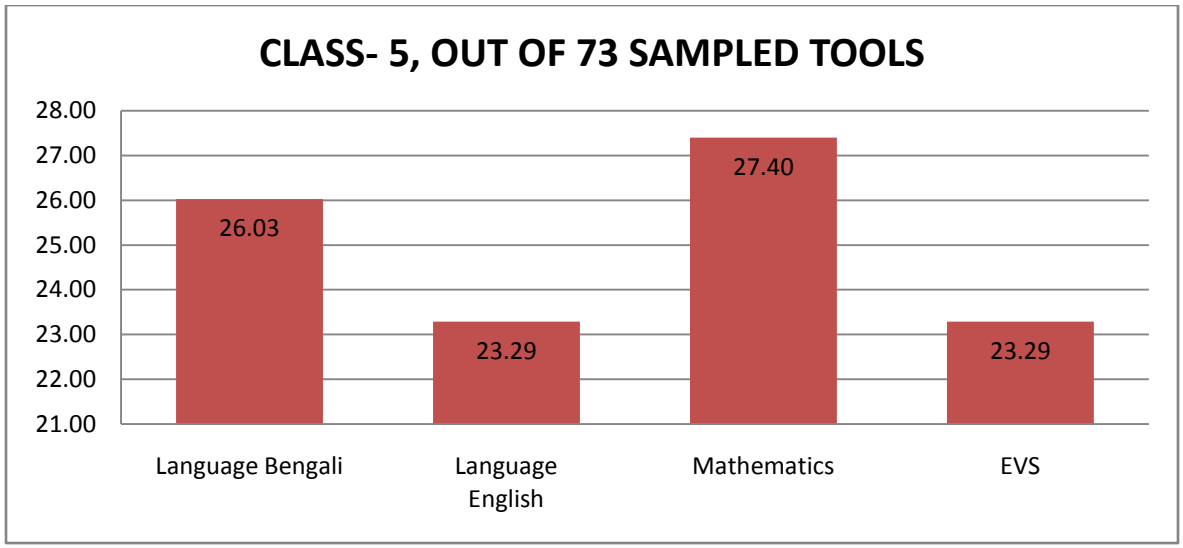
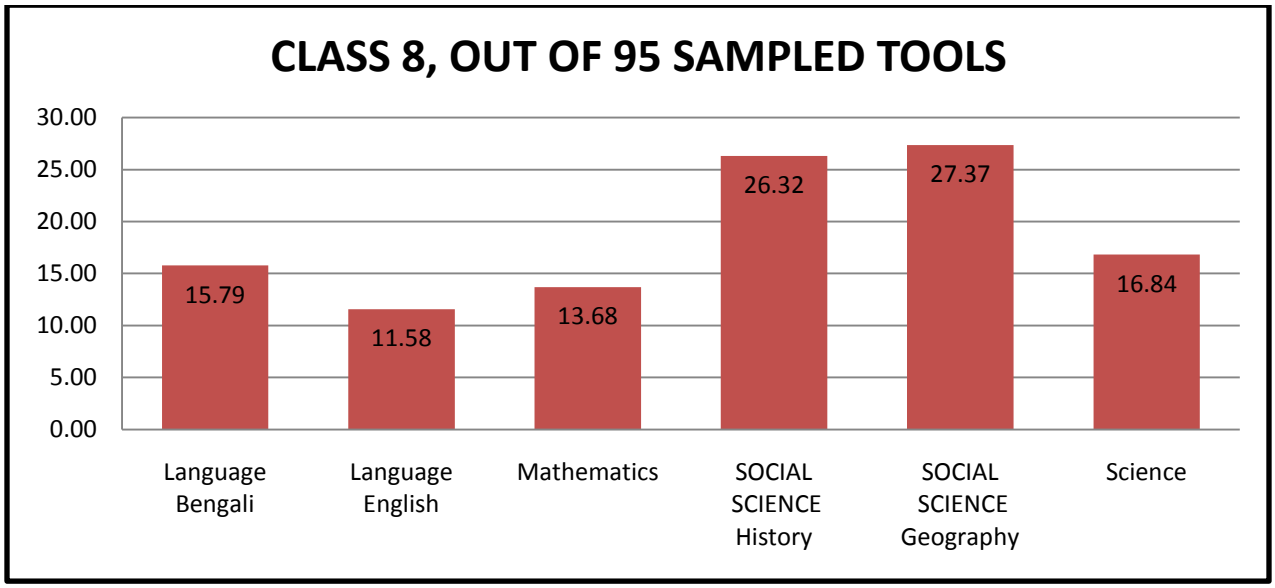


Table 8.4 Subjects of the Reviewed SET in Class 8

CLASS 8	%
Language Bengali	15.79
Language English	11.58
Mathematics	13.68
SOCIAL SCIENCE History	26.32
SOCIAL SCIENCE Geography	27.37
Science	16.84

Figure 8.3: Percentage of Reviewed Summative Evaluation Tests for Class 8



8.4 METRIC USED IN ASCERTAINING SUITABILITY OF SET

The principle followed while deriving a metric for ascertaining the suitability of the SET collected from all the surveyed schools is as follows:

1. Judging the suitability of the tools the reviewers have selected the following number of SET in different grades:

Table 8.5: Numbers of SET reviewed gradewise

		Bengali	English	Mathematics	EVS	Social Studies	Science
Class	3	23	24	15	22	-----	-----
Class	5	19	17	20	17	-----	-----
Class	8	15	11	13	------	Geography- 25 History- 15	16

2. Tables are made by reflecting the percentage of item(s) as per their cumulative weightage in the whole paper that assess (es) one or many LOs as per NAS 2017 list of the LO in varied degree of agreement, i.e., Full agreement [F(>80%)], Partial agreement [P(80%>P>30%)]
 and No agreement [N (<30%)].
 This has been done for each school and for each subject in the surveyed schools.

3. Such Tables have been prepared for all this surveyed 90 schools from which the sample SETs were obtained.

4. For each class of 3, 5 and 8, around 30 such Tables have been made which reflect varied

percentage of agreement or non-agreement of items for each subject.

Say the SET from Schools 1 has X_1% of items that fully assess some or other LO from this list of LOs in NAS 2017. Likewise, say Schools 2 has X_2% or items,Schools 3 has X_3% ... and Schools 30 has X_{30}% items fully assessing this NAS 2017 LO. Now the Mean percentage of items assessing fully the NAS 2017 LO in all these 30 schools is calculated by

Mean % = $\left(\sum Xi/N\right)\times 100$, where i = 1,2,...30

N= Total number of reviewed schools, here 30.

5. The mean is thus calculated over all the schools with respect to each category viz. Full Match, Partial Match and No Match.

   This Mean % is reflected in the table below "Mean % weightage of items which evaluate learner achievement as per NAS 2017 LO...." for each subject reviewed and for each class under survey.

Table 8.6: Degree of agreement (in Mean % over all reviewed schools) to which the Tests evaluate the learners' achievement as per LO of NAS 2017 held in Class 3

SUBJECT	**Mean % weightage of items which evaluate learner achievement as per NAS 2017 LO in full agreement**	**Mean % weightage of items which evaluate learner achievement as per NAS 2017 LO in partial agreement**	**Mean % weightage of items which do not assess the NAS 2017 LO**
Bengali	2.96	0	92.7
English	6	67	89.17
Mathematics	31.13	10.03	52.83
EVS	8.43	91.57	0

Note: The percentages in Table 8.5, for a particular subject *may not add up to 100%* since:

i. One Item in a Test can "fully agree" with some LO while "partially agree" with some other, at the same time.

ii. Conversely, there may be several Items in a Test which evaluate the same LO, with varied degree of agreements.

Figure 8.4: Bar Graph for Table 8.5

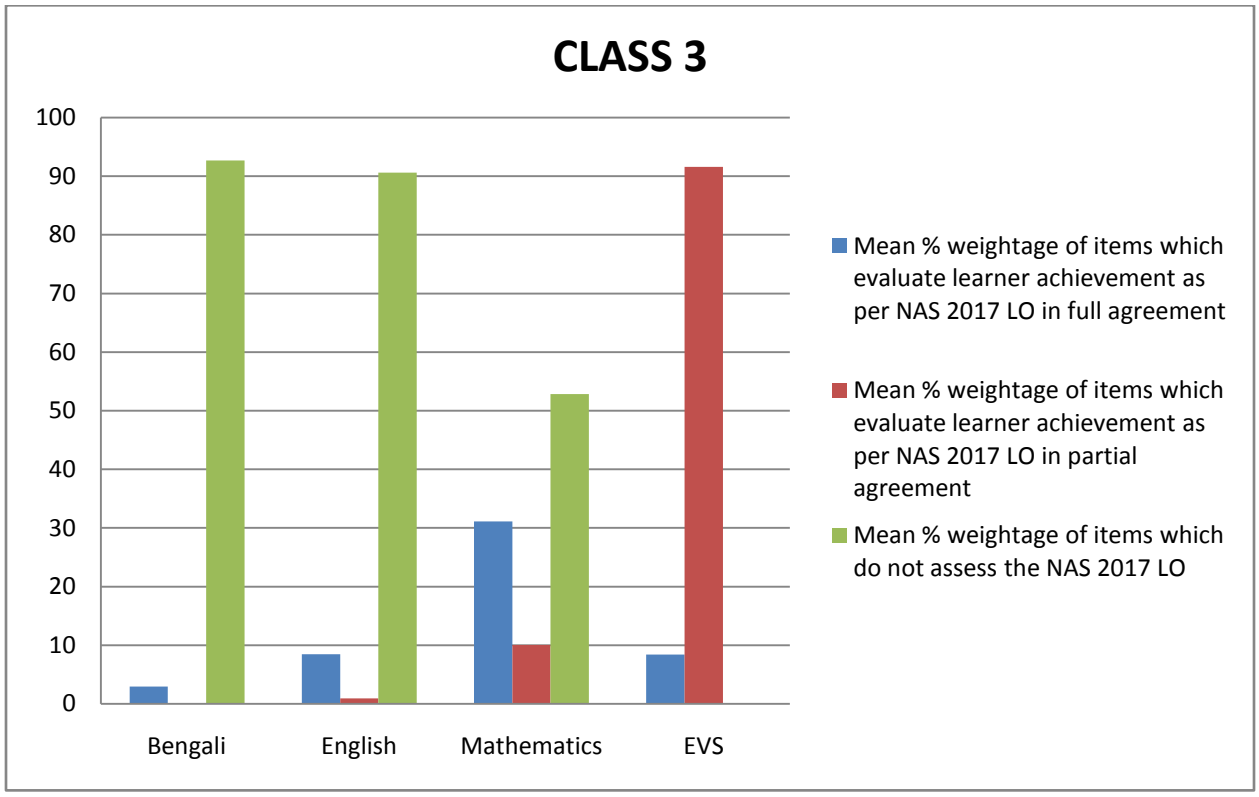


Table 8.7: Degree of agreement (in Mean % over all reviewed schools) to which the Tests evaluate the learners' achievement as per LO of NAS 2017 held in Class 5

SUBJECT	Mean % weightage of items which evaluate learner achievement as per NAS 2017 LO in full agreement	Mean % weightage of items which evaluate learner achievement as per NAS 2017 LO in partial agreement	Mean % weightage of items which do not assess the NAS 2017 LO
Bengali	0	0	100
English	15.41	23.18	62.59
Mathematics	34.82	6.93	58.24
EVS	49.05	37.29	14.53

Figure 8.5: Bar Graph for Table 8.6

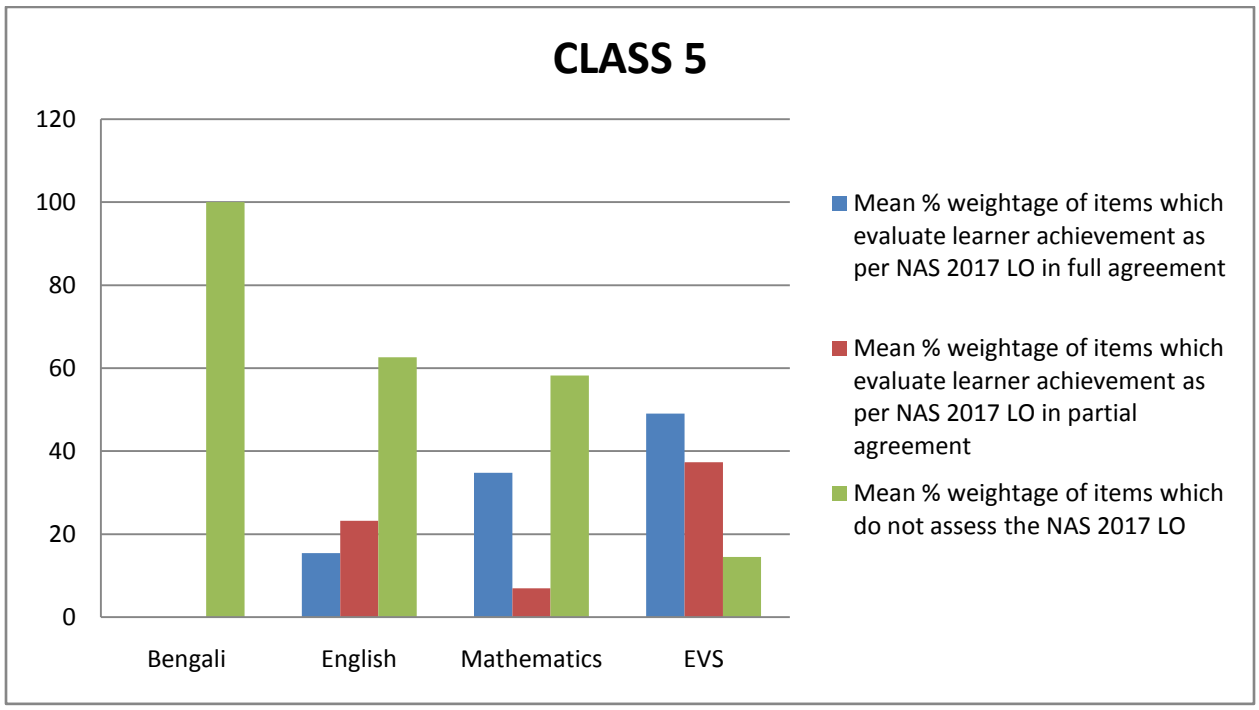
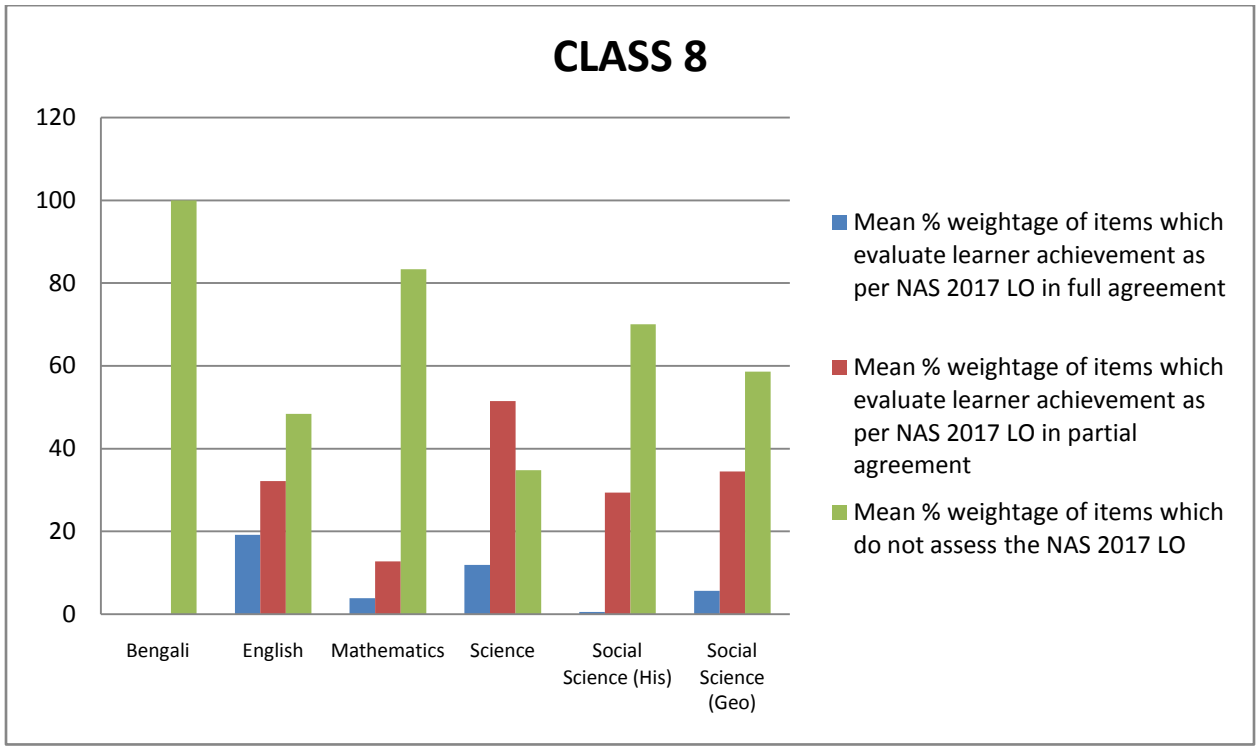


Table 8.8: Degree of agreement (in Mean % over all reviewed schools) to which the Tests evaluate the learners' achievement as per LO of NAS 2017 held in Class 8

SUBJECT	Mean % weightage of items which evaluate learner achievement as per NAS 2017 LO in full agreement	Mean % weightage of items which evaluate learner achievement as per NAS 2017 LO in partial agreement	Mean % weightage of items which do not assess the NAS 2017 LO
Bengali	0	0	100
English	19.15	32.15	48.42
Mathematics	3.83	12.79	83.38
Science	11.89	51.52	34.8
Social Science (History)	0.57	29.35	70.08
Social Science (Geo)	5.63	34.49	58.63

Figure 8.6: Bar Graph for Table 8.7



8.5 HIGHLIGHTS OF THE ANALYSIS

- In class 3 only 2.96% as per items weightage in the Summative Evaluation Tests in Bengali, have full agreement with NAS 2017 LO. The same in English, Mathematics and EVS are 6%, 31.13% and 8.43% respectively.
- In class 3, almost all the Summative Evaluation Tests in EVS assesses the LO as per NAS 2017 LO either fully or partially.
- In class 5 none of the items in the Summative Evaluation Tests in Bengali assesses the NAS-2017 LO, but 15.41% weightage of the Summative Evaluation tools in English have full agreement with NAS 2017 LO.
- In class 5 nearly 43% weightage of the items in the Summative Evaluation Tests in Mathematics were developed at assess LO as in full agreement.
- In class 5 approximately 86% weightage of the items in the Summative Evaluation Tests in EVS assess the NAS 2017 LO either fully or partially.
- In class 8 none of the items in the Summative Evaluation tools in Bengali assesses the NAS 2017 LO but 52% weightage of the items in the Summative Evaluation tools in English have items developed to assess NAS 2017 LO in full or partial agreement.
- In class 8 none of the items in the Summative Evaluation tools of Mathematics assess the NAS 2017 LO.

8.6 COMMENTS BY THE REVIEWERS OF STATE EVALUATION TOOLS

- Text book should be developed in the light of grade-specific and subject-specific Learning Outcomes.
- A guideline may be developed and circulated to the schools so that they can be used to prepare tools, tests and items with desired LO.
- Teacher Orientation programme on LO must be conducted for every teacher in our state.
- Subject wise and class wise LO should be distributed among the learners, teachers and guardians at the beginning of a new session. The outcome of which should be discussed and monitored by the competent authority.
- Work-sheet or sample/Model questions (tools) developed in the light of Learning Outcomess may be provided at the chapter-end exercises of the text books (chapter wise comprehension/understanding based items).
- Workshops on item designing may be arranged by the state for grooming expertise on item development for each subject.

Chapter 9

SCOPE OF FURTHER STUDY

9.1 LIMITATIONS OF THE STUDY

The present study was primarily aimed to perform– within a short time, and hence in a small sample – a process mapping of the pedagogy in elementary education in our state, and to present a report along with recommendations to the Government in the light of study findings. Toward this end, though the research team has put in a sincere, synchronised and co-ordinated effort, the following enlists the areas which could have been addressed differently:

- Sampling of districts and schools could be made more systematically and without bias so that the sample could be of more representative nature.
- A larger school sample could have made the results of the survey statistically more appropriate.
- The Tools could be further standardised through Field Trials and subsequent adaptations and modifications, although the Tools were validated by experts before being administered in the survey.
- Due to extreme time constraints and intervening vacation plans of the teachers, the Resource Pool of teachers that SCERT (WB) worked with could not be adequately constituted so as to have subject wise, class (3/5/8) wise school teachers in the specific groups.
- The Textbooks procured for review and analyses– particularly for CBSE and CISCE – were those which were then available in the open market. Neither adequate variants nor time were available to ascertain the quality of the texts used in review. Further, a market search carried out within our means could not find if there are textbooks, either directly published or rendered authentication to privately published ones by the CISCE or the CBSE.
- The present study has only employed a few mathematical operations for analysing the data. Due to constraint in available time qualitative data analyses and inferential statistics could not be performed.

9.2 SCOPE OF FURTHER STUDY

Though limited in its scope and implement, the present study bears ample pointers so that the following studies may be taken up as natural follow-through toward a greater understanding of state of elementary education in West Bengal, and thereby looking for ways and means toward its improvement:

A. To study the efficacy of the existing school texts published by the state authorised agencies in West Bengal for achieving grade specific Learning Outcomes as published by the state.
B. A comparative study on the efficacy between the uses of Tests developed collaboratively and maintained in a central repository for evaluating achievement of learners in our state in the light of predefined Learning Outcomes and that developed and/or procured by individual schools.

Chapter 10

RECOMMENDATIONS IN THE LIGHT OF STUDY FINDINGS

10.1 FINDINGS OF THE STUDY

The Learning Outcome document was published by NCERT in April, 2017 and the State Learning Outcome document titled, "***Expected Learning Outcomes at the Elementary Level***" was developed by the Expert Committee on School Education, Govt. of West Bengal in April, 2018. The current curriculum / syllabus for WBBPE (Primary School Curriculum and Syllabus) and WBBSE (Upper Primary School Curriculum and Syllabus) were published in the year 2014. The text books that are presently being used in the schools of the state were developed on the basis of the curriculum / syllabus that was published in 2014. All the state text books that were used for assessing the extent of alignment with the National LOs were printed before the publication of the State Learning Outcomes.

The CISCE document on curriculum containing Learning Outcomes was published in November, 2016. Since no designated textbooks published by CISCE were available, the books that were available in the market and are presently being taught in the schools affiliated to CISCE, were used for the study.

The NCERT Learning Outcomes were compared with the textbooks of the Central Board of Secondary Education (CBSE) for classes 3, 5 and 8. The LOs and curricula / syllabi of the Board for specified classes were assumed to be the same as that of NCERT LOs.

The findings of the study are listed below -

- The state average is higher than the national average in all subjects for class 3 and in Mathematics for class 5. The state average is lower than the national average in all subjects for class 8. Thus a declining trend is seen in the performance of the students from class 3 to class 8.

- The percentage of students achieving in the higher range (above 75%) decreases from class 3 to class 8.

- In NAS 2017, the performance of the students of classes 3, 5 and 8 has been found to be in the higher range for the district of Kolkata compared to the other districts. This is also true for the districts of Coochbehar and Purba-Bardhaman for class 3 and also the districts of Purba-Medinipur and South 24 Parganas for classes 5 and 8.

- In NAS 2017, the performance of the students of classes 3, 5 and 8 has been found to be in the lower range for the district of Jalpaiguri. On the same note the performance of district of Uttar Dinajpuris low in case of classes 3 and 8. This is also true for Siliguri for class 3, Birbhum for class 5 and Purulia for class 8.

- For class 3,the percentage of complete alignment of Learning Outcomes (LOs) published by NCERT with those followed by the state of West Bengal is the highest for Mathematics (63%) and the percentage of partial alignment is the highest for Bengali (69%). The percentage of no alignment is almost the same for subjects viz., Language (English and Bengali), Mathematics and EVS which is in the range of 20% -26%.

- For class 5, the extent of complete alignment of the NCERTLOs with that of the state is the highest for English (47%) and the percentage of partial alignment is the highest for EVS (69%). The percentage of no alignment is the highest in Mathematics (31%).

- For class 8, the percentage of complete alignment between the NCERT and state LOs is the highest for Science which is only 26%.At the same time the percentage of partial alignment is also seen to be the highest (73%)in Science. The percentage of no alignment is the highest in Mathematics (52%).

- For class 3**,** the percentage of complete alignment between NCERT LOs and the state textbooks is the highest for Mathematics (63%) and the percentage of partial alignment is the highest for EVS (73%). The percentage of no alignment is the highest in Bengali (54%).

- For class 5, the percentage of complete alignment between NCERT LOs and the state textbooks is the highest for Mathematics (50%) and the percentage of partial alignment is

the highest for Bengali (62%). The percentage of no alignment is the highest in English (21%).

- For class 8, the percentage of complete alignment between NCERT LOs and the state textbooks is the highest for Bengali (60%) and the percentage of partial alignment is the highest for Science (73%). The percentage of no alignment is the highest in History (52%).

- While comparing curriculum / syllabus of the state with the NCERT Los for class 3, it is seen that the percentage of complete alignment is the highest for Bengali (61%) and the percentage of partial alignment is the highest for English (71%). The percentage of no alignment is the highest in EVS (33%).

- Again while comparing the state curriculum / syllabus for class 5 with that of NCERT LOs, the percentage of complete alignment is the highest for Mathematics (75%) and the percentage of partial alignment is the highest for Bengali (81%). The percentage of no alignment is the highest in English (37%).

- For class 8 when the curriculum / syllabus was compared with the NCERT LOs, the percentage of complete alignment is the highest for Science (40%) and the percentage of partial alignment is the highest for Bengali (75%). The percentage of no alignment is the highest in English (59%).

- If we see the parity among NCERT LOs and their reflection in state textbooks and curriculum / syllabus for a particular subject for class 3, the highest parity is shown in EVS, followed by Mathematics. For class 5, the highest parity is shown in Mathematics, followed by EVS. For class 8, the highest parity is seen in Science.

- In case of LOs of CISCE for class 3, the percentage of complete alignment with the NCERT LOs is the highest for Mathematics (68%) and the percentage of partial alignment is the highest for English (64%). The percentage of no alignment is the highest in EVS (67%).

For class 5, the percentage of complete alignment is the highest for Mathematics (87%) and the percentage of partial alignment is the highest for English (100%). The percentage of no alignment is the highest in EVS (77%).

For class 8, the percentage of complete alignment is the highest for Mathematics (81%) and the percentage of partial alignment is the highest for Science (53%). The percentage of no alignment is the highest in Social Science (81%).

- It is seen that for CISCE textbooks of class 3, the percentage of complete alignment with that of NCERT LOs is the highest for Mathematics (89%) and the percentage of partial alignment is the highest for EVS (20%). The percentage of no alignment is the highest in EVS (73%).

  For class 5, the percentage of complete alignment is the highest for Mathematics (81%) and the percentage of partial alignment is the highest for EVS (23%). The percentage of no alignment is the highest in EVS (77%).

  For class 8, the percentage of complete alignment is the highest for Mathematics (86%) and the percentage of partial alignment is the highest for Bengali (72%). The percentage of no alignment is the highest in Social Science (78%).

- For CISCE curriculum / syllabus of class 3, the percentage of complete alignment with the NCERT LOs is the highest for Mathematics (58%) and the percentage of partial alignment is the highest for English (50%). The percentage of no alignment is the highest in EVS (53%).

  For class 5, the percentage of complete alignment is the highest for Mathematics (81%) and the percentage of partial alignment is the highest for English (68%). The percentage of no alignment is the highest in EVS (85%).

  For class 8, the percentage of complete alignment is the highest for Mathematics (86%) and the percentage of partial alignment is the highest for Science (53%). The percentage of no alignment is the highest for Social Science (81%).

- If we see the NCERT LOs and their reflection in CISCE textbooks and curriculum / syllabus for a particular subject, the highest parity is shown in Mathematics, followed by English for class 3. For class 5, the highest parity is shown in Mathematics, followed by English and the nonalignment is maximum for EVS. For class 8, the highest parity is

shown in Mathematics, followed by English. The highest nonalignment is seen in case of Social Science for the same class.

- In case of CBSE textbooks of class 3, the percentage of complete alignment with that of NCERT LOs is the highest for Mathematics (100%) and the percentage of partial alignment is the highest for EVS (73%). The extent of no alignment is observed to be nil in all the subjects.

  For class 5, the percentage of complete alignment is the highest for Mathematics (87%) and the percentage of partial alignment is the highest for EVS (92%). The percentage of no alignment is the highest in English (10%).

  For class 8, the percentage of complete alignment is the highest for Mathematics (86%) and the percentage of partial alignment is the highest for Science (87%). The percentage of no alignment is the highest in English (30%).

- If we see the parity among NCERT LOs and their reflection in CBSE textbooks for a particular subject, the highest parity is shown in Mathematics followed by English for classes 3 and 5. For class 8, the highest parity is seen in Mathematics followed by Bengali.

- The state textbooks of class 3 are more or less aligned to the tested LOs of NAS 2017. For class 5 it is partially aligned to the tested LOs of NAS 2017. In case of class 8, English, Bengali and Geography are partially aligned to the tested LOs of NAS 2017, but Mathematics, Science and History show increasing nonalignment with the tested NAS LOs.
- It is seen for the state textbooks that the extent of complete alignment is decreasing from class 3 to class 8 for English and Mathematics. For EVS (class 3, 5) and Science (class 8), the extent of the partial alignment of the tested LOs with the textbooks is on the higher side.

- In case of LOs tested in NAS 2017 where performance of students is below the national average, the state textbooks of class 5 show 100% partial alignment in case of English and Bengali whereas in case of Mathematics the extent of partial and complete alignment is 50% and 33% respectively. For EVS, it is seen that for complete and partial alignment, the extent is 50% each in the state textbooks.

In case of class 8, the state textbooks show100% partial alignment for English, Bengali and History whereas in case of Mathematics the extent of partial and complete alignment is 23% and 59% respectively. In spite of the fact that higher value in complete alignment exists in Mathematics, the performance of the students in 17 of the tested LOs is below the national average. For Geography and Science, the performance of the students in 5 out of 8 and 9 out of 12 tested LOs is below the national average though partial alignment to the extent of 80% and 44% respectively exists in the state textbooks.

- The opinions as made by the heads of the school in the School Questionnaire (SQ) are delineated below-

  - 67% of the primary Head Teachers and 53% of the secondary Head Teachers said that they were not aware about LOs.

  - 70% of Head teachers of primary schools said that the school activity was affected by inadequacy of ICT resources. 63% of them said that shortage of support staff also affected school activity.

    For secondary schools,68% and 63%of the Head teachers said that school activity was affected by shortage of teaching staff and support staff respectively. 60% of the respondents said that shortage of subject-specific teaching staff also affected school activity.

  - 63% of Head teachers of Primary schools and 25% of Head teachers of Secondary schools said that the question papers for summative evaluation were procured from outside.

  - About 60% of the Head teachers in both primary and secondary schools stated that the question papers procured by the school from outside test and evaluate the attainment of LOs by the students.

  - Almost all the respondents are of the opinion that an orientation is required for developing expertise on designing standardized LO attainment tests.

- 83% of the respondents are of the opinion that using standardized test materials from a central repository (CLRC / CRC) will be helpful in determining the attainment of LOs.

- The main challenges as cited by the Heads of the institutions are being overburdened with other responsibilities (70–80%), lack of infrastructural facilities (about 70%), absenteeism of students (60–70%), no orientation received on current pedagogical practices (60% for primary schools & 42% for secondary schools) and allocation of resources (50 - 60%).

- The opinions as given by the surveyed teachers of the school in the Teachers' Questionnaire (TQ) are mentioned below-

  - 90%, 77% and 60% of the teachers for classes 3, 5 and 8 respectively said that they have not attended any training as a subject teacher on the subjects taught by them in the last two years.

  - Only 7% of the surveyed teachers said that they knew about the LO document published by NCERT. Again only 3% of class 3 teachers, 10% of class 5 teachers and 17% of class 8 teachers had knowledge about LO document published by the State Agency.

  - Only 3% of class 3 and 10% of both class 5 and class 8 surveyed teachers have said that they have attended training programme on LOs.

  - Most of the teachers (93-97%) said that there were resources / supportive environment for carrying out classroom discussion and problem solving. The existence of supporting resources for carrying out ICT related activities was agreed upon by only 23% of class 3 teachers and by 50% teachers of classes 5 and 8.

  - The main challenges that emerge from the inputs given by the surveyed teachers of all the three classes are absenteeism of students, lack of infrastructural facilities and having no orientation on emerging pedagogical issues. For teachers of classes 5 and 8, large class size is also one of the major challenges.

- Following are the observations of the surveyed students which have been gathered from the Pupil's questionnaire (PQ)-

  - About 84% of the surveyed students of classes 3, 5 and 8 said that the language used in school is the same as the language spoken at home and according to about 97% of these students they can comprehend the language used by the teacher.

  - 74% of the surveyed students of class 3 said that they can connect lessons with real life experiences. This percentage decreases progressively as we move to the higher classes.

  - 66 - 73% of the surveyed students (of classes 3, 5 and 8) said that they regularly take part in classroom activities and 47 - 58% of these students said that they ask questions in the class regularly.

  - 14 to 18% of the students of classes 3 and 5 and 43% students of class 8 stated that they get books / materials from school library.

  - The percentage of the students which said that they discuss and share at home the lessons taught in classrooms decreases from 82% in class 3 to 75% in class 8.

  - 82 - 86% students of the three classes are able to take up the class work or homework assigned to them.

  - 35% students of class 3, 26% students of class 5 and 45% students of class 8 said that they are encouraged by the teacher to collect materials and/ develop TLMs.

  - 42% students of classes 3 and 8 and 32% of students of class 5 stated that they work in groups in the class while doing activities.

  - The percentage of students mentioning that ICT is used in the classroom increases from class 3 (15%) to class 8 (30%).

- From the Classroom Observation Schedule (COS), following are the findings about the teaching learning processes -
  - For class 3, 80% of the classrooms and for class 8, 90% of the classrooms had adequate seating space. This percentage decreases in class 5 (73%).
  - The use of teaching aids in classrooms is seen to decrease from class 3 (50%)to class 8 (37%).
  - The teachers of all the observed classes (3, 5 and 8), spend about 13% of the total time for imparting lessons on introductory steps to break ice which help in drawing students' attention to the ongoing class, the maximum time being spent on asking of probing questions.

    Corresponding to this teacher's activity, on an average, 69-74% students of the three classes were involved in getting ready for class,50% of classes 3,5 and 69% of class 8 students are seen to be engaged in listening attentively and around 50% students are seen to be responding to questions / instructions.
  - On an average, the teachers spend increasing percentage of the time for imparting lessons on recapitulation of previous lessons from class 3 (12%) to class 8 (22%).

    Corresponding to this teacher's activity for the three classes, on an average, 45-48% students of were involved in recalling, 35-41% students were engaged in identifying and 36 - 43% of the students were engaged in correlating.
  - The teachers spend the maximum time (55% in class 3 and 47% in classes 5 and 8) for engaging students in the day's lesson.

    Corresponding to this teacher's activity, on an average, 53-59% students of classes 3 and 5 and 25% of students of class 8 participated in loud reading,52-59% students got engaged in activities,41- 51% of the students were engaged in responding to teacher's instruction and 41–43% students answered questions. The percentage of students putting up questions to the teacher is 23, 46 and 39 for classes 3, 5 and 8 respectively.
  - The teachers spend 31- 43% of the total time for discussion on content and its explanation. The percentage shows an increasing trend from class 3 to class 8.

    The percentage of students taking notes decreases from class 3 (60%) to class 8 (51%). 35 - 39% students of the three classes were involved in relating knowledge with previous

experiences. The trend of asking questions increases from class 3 (28%) to class 5 (59%) and class 8 (53%).

- The teachers spend 19 - 26% of the total time for exchange with the students through different modes.

  Corresponding to this teacher's activity, on average, 46-48% students of classes 3 and 5 67% students of class 8were engaged in peer interaction. 40-45% students of the three classes were involved in interaction with the teacher and 42 -55% students of classes 5 and 8 are engaged in debate.

- The teachers of the three classes spend 27 - 31% of the total time for proper use of relevant teaching aids.

  On an average, 46 - 48% students of the three classes were engaged in interaction on the teaching aids used.

- On an average, the teachers spend 1-4% of the total time on using designed worksheet involving students.

  Corresponding to this teacher's activity, on an average, 90% students of classes 3 and 8 were engaged in working on the worksheets in groups. Students solving the worksheets individually for classes 3 and 5 is 78% and 55% respectively.

- In all the three classes, it is found that there is no appropriate pedagogical use of relevant ICT in classroom.

- The teachers of class 3 spend 12% of the total time and that of classes5 and 8 spend 3 – 4% of the total time on inclusive strategies.

- The teachers of the three classes spend 12 - 14% of the total time for inbuilt assessment.

  Corresponding to this teacher's activity, on average, 46 - 47% students participated in assessment.

- The teachers of class 3 spend 24 % and the teachers of classes 5 and 8 spend 12 - 16 % of the total time on efforts to make the learning joyful.

Corresponding to this teacher's activity, on an average, 45-50% students were spontaneously involved in the classroom processes.

- The teachers of class 3 spend 18% and the teachers of classes 5 and 8 spend 14% and 8% of the total time respectively on connecting knowledge with real life situation.
  Corresponding to this teacher's activity,33-46% and 31-35% of the surveyed students of classes 3, 5 and 8 were involved in citing examples and solving problems respectively. For class 3, 25% surveyed students raised questions/issues. Again 42% and 15% students of classes 5 and 8 were involved in the same.

- In class 3 only 2.96% as per items weight age in the Summative Evaluation Tests in Bengali, have full agreement with NAS 2017 LO. The same in English, Mathematics and EVS are 6%, 31.13% and 8.43% respectively.
- In class 3, almost all the Summative Evaluation Tests in EVS assesses the LO as per NAS 2017 LO either fully or partially.
- In class 5 none of the items in the Summative Evaluation Tests in Bengali assesses the NAS-2017 LO, but 15.41% weight age of the Summative Evaluation tools in English have full agreement with NAS 2017 LO.
- In class 5 nearly 43% weight age of the items in the Summative Evaluation Tests in Mathematics were developed at assess LO as in full agreement.
- In class 5 approximately 86% weight age of the items in the Summative Evaluation Tests in EVS assess the NAS 2017 LO either fully or partially.
- In class 8 none of the items in the Summative Evaluation tools in Bengali assesses the NAS 2017 LO but 52% weight age of the items in the Summative Evaluation tools in English have items developed to assess NAS 2017 LO in full or partial agreement.
- In class 8 none of the items in the Summative Evaluation tools of Mathematics assess the NAS 2017 LO.

10.2 RECOMMENDATIONS

Following are the recommendations in the light of the study findings-

- A declining trend is seen in the performance of the students in NAS 2017 from class 3 to class 8. The percentage of students achieving in the higher range (above 75%) decreases from class 3 to class 8. Therefore, necessary measures as stated below may be taken by the state to improve the performances of the students especially in the upper primary level.
- The districts showing low performance in NAS 2017 should take up appropriate interventions so as to enhance the performances of their students to the desired level.
- The NCERT LO document was published in April, 2017 and the State LO document was published in April, 2018. The current curriculum / syllabus for WBBPE and WBBSE was published in the year 2014 on the basis of which the text books that are presently being used in the schools were developed.

  It has been observed that for the classes 3, 5 and 8 there is a varying degree of alignment of the state LOs with those published by NCERT for each of the subjects tested in NAS 2017. Since the performances of the state are measured by conducting the national level achievement test like NAS following a nationally developed set of LOs it is imperative that the state needs either to adopt or to suitably adapt those LOs in pedagogic practices followed in its schools.
- For other classes and subjects too, the state may assess the extent of alignment between state and NCERT LOs and accordingly take requisite measures.
- In case of the state curriculum/syllabus for the classes 3, 5 and 8, it is seen that the degree of alignment with the NCERT LOs varies for each of the subjects tested in NAS 2017.

  The same trend is visible in the textbooks developed by the state.

  The state may decide whether the alignment of curriculum/syllabus and textbooks of the state with those published by NCERT can be maximized.
- The state may think on similar lines regarding curriculum/syllabus and textbooks for subjects of remaining classes i.e. apart from classes 3,5 and 8.
- A revised state document on curriculum/syllabus with mention of Learning Outcomes and also with suggested pedagogical process for classroom transaction may be published by the state.

- State may also consider publishing revised textbooks for children with the mention of Learning Outcomes at the beginning of each chapter for all subjects and for all classes.

- Worksheets or sample model questions developed in the light of Learning Outcomes may be provided at the end of the chapter of the textbooks.
- The state may consider taking appropriate initiatives in various modes for the students in case of those LOs in which their performances are lower than the national average in NAS 2017 so that the desirable Learning Outcomes may be attained.
- Dissemination and creation of awareness about the Learning Outcomes among different target groups (students, parents and community members) may be carried out in the state.
- The teachers including the Head teachers of both primary and secondary schools need both extensive and intensive orientations on Learning Outcomes.
- Orientation programmes may be conducted for development of expertise of the teachers on designing standardized LO attainment tests.
- The use of standardized test materials from a central repository (CLRC / CRC) is considered to be helpful by the teachers in determining the attainment of LOs. The state may take up necessary steps like providing regular orientation to the resource persons for continuous development of standardized items . Further guidelines may be developed and circulated to the schools so that they can be used to prepare tools, tests and items with desired LOs.
- Training of the teachers on subjects taught by them in schools may be organized by the state so that they are in tune with the emerging pedagogical issues related with the subjects.
- Observation of classroom transaction processes reveals that the use of appropriate teaching aids is minimum in the class. Therefore to make the teaching leaning processes more effective, extensive use of teaching aids including worksheets in the class may be encouraged.
- Appropriate pedagogical use of relevant ICT in classrooms may be undertaken so as to enable the students to learn in an effective manner.

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