



A REPORT ON

**Enhancement Of
Learning Achievement in
SECONDARY EDUCATION IN
SIKKIM**

FOR
HUMAN RESOURCE DEVELOPMENT DEPARTMENT
GOVERNMENT OF SIKKIM



Acknowledgement

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Director,
For Bhoomi Educational Consultancy Pvt. Ltd.



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EXECUTIVE SUMMARY

In Secondary Education, learning level among students varies due to various reasons. Students need support to achieve their requisite learning levels to continue towards higher education. As the content that is delivered has a one size fits all approach and therefore unable to meet the differential learning levels of the students, it is essential to provide continuous support to build the competencies and bridge learning gaps so that students are able to reach their potential and do well in the Board Examination. Considering the fact that students in Class 9 have learning gaps and require support so that they are able to cope with the syllabus, the Government of Sikkim has initiated "Enhancement of Learning Achievement in Secondary Education".

Enhancement of Learning Achievement in Secondary Education addresses the goal to enhance the learning outcome of secondary students through remediation, building the capacities of teachers and provide technical support to track implementation of student learning outcomes. The aim of the project in 2017-2018 was to increase learning levels of 5138 Class 9 and 10 students in 183 schools in Sikkim over one year, build capacity of 37 State Resource Persons and 549 subject teachers in Sikkim to improve teaching practices and deliver remedial programme and provide classroom-based support to teachers to enhance the students learning at secondary level. The Remedial teaching programme consisted of three phases:1) The Diagnostic phase to assess and identify students who require Remedial teaching 2) The intervention phase where remedial teaching is implemented in the classroom 3) The evaluation phase where students were assessed at the end of the year to understand their knowledge of the Class 9 syllabus and whether they were ready for Class 10. A snapshot of the results of the Diagnostic Assessment, intervention phase and Evaluation phase is as follows.

Diagnostic phase

In this phase the Diagnostic Assessment was administered to identify the students' learning levels through a diagnostic test. The key results of the diagnosis phase is as under:

- The attendance for appearing for the Diagnostic Assessment was as high at 94.16%
- Overall performance of students recorded that the highest percentage of students are at the Junior level (81.77% in Maths, 79.6% in Science and 69.38% in English). This clearly indicates that maximum students who have attended the assessments are in the learning levels below Class 6 i.e. they have competency between Class 1-5.



- Overall, the highest percentages of students who require Remedial Teaching are from the North District. In North, 94.6% students require RT in English, 99.8% require RT in Maths, and 98.5% students require RT in Science. In the English Assessment, the highest percentage of students in Senior level is available. This shows that comparatively the competency level of English is the highest amongst all three subjects. On the other hand, the lowest percentage of students are available in Maths at the Senior level with 2.3% students in West, 4% students in South, and 0.2% students in North.

Intervention phase

The intervention phase included the capacity building of 30 State and District officials, 24 State Resource Group members, 189 Heads of institutions, 567 subject teachers in Sikkim to improve teaching practices and deliver remedial programme. The intervention phase also included the transaction of the programme in the school through teachers and was implemented for a month in the current year.

Launching of remedial teaching for secondary level begins

SE Report

GANGTOK, August 9: A two-day programme for launching of remedial teaching for secondary level and orientation on enhancement of learning achievement in secondary education organized by the State Project Office, Rashtriya Madhyamik Shiksha Abhiyan (RMSA) began at a local hotel here today. The first day program attended by HRD, SCERT and DIET officials and principals was chaired by HRD principal secretary G.P. Upadhyaya as the chief guest, a press release informs.

The main objective of the programme was to initiate remediation for academically weak students of class IX and organize winter coaching for

class X students from current academic session.

RMSA State project director M.T. Sherpa, in his address, dwelt upon the need for such initiatives to combat a pan India phenomenon of massive failures in secondary level.

The HRD principal secretary asked everyone present to take up the exercise very seriously for enhancing learning level and reducing dropout due to lack of required competency level among secondary students. He also stressed on the need to focus on achieving excellence by students rather than simply passing the examination.

The event also saw the release of guidelines on enhancement of learning achievement in secondary education by Upadhyaya.



Bhoomi Consultancy from New Delhi gave an elaborate presentation on the requirement of remedial teaching and strategy for effective implementation of the activity in the State. This was followed by the interaction and open house

discussion among the members present bringing out several new ideas that would be pivotal for framing strategy for implementation of remedial teaching and organizing winter coaching from current academic session, the release adds.

Evaluation phase

- The attendance for appearing for the Summative Assessment was as high at 91.80%. A comparison with the attendance with the Diagnostic Assessment shows a slight reduction in attendance has been observed in the East district from 93.4 % to about 90%.



- In the context of the English Assessment, 69% of students are at the Junior level in District South followed by North which has 66% at the Junior level. District East and West have 62% and 61% at the Junior level respectively.
- In the context of the Maths Assessment, 87.7% of students are at the Junior level in District South followed by North which has 84.7% at the Junior level. District East and West have 83% and 81% at the Junior level respectively.
- In the context of the Science Assessment, 81.2% of students are at the Junior level in District North followed by South which has 78% at the Junior level. District East and West have 76% and 70% at the Junior level respectively.
- The above analysis shows that more than 50% of the students have received marks from below 20 to 40 which is in Level 1 (D, E, F category) as per the CBSE marking scheme. In Maths, in all districts more than 80% of the students are at the Junior level i.e. receiving marks till 40 as per the CBSE marking scheme which means that additional support is required in Maths in all four districts.

After overall implementation of the programme followed by analysis of the Diagnostic & Summative assessment shows that a) continuous assessment plan is required to be put in place in order to ensure that students are learning and that any learning gap that exists is being bridged. b) Since the assessments were spaced out within a month of each other hence they may not show us the efficacy of the programme but, it shows very clearly that a high percentage of students do not have the competency till Class 8 and they have not been able to perform very well in Class 9 in the Summative Assessment. While the baseline results show that majority of students are at the Junior level (below Class 5), the Summative Assessment Results show us that majority of the students have received the lowest level (D, E, F) as per the CBSE marking pattern.

'Enhancement of Learning Achievement' aims to improve learning outcomes of students through sustained capacity building of State Resource Groups, Heads of Institutions and teachers and provision of high quality resources that will make it easy for teachers to deliver classes effectively for all students to comprehend.



A Report on Project “Enhancement Of Learning Achievement In Secondary Education In Sikkim”

Introduction

"In Remedial teaching, every child is given a learning experience wherein he is valued and can experience an appropriate and meaningful experience. Our success is measured not in the number served, but in the degree of change, however small the increment."

The Annual Status of Education Report (ASER)¹ 2014, shows that only 48% of students in class 5 could read text suitable for class 2. This means that every second class 5 (aged 11) student in rural India is unable to read the text every 8 year old should be able to read. The report shows that although student enrolment in elementary schools is near universal at 97%, students are progressing to secondary education without the required learning levels. This has increased enrolment and retention rates of students but many are not equipped to deal with the secondary curriculum resulting in a high risk of dropout or failure. If the students are not provided with proper support to enhance the achievement of learning levels, they will be gradually dropped out from the school before completing the compulsory education in the formal education system.

Considering the fact that it is essential to bridge learning gaps of students, the Government of Sikkim has initiated the project “Enhancement of Learning Achievement” in secondary education. The project aims to support students to achieve key competencies and concepts till Class 9 and provide with extra classes that will ensure that they are prepared for their Class 10 Board exams. It aims to address the above goal to enhance the learning outcome of secondary students through remediation, building the capacities of teachers and provide technical support to track implementation of student learning outcomes.

¹<http://www.asercentre.org/#97261>



Overview of the project

Project Title	Enhancement Of Learning Achievement In Secondary Education In Sikkim
Project Location	4 districts of Sikkim
Work Field	183 Secondary schools
Project Duration	Six Months (26 June 2017 - 31 December 2017)
Heads of Institution benefitted	189
Students benefitted	13317
Teachers benefitted	567

Objectives

The main objective of the programme was to support the students to achieve key competencies and concepts till Class 9 and students of Class 10 who are identified with learning gaps through the extra classes to ensure that they are prepared for their Class 10 Board exams. The following are the primary objectives for this project:

- Increase learning levels of Class 9 and 10 students in 183 schools in Sikkim over one year,
- to build capacity of 567 subject teachers in Sikkim to improve teaching practices and deliver remedial programme.
- to build capacity of 24 Teacher Coach /Resource Persons (RPs) for training teachers, and provide classroom-based support to teachers to enhance the students learning at secondary level.
- Increase the capacity of 189 Heads of Institutions who would academically lead the programme at the school level.

Approach and Methodology

After the launch of the programme at state level, the district authority agreed to implement the remedial teaching programme in their districts. In all 183 schools, the district authority issued the necessary directions to conduct the remedial teaching. The Remedial teaching programme consisted of three phases: A) The Diagnostic phase B) The Intervention phase C) The Evaluation phase. The following methodology was adopted in these phases.



A) Diagnostic phase

- This phase included the identification of student learning levels through a diagnostic test.
- The necessary directions from the state was issued to conduct the diagnostic assessment of the students under remedial teaching programme.
- The question paper for diagnostic assessment was based on the learning outcome² developed by the NCERT and was circulated to all the schools.
- The Diagnostic assessment was conducted for all students entering Grade 9.
- Each assessment was time bound (for upto three hours) and to be individually completed by a student. The teachers administering the assessments underwent orientation on the purpose of the assessments and expected behavioral norms from teachers and students during the assessments.
- Most questions were multiple choice questions but were based on assessing concepts, competency and application of knowledge. For each subject, the topics covered were aligned to key competencies students need to acquire till Class 8.
- Each paper was for a total of 100 marks. All papers consisted of an average of 40 questions.
- Junior level (upto grade 5) had 20 questions totaling 50 marks. Intermediate level (grades 6 to 8) had 20 questions totaling 50 marks.

Level	Grades	No of Questions	Total Marks	Recall Questions (Total Marks)	Understanding and application Questions (Total Marks)	Problem solving and HOTS Questions (Total Marks)
Junior level	1-5	20	50	10	30	10
Intermediate level	6-8	20	50	10	30	10

- The grading of the completed assessment papers was completed using the Grading Rubric provided.
- Based on the marks secured by the student we recommend the following method of grouping for remediation.

²http://mhrd.gov.in/sites/upload_files/mhrd/files/Learning_outcomes.pdf



Level 1 Marks	Level 2 Marks	Group
36 and above	36 and above	Senior Group
36 and above	Between 25-35(including 35)	Intermediate group
Between 25-35(including 35)	Between 25-35(including 35)	Junior group
Below 35	Below 35	Junior group

Any student securing less than 25 marks in either group will belong to junior group.

- In the assessment, Students were identified at 2 levels: a) Junior Group: students who have competencies below Class 5 and b) Intermediate level: students who have competencies between class 6-8 c) Senior level: Students who have competencies of Class 9

B) The intervention Phase

The programme was implemented from November To December during the programme intervention phase. The programme implementation support during 2017-2018 included the direct intervention in building the capacity of 30 State and District officials, 189 Heads of Institutions and 24 State Resource Persons who were instrumental in training 567 teachers who delivered the Remedial Teaching Programme in the classroom.

In the intervention phase, students received high-quality instruction in the classroom. The classroom instruction recalled prior competencies connected to chapters in Class 9. Workbooks were given to all the students and they enjoyed using the workbooks. Due to paucity of time in 2017-2018, the teachers were unable to complete the entire syllabus designed for remediation. But schools reported that they have been able to commence with the programme and the programme has captured the interest of both students and teachers.

Teacher Comments

In order to impart minimum level of learning for the weak students, as per the directives of the competent authority of HRDD, Govt. of Sikkim, remedial classes were given from the month of September, 2017 till the first week of the commencement of 2nd Term Examination 2017. The remedial classes were given after conducting Diagnostic (Baseline) Assessment on the Mathematics, English and Science subjects. The classes were given to only those students who were assessed under junior group. Altogether 120 odd students attended remedial classes in Mathematics and Science, whereas 46 students were taken for English Remedial Coaching. Everyday zero period of 45 minutes as duration were created before the regular classes for the smooth running of remedial classes. The students were supported to complete certain key



sessions of the workbook. Despite the shortage of time the remedial classes were fruitful to some extent considering the result achieved in the baseline Diagnostic test. In the Annual examination most of the students acquired at least the desired competencies that were reflected in their term- end progress reports.

The filled-in Workbooks have been retrieved from the students and kept in the school. It is felt that the remedial classes might be more useful if these could have been conducted from lower standard or classes and some reward and appreciation were given to the successful students for their encouragement.

Lakpa Gyalpo Tamang

Principal

Govt. St. Sec. School

Namchi, South Sikkim

C) Evaluation Phase

- In this phase, students' learning levels was assessed on their grasp of the Class 9 syllabus.
- The evaluation was done through the summative assessment of the children. The Summative assessment was a terminal assessment at the end of the instruction year designed to assess the knowledge of the students at the end of Class 9.
- The aim of the assessment was two-fold- a) to assess the students' knowledge and learning level at the end of the academic year in Class 9 b) acquire student results to design enrichment programmes in the beginning of Class 10 to enhance student learning and knowledge and bridge learning gaps of Class 10 students.
- The Summative Assessment was based on the syllabus of Class 9 and followed the test pattern as designed by CBSE and was in the form of a pen-paper test conducted by the schools themselves. It was conducted at the end of the term.
- In order to ensure standardisation, and to ensure uniformity, the Question papers were prepared at the State level for different subjects and was forwarded to schools
- Evaluation of answer scripts was done by the school teachers themselves on the basis of the Marking Scheme provided along with the Assessment papers. The Assessments were collated at the District level and forwarded to the state. The following marking scheme was followed by the State:



Marks Range	Grade	Grade Point	
91-100	A1	10	Level 3 (Senior)
81 - 90	A1	9	
71 -80	B1	8	
61 -70	B	7	Level 2 (Intermediate)
51 -60	C1	6	
41 -50	C	5	Level 1 (Junior)
33-40	D	4	
21 – 32	E	3	
20 and below	F	2	

It is pertinent to mention here that the comparison of the Diagnostic Test and the Summative Test was not achievable as the test patterns was designed differently for both the Assessments. While the former was designed to assess learning levels of Class 9 students in three categories- learning level below Class 5, between 6-8 and above Class 8, the Summative assessment was designed to assess students on the Class 9 syllabus and assess their knowledge of the same. In the current year, they were designed in a continuum to check whether students who lack key competencies till Class 8 are able to comprehend Class 9 syllabus.

Key Findings

After completing the diagnostic Phase, the intervention phase and the evaluation phase, following key results have been observed.



A. Key results of Diagnostic Phase

I. **Total Enrolment and Overall attendance:** Enrolment refers to the total no of students in each of the districts that reflect the total student strength. The following are the enrolment of all four districts with the highest enrolment in East district (6029) and the lowest in North District (621). Attendance refers to the total no of students who have attended the assessment tests in the respective districts. An overall attendance has been calculated for each district & subject below.

Table: 1.1: Enrolment & Attendance on the basis Subjects & Districts (Baseline)

Baseline	Enrolment	English	Maths	Science	Average Attendance (District wise)	Attendance Percentage
East	6029	5634	5634	5634	5634	93.40%
West	3439	3275	3275	3275	3275	95.23%
South	3228	3025	3025	3025	3025	93.70%
North	621	606	606	606	606	97.58%
Total	13317	12540	12540	12540	12540	94.16%

Observation: Table 1.1 depicts the enrolment & the attendance of students for the Diagnostic assessment. The Attendance percentage is calculated over the enrolment for each district. The following are the attendance in each of the districts:

- In East District, 93.4% students attended English, Maths and Science assessments
- In West District, 95.23% students attended English, Maths and Science assessments
- In South District, 93.70% students attended English, Maths and Science assessments
- In North District, 97.58% students attended English, Maths and Science assessments
- The attendance percentage is highest in the North district at 97.58% followed by the West at 95.23%. The overall percentage is also high at 94.16%.

Inference:

- The North district being in the urban area has the highest attendance percentage.
- Since the overall attendance percentage is high these tests capture the actual learning level of the students. Hence it provides opportunity for a

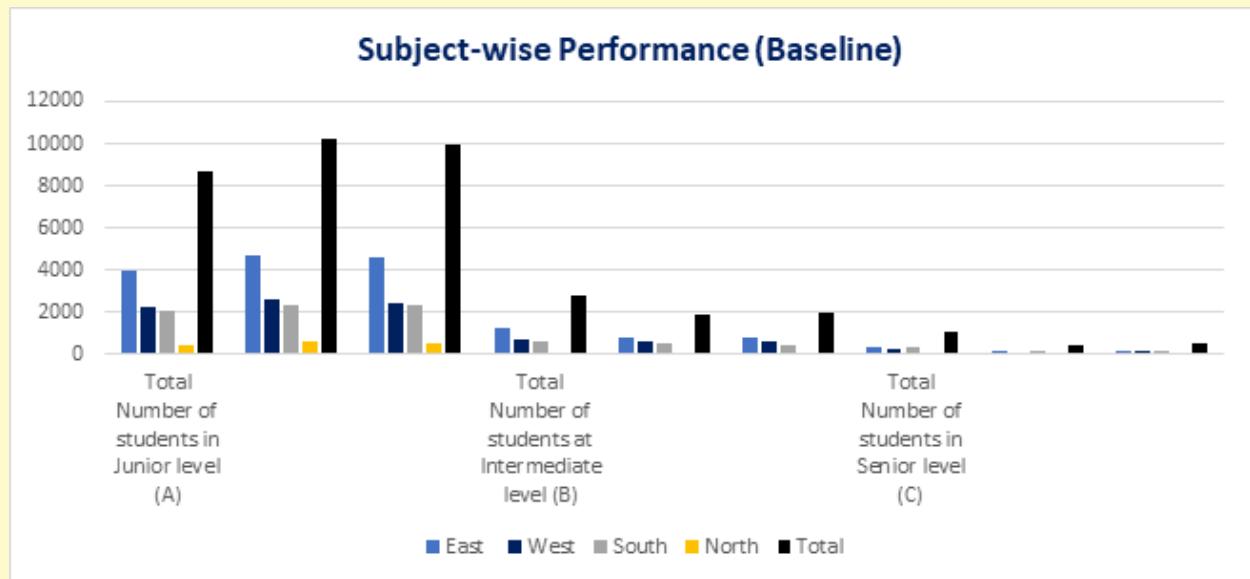


proper diagnosis of learning difficulties followed by remedial measures.

- It provides an opportunity for analysis and interpretation of the difficulties facing the students and to arrive at right decisions regarding the measures to be taken for overall improvement.

II. Subject-wise Student Performance: To assess student performance, we have categorised performance on the basis of subjects. The figure below shows the categorization of the performance on the basis of Subjects tested:

Fig.1.1



Observation: The Fig 1.1 above depicts the performance of students in Maths, Science and English in the Diagnostic assessment. The graphs reflect the following:

- In Maths, 10,254 (81.77%) are at Junior level (Class 1-5) & 1891(15.07%) at Intermediate level (Class 6-8), 395 (3.15%) at Senior level (Class 9)
- In Science, 9983 (79.61% are at Junior level (Class 1-5) & 1996 (15.92%) at Intermediate level, 561(4.47%) at Senior level (Class 9)
- In English, 8700(69.38%) are at Junior level (Class 1-5) & 2794 (22.28%) at Intermediate level (Class 6-8), 1046 (8.34%) at Senior level (Class 9)

Inference:

- Overall performance of students record that the highest percentage of students are at the Junior level (81.77% in Maths, 79.6% in Science and 69.38% in English). This clearly indicates that maximum students who have attended the assessments are in the learning levels below Class 6 i.e. they have competency between Class 1-5.
- A small percentage of students are between Class 6-8 learning levels (Maths:



15.07%, Science: 15.92% and English: 22.28%) who with intensive remedial support may have the chance of shifting into the Senior Category

- The highest achievement has been in English with 8.34% students at the Senior level while the performance has been lowest in Maths with 3.15% students at the Senior level.

III. Districts wise performance: It is worth noting that comparison between the different districts was not easy due to the huge difference in the attendance of students for the baseline tests.

Table:1.2: Enrolment & Attendance on the basis Subjects & Districts (Baseline)

District	Total Number of students Requiring RT (A+B)			Percentage of students Requiring RT (A+B)		
	English	Maths	Science	English	Maths	Science
East	5258	5444	5483	93.3	96.6	97.3
West	2974	3199	3065	90.8	97.7	93.6
South	2689	2897	2834	88.9	95.8	93.7
North	573	605	597	94.6	99.8	98.5
Total	11494	12145	11979	91.7	96.9	95.5

The Table 1.2 depicts the number of students who require remedial teaching. Students who require Remedial Teaching(RT) refers to the sum of those students who are at the Junior and Intermediate level i.e. students who have learning competencies below Class 8. (An average of the total no of students at each level for all the subjects has been calculated and divided by the attendance of students for each district)

Fig.1.2

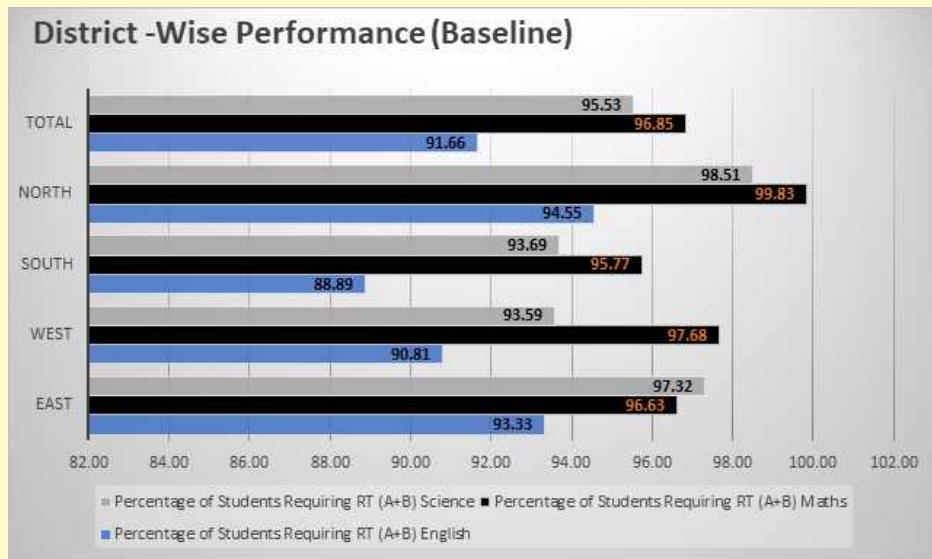
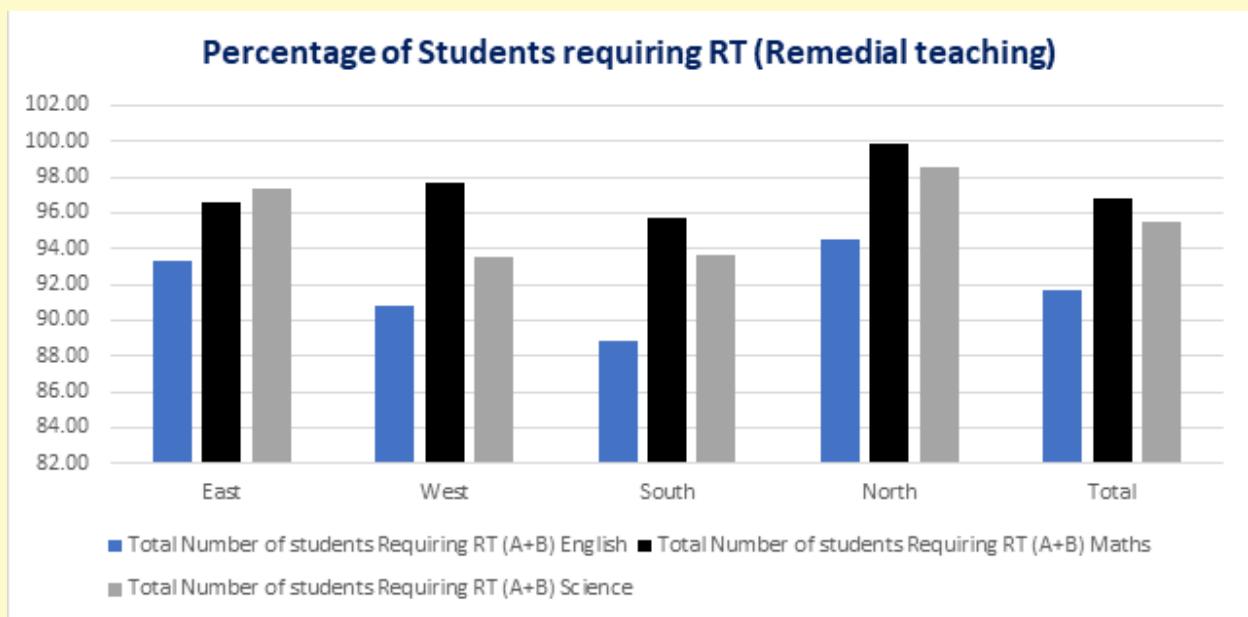


Fig.1.3



Observation:

- In the North district, an average of 606 number of students attended the assessment of which 86.41% of students are at the Junior level, 11.2% of students are at the Intermediate level while 2.3% of students are at the Senior level
- In the South district, an average of 3025 students attended the assessment of which 75% of students are at the Junior level, 18% are at the Intermediate level while 7% of students are at the Senior level.
- In the West district, an average of 3275 students attended the assessment of which 74.4% of students are at the Junior level, 19.6% are at the Intermediate level while 5.9% of students are at the Senior level.
- In the East district, an average of 5634 students attended the assessment of which 78.5% of students are at the Junior level, 17.2% are at the Intermediate level while 4.3% of students are at the Senior level.

Inference:

- Overall, the highest percentage of students who require RT are from the North District. In North, 94.6% students require RT in English, 99.8% require RT in Maths, and 98.5% students require RT in Science.
- In Science, district East has the highest percentage of students at 97.3% requiring remedial support.
- In West, South and North, the highest percentage of students requiring remedial support are that in Maths at 97.7%, 95.8% and 99.8% respectively.



- Subject specific competencies seem to be low for all subjects in all four districts but seem to be most intensive for North district.
- The North district needs more careful analysis to find out the classification on the basis of gender and economic background which may determine the low performance.
- A comprehensive teaching plan & continuous assessment of students is required in this district to improve the learning levels.

IV. Intra-district Performance comparison (Diagnostic phase)

Table:1.3: Enrolment & Attendance on the basis Subjects & Districts (Baseline)

Junior level (A)	East	West	South	North
English	3963 (70.30%)	2244(68.5%)	2036 (67%)	457(75.4%)
Maths	4664 (82.70%)	2619 (79.9%)	2382(78.7%)	589(97%)
Science	4641 (82.30%)	2442(74.5%)	2375(78.5%)	525 (86.6%)
Intermediate level (B)	East	West	South	North
English	1295 (23%)	730 (22.2%)	653(21.5%)	116 (19%)
Maths	780 (13.8%)	580 (17.7%)	515 (17%)	16 (2.6%)
Science	842 (15%)	623 (19%)	459 (15%)	72 (11.8%)
Senior level (C)	East	West	South	North
English	376 (6.7%)	301 (9%)	336 (11%)	33 (5.4%)
Maths	190 (3.4%)	76 (2.3%)	128 (4%)	1(0.2%)
Science	151 (2.7%)	210 (6.4%)	191(6%)	9(1%)

Observation:

In the context of the English Assessment:

- 70.30% in East, 68.5% in West, 67% in South and 75.4% in North are in the Junior level (Class 1-5)
- 23% in East, 22.2% in West, 21.5% in South and 19% in North are in the Intermediate level (Class 6-8)
- 6.7% in East, 9% in West, 11% in South and 5.4% in North are in the Senior level (Class 9)

In the context of the Maths Assessment:

- 82.7% in East, 79.9% in West, 78.7% in South and 97% in North are in the Junior level (Class 1-5)



- 13.8% in East, 17.7% in West, 17% in South and 2.6% in North are in the Intermediate level (Class 6-8)
- 3.4% in East, 2.3% in West, 4% in South and 0.2% in North are in the Senior level (Class 9)

In the context of Science Assessment:

- 82.30% in East, 74.5% in West, 78.5% in South and 86.6% in North are in the Junior level (Class 1-5)
- 15% in East, 19% in West, 15% in South and 11.8% in North are in the Intermediate level (Class 6-8)
- 2.7% in East, 6.4% in West, 6% in South and 1% in North are in the Senior level (Class 9)

Fig.1.4

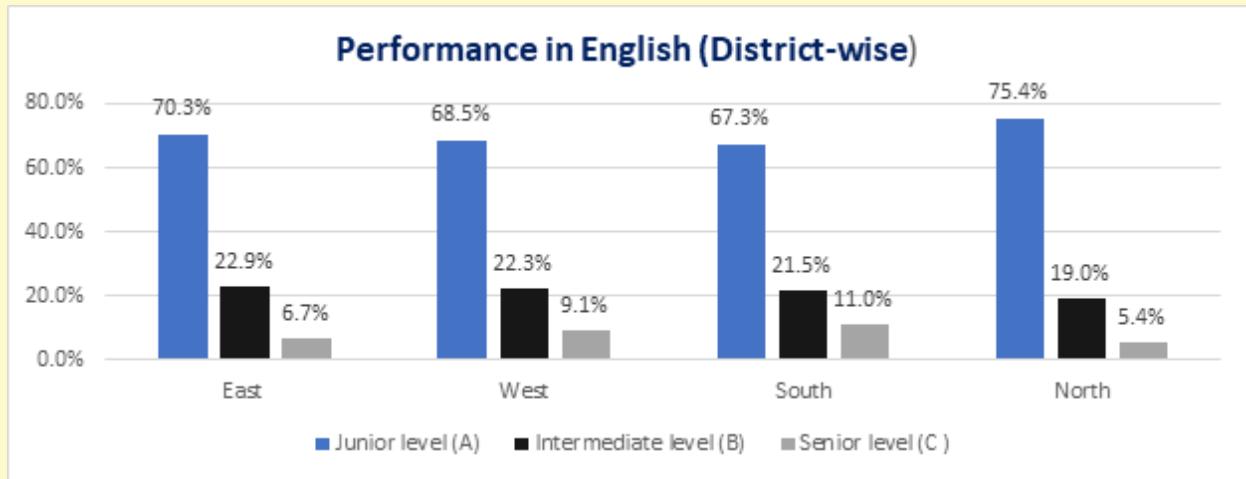


Fig.1.5

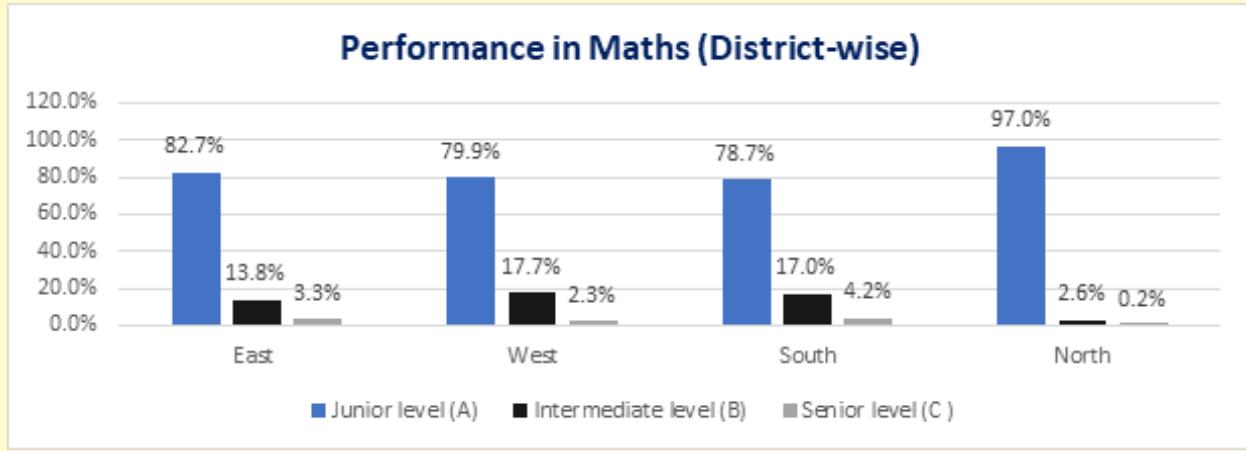
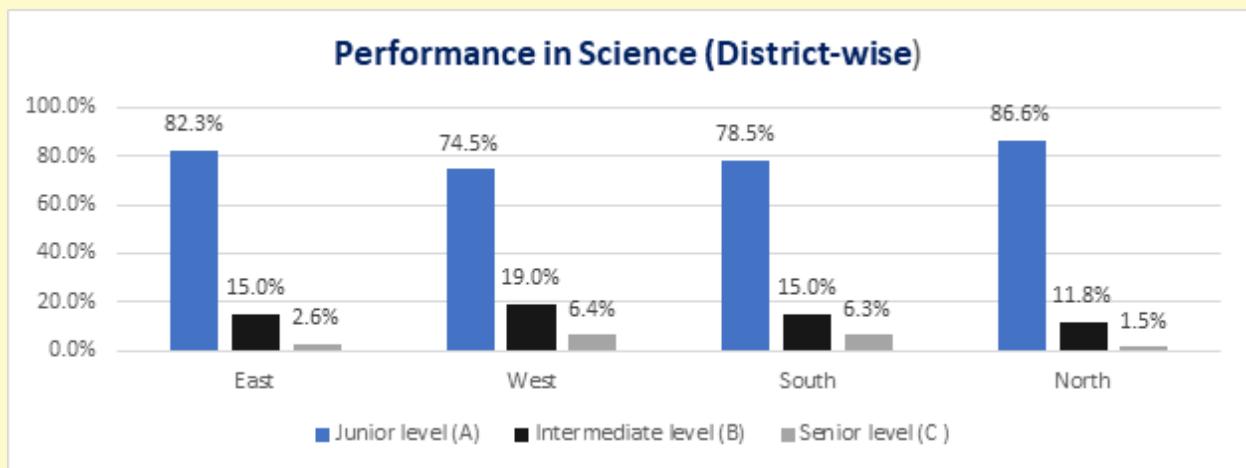


Fig.1.6



Inference:

- In the English Assessment, the highest percentage of students in Senior level is available. This shows that comparatively the competency level of English is the highest amongst all three subjects.
- On the other hand, the lowest percentage of students are available in Maths at the Senior level with 2.3% students in West, 4% students in South, and 0.2% students

B. Key results of Intervention Phase

The intervention phase commenced with the capacity building of 30 State and district officials responsible for implementing the programme in their respective districts. The Guidance Document with detailed implementation strategies for the programme was shared with all stakeholders in the workshop. The workshop included participatory sessions to build the capacity of the key officials in implementing and monitoring the programme.

This workshop was followed by the training of 24 State Resource Group members (SRGM) and 189 Heads of Institutions which included sessions on Programme parameters and methods of monitoring the programme. Additionally the SRGM training also included sessions on content and methods to deliver it and classroom based support to be provided to teachers to ensure successful implementation of the programme.

The SRGM trained 567 teachers on classroom delivery of the programme, detailed sessions on Assessments, scoring and the content to be delivered. The teachers were trained on Classroom observation and monitoring of the project so that effective implementation could be ensured.



The Remedial Teaching programme was implemented for a period of one month in 2017-2018. While the entire content could not be delivered, teachers selected key topics that were chosen to be delivered for the current. While there is no data for the current year to assess the efficacy of the programme, stories from schools and anecdotal evidence is available that shows that the programme has taken the interest of the teachers and the students.



GOVERNMENT SR. SECONDARY SCHOOL, RANGPO EAST, SIKKIM
 FEEDBACK ON REMEDIAL CLASSES 2017
 (Maths, Science, English)

Name: Anchal Kumari | **Class:** 10th present

We had remedial classes last year in class IX. The subjects included were Maths, Science and English. These classes were started by the end of October and went until our final exams. These classes helped us a lot to improve our skills in those subjects in which the students were weak. The classes were divided into three levels – Junior, Intermediate and Senior. All the students were categorised as per their level of understanding and knowledge. The classes for maths were very helpful and helped us improve a lot on those chapters where we had confusion and made us clear about the concepts. These remedial classes were very interesting and made our studies easier. All the three subjects were taught very nicely and clearly. All the students were given the remedial books. The time was managed very nicely and one hour was given for each subject to complete. The teachers did their best to help us out. The remedial classes were really very helpful to us and even helped us during our exams.

C. Key results of evaluation phase (Summative assessment of class 9):

The Summative assessments were administered to the students of Class 9 in all the four districts of Sikkim after a gap of 30 days of conducting the Diagnostic assessment tests. The Summative Assessment was meant to assess the knowledge of students on the basis of Class 9 syllabus. Students were divided in to three categories on the basis of the marking scheme as adopted by Central Board of Secondary Education(CBSE). Junior level refers to students who have scored marks in the range between 20 and 40; Intermediate level refers to students who have scored marks in the range between 41 and 70 and Senior Level refers to marks range between 71-100.



V. Total Enrolment and overall attendance: Enrolment refers to the total no of students in each of the districts that reflect the total student strength. The following are the enrolment of all four districts with the highest enrolment in East district (6029) and the lowest in North District (621).

Table 1.4: Enrolment & Attendance on the basis Subjects & Districts

Endline	Enrolment	English	Maths	Science	Average Attendance (District wise)	Percentage Attendance
East	6029	5405	5393	5405	5401	89.60%
West	3439	3218	3208	3174	3200	93.50%
South	3228	3005	3044	2962	3003.67	93.10%
North	621	596	596	596	596	95.90%
Total	13317	12224	12241	12137	12200.67	91.80%

Observation:

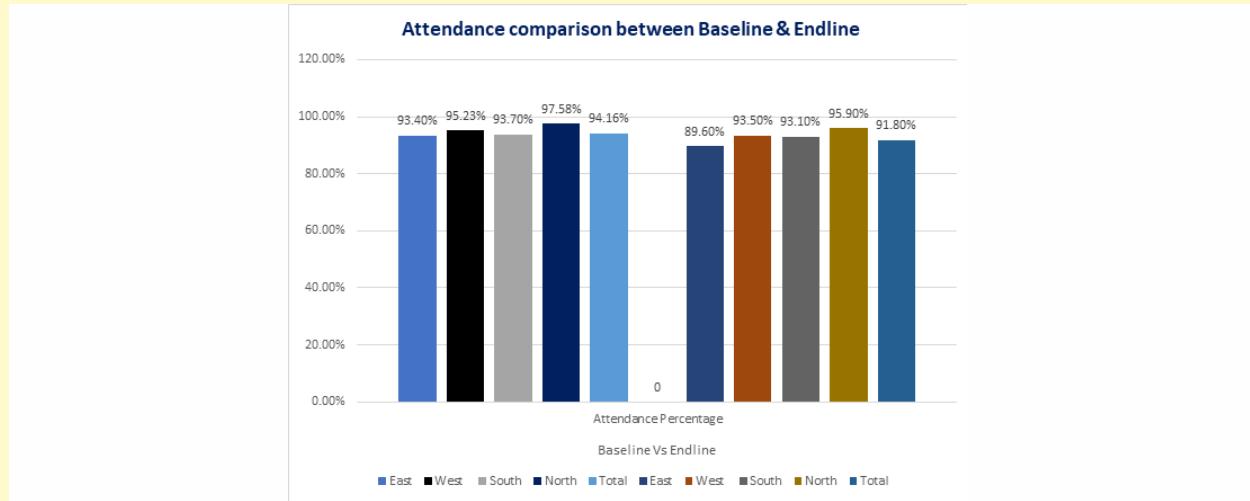
Table 1.4 depicts the enrolment & the attendance of students for the Summative assessment.

- Overall attendance calculated as an average of students attending all three assessments is 91.80%
- In East district, average attendance for all assessments was 89.60%
- In West District, average attendance for all assessments was 93.50%
- In South District, average attendance was 93.10%
- In North District, average attendance was 95.90

Inference:

- Since the attendance in the assessments is high, it captures whether majority of the Class 9 students have been able to understand and internalise Class 9 syllabus.

Fig 1.7 Attendance comparison between Baseline & Endline



Observation:

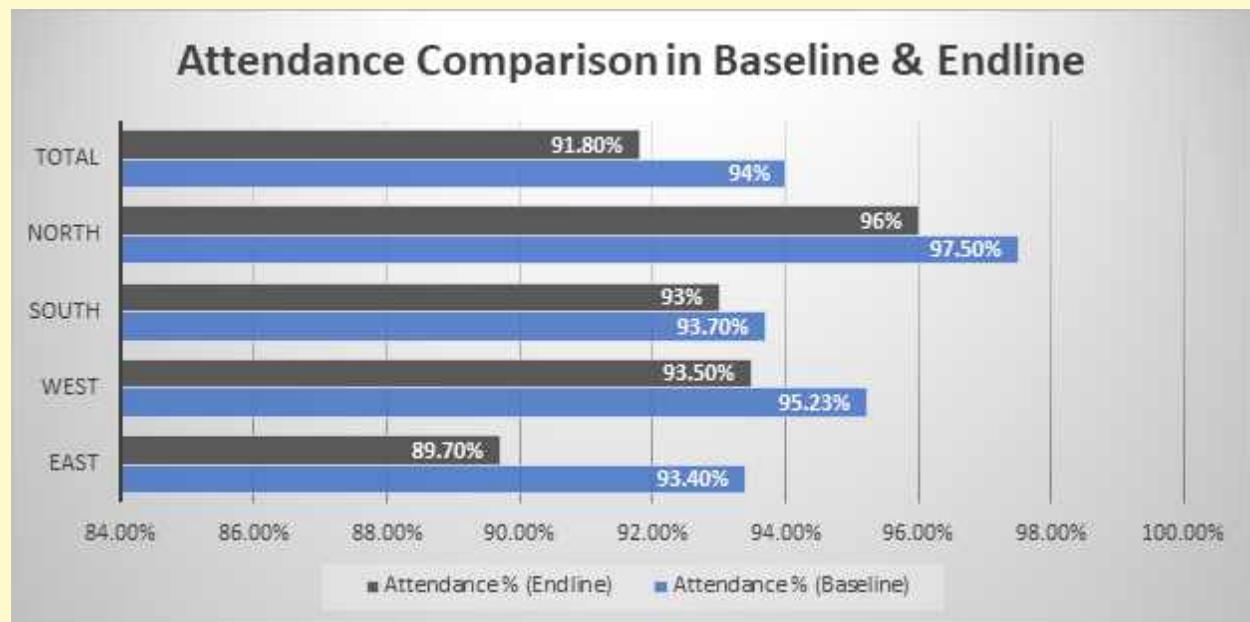
- The Fig 1.7 above depicts the comparison between the attendance observed in the Baseline & Summative assessments.
- A slight reduction is noticed in the Endline tests with the overall attendance percentage at 91.8 % from a high of 94% in the Baseline

Inference:

- The Summative assessments were conducted after a gap of 30 days from the Baseline tests
- The high attendance in both the Baseline and Endline has ensured that nearly the same cohort of students have appeared for both the assessments which makes it easy to compare and understand the results.
- Since the design of the two tests were different, they cannot be used as a pre and post test for the programme. However, both the assessments taken together has served two purposes:
 - The Diagnostic assessment has revealed whether students have the required competencies till Class 8
 - The Summative Assessment gave a clear picture whether students have been able to assimilate the knowledge and competencies of Class 9

VI. District-wise Attendance of Students (Baseline & Summative assessment)

Fig 1.8 Attendance Comparison



Observation:

- The fig 1.8 determines that attendance has been maintained at a high percentage for both the Baseline & Summative assessment processes.
- The overall attendance in each of the districts for the Diagnostic assessments has been consistent with 5634 attending in East district, 3275 in West, 3025 in South & 606 in the North district for all the subjects.
- In comparison to the Enrolment, the attendance in the Baseline & Endline has been consistently high at 90% and above in all the districts. The highest attendance has been observed in the North district in both Baseline (at 97%) and Endline (at 95%). This is followed by the West & then the South districts.
- The overall attendance percentage has also been found to be at a high of 94% in Diagnostic assessment and 91.8% in Summative assessment.

Inference:

- Only a slight reduction in attendance has been observed in the East district from 93.4 % to about 90% . The overall attendance in each of the districts for the Diagnostic assessments has been consistent with 5634 attending in East district, 3275 in West, 3025 in South & 606 in the North district for all the subjects.
- We can also conclude that attendance has reduced for the Summative assessment process and the maximum decrease has been observed in Science followed by Mathematics. Science & Mathematics as subjects need focus on understanding and analytical thinking, not just knowledge of facts. Hence, as subjects Science & Maths are generally considered to be tough.
- Due to the high attendance maintained in both Baseline & Summative assessments, a picture of the total learning level of the state is available.

VII. Subject-wise Performance:

Table: 1.5: Performance

Junior Level (A)	East	West	South	North
English	3349 (62%)	1971 (61%)	2068 (69%)	396(66%)
Maths	4499 (83.3%)	2603 (81%)	2636 (87.7%)	505 (84.7%)
Science	4116 (76%)	2242 (70%)	2343 (78%)	484 (81.2%)
Intermediate Level (B)	East	West	South	North
English	1876 (34.7%)	1141 (35.6%)	844 (28%)	194 (32.5%)
Maths	813 (15.1%)	549 (17%)	379 (12.6%)	88 (14.7%)
Science	1193 (22%)	898 (28.1%)	571 (19%)	111 (18.6%)



Senior Level (C)	East	West	South	North
English	181 (3.4%)	106 (3.3%)	93 (3%)	6 (1%)
Maths	81 (1.5%)	56 (2%)	29 (0.9%)	3 (0.5%)
Science	96 (1.77%)	34 (1.2%)	48 (1.8%)	1 (0.1%)

Observation: The subject wise performances are as below:

The following are the results of the English Assessment:

- In District East, 62% students are at Junior level (students who have received marks between 20 to 40), 34.7% students are at Intermediate level(students who have received marks between 41-70) and 3.3% students are at Senior level (students who have marks between 71-100)
- In District West, 61% of Students are at Junior level, 35.6% students are at Intermediate level and 3.3% students are at the Senior level
- In District South, 69% of Students are at Junior level, 28% students are at Intermediate level and 3% students are at the Senior level
- In District North, 66% of Students are at Junior level, 32.5% students are at Intermediate level and 1% students are at the Senior level

The following are the results of the Maths Assessment:

- In District East, 83.3% students are at the Junior level, 15.1% at the Intermediate level and 1.5% at the Senior level
- In District West, 81% students are at the Junior level, 17% at the Intermediate level and 1% at the Senior level
- In District South, 87.7% students are at the Junior level, 12.6% at the Intermediate level and 0.9% at the Senior level
- In District North, 84.7% students are at the Junior level, 14.7% at the Intermediate level and 0.5% at the Senior level

The following are the results of the Science Assessment:

- In District East, 76% students are at the Junior level, 22% at the Intermediate level and 1.77% at the Senior level
- In District West, 70% students are at the Junior level, 28% at the Intermediate level and 2.4% at the Senior level
- In District South, 78% students are at the Junior level, 19% at the Intermediate level and 1.6% at the Senior level
- In District North, 81.2% students are at the Junior level, 18.6% at the Intermediate level and 0.1% at the Senior level



The following results are shown pictorially below:

Fig 1.9

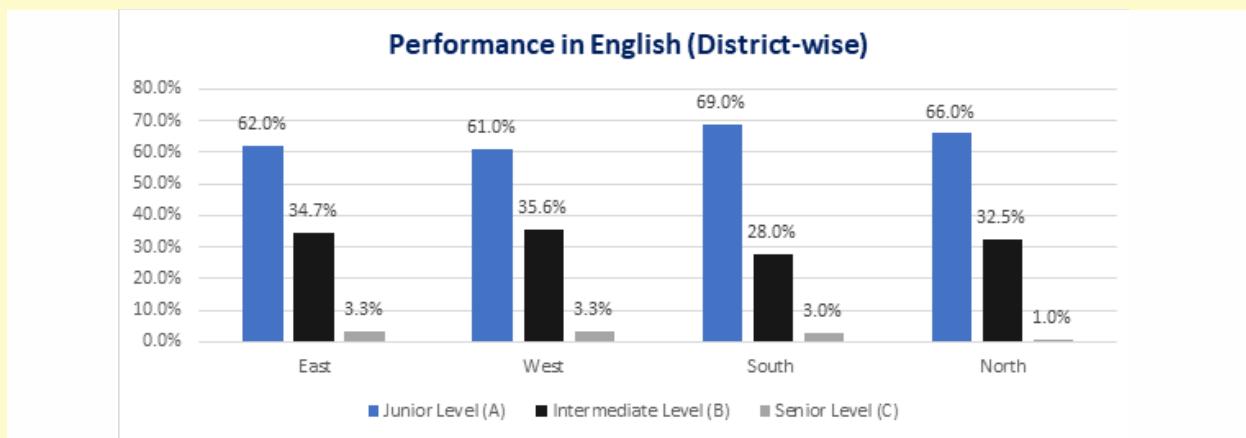


Fig 2.0

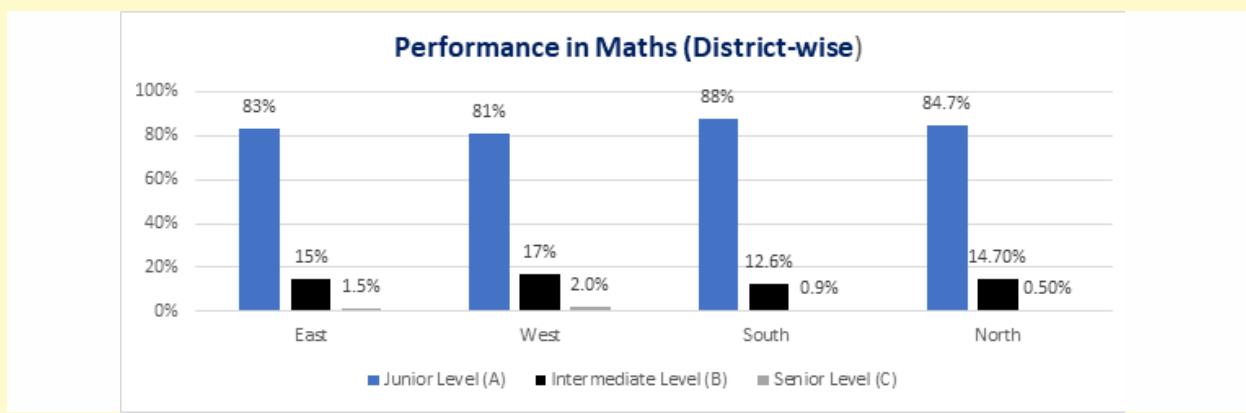
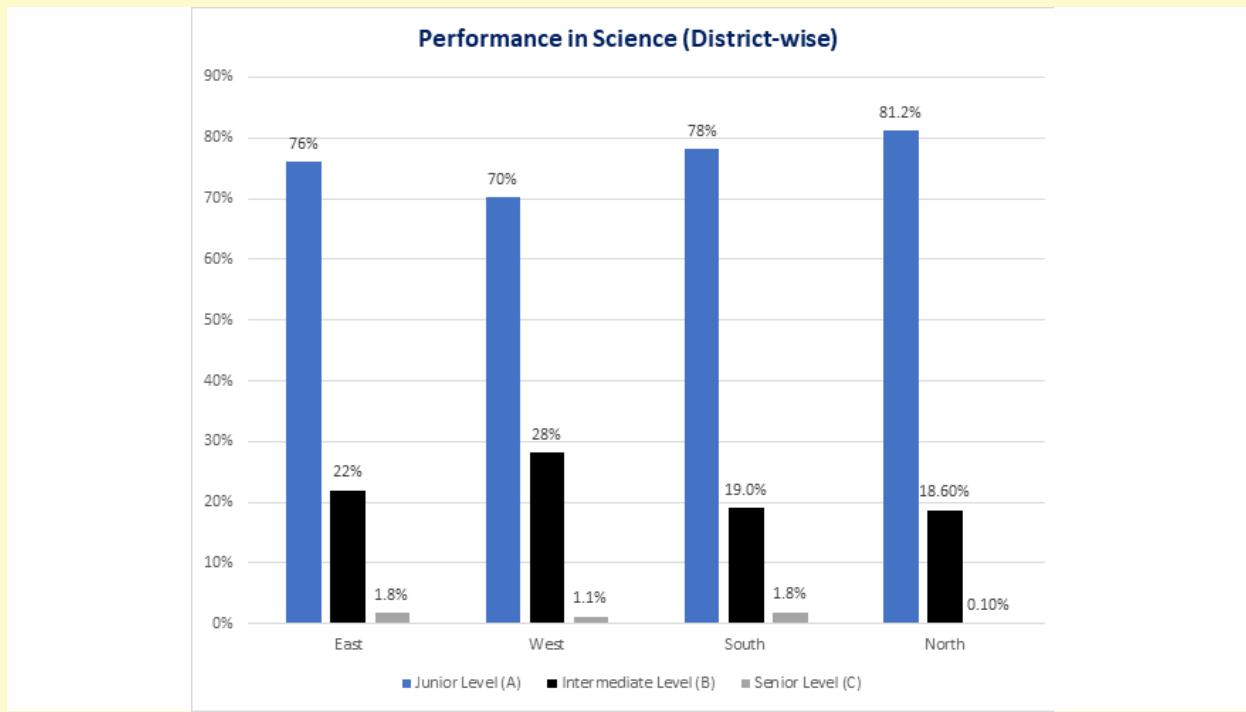


Fig 2.1

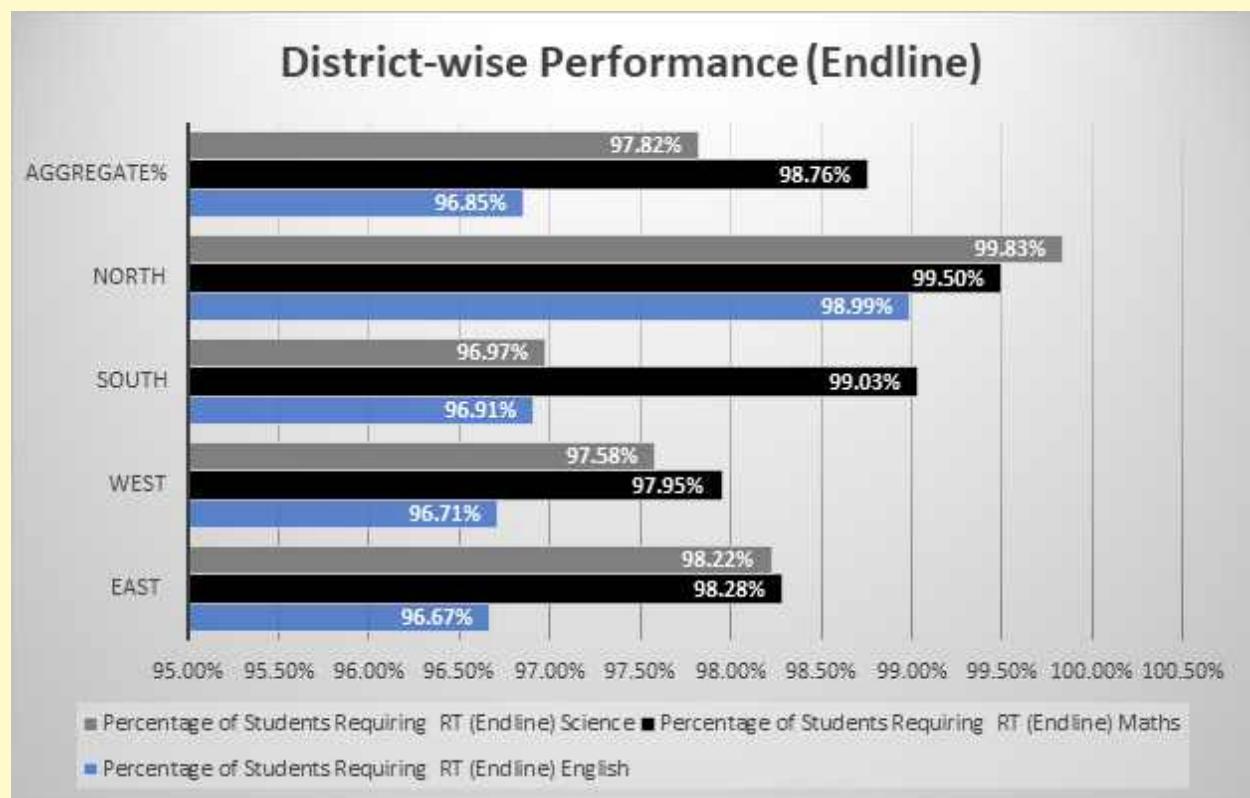


Inference:

- In the context of the English Assessment, 69% of students are at the Junior level in District South followed by North which has 66% at the Junior level. District East and West have 62% and 61% at the Junior level respectively.
- In the context of the Maths Assessment, 87.7% of students are at the Junior level in District South followed by North which has 84.7% at the Junior level. District East and West have 83% and 81% at the Junior level respectively.
- In the context of the Science Assessment, 81.2% of students are at the Junior level in District North followed by South which has 78% at the Junior level. District East and West have 76% and 70% at the Junior level respectively.
- The above analysis shows that more than 50% of the students have received marks from below 20 to 40 which is in Level 1 (D, E, F category) as per the CBSE marking scheme.
- In Maths, in all districts more than 80% of the students are at the Junior level i.e receiving marks till 40 as per the CBSE marking scheme which means that additional support is required in Maths in all four districts.

VIII. District wise performance:

Fig 2.2



Observation:

The following are the results of all four districts:

Junior Level:

- In East District, 62% of students, 83% of students and 76% of students are in the Junior level in English, Maths and Science respectively
- In West District, 61% of students, 81% of students and 70% of students are in the Junior level in English, Maths and Science respectively
- In South District, 69% of students, 87.7% of students and 78% of students are in the Junior level in English, Maths and Science respectively
- In North District, 66% of students, 84.7% of students and 81.2% of students are in the Junior level in English, Maths and Science respectively

Intermediate Level:

- In East District, 34.7% of students, 15% of students and 22% of students are in the Intermediate level in English, Maths and Science respectively
- In West District, 35.6% of students, 17% of students and 28% of students are in the Intermediate level in English, Maths and Science respectively
- In South District, 28% of students, 12.6% of students and 19% of students are in the Intermediate level in English, Maths and Science respectively
- In North District, 32.5% of students, 14.7% of students and 18.7% of students are in the Intermediate level in English, Maths and Science respectively

Senior Level:

- In East District, 3.3% of students, 1.5% of students and 1.77% of students are in the Senior level in English, Maths and Science respectively
- In West District, 3.3% of students, 2% of students and 1.1% of students are in the Senior level in English, Maths and Science respectively
- In South District, 3% of students, 0.9% of students and 1.6% of students are in the Senior level in English, Maths and Science respectively
- In North District, 1% of students, 0.5% of students and 0.1% of students are in the Senior level in English, Maths and Science respectively

Inference:

- District South followed by North has the highest number of students who have attained marks between 20 to 40(Junior level).
- District West has the highest number of students in all three subject who have received marks between 41-70(Intermediate level).
- District West has the highest percentage of students who have received marks between 71-100 (Senior level) in English and Maths whereas District South has the highest percentage of students at the Senior level in Science.



IX. Students requiring further support in Class 10:

Table: 1.6: % students support in Class 10

Junior Level (A)	East	West	South	North
English	3349 (62%)	1971 (61%)	2068 (69%)	396(66%)
Maths	4499 (83%)	2603 (81%)	2636 (87.7%)	505 (84.7%)
Science	4116 (76%)	2242 (70%)	2343 (78%)	484 (81.2%)

Observation:

- In English, District West has the lowest % of students in Junior level at 61% and South has the highest number of students at 69%
- In Maths, District West has the lowest % of students in Junior level at 81% and South has the highest number of students at 87.7%
- In Science, District West has the lowest % of students in Junior level at 70% and North has the highest number of students at 81.2%
- While comparatively District West has less students in the Junior level, in all four districts atleast 60% of students are at the Junior level in all four districts and should receive additional support to cope with the learning levels of Class 10.

Inference:

- In all the three subjects, the total percentage of students who are in the Junior level (marks received between 20 to 40) is very high and will require further support in Class 10 to ensure exceptional results in Class 10.



Conclusion

According to the National Achievement Survey released by the Ministry of Human Resource Development (MHRD) in 2017-2018³, learning levels in mathematics and language have shown a progressive decline from lower to higher grades in the government school system, even as the country inches closer to achieving the target of universal enrolment for six-14 year olds. An average of 67.7 per cent of Class 3 students have performed well in language. This rate, however, drops to 58.4 per cent in Class 5 and 56.7 per cent in Class 8.

The drop in overall learning levels in mathematics is even higher than other subjects. In Class 3, it stands at 64.3 per cent and falls significantly, almost by 10 percentage points, to 54.14 per cent in Class 5. It is the lowest in Class 8 at 42 per cent. In mathematics, 64.4 per cent of female students in Class 3 performed well, compared to 64.1 per cent male students. In Class 5, the success rate of girls in the same subject was 54.32 per cent and boys 53.94 per cent. As for Class 8, 42.3 per cent of girls answered questions correctly, compared to 41.8 per cent boys.

Another interesting revelation was that students of government and government-aided schools in rural areas performed better than their counterparts in urban schools in mathematics, across all three grades. The finding is contrary to the perception that the quality of education in urban areas is superior to that in rural areas. Among social groups,

OBC students in most classes performed better than their classmates belonging to general and SC/ST categories

While the above reflects the scenario all over India, in 2017-2018, students in Sikkim were tested to introduce a remedial teaching programme in the state. In the Diagnostic Assessment that was administered, students were mostly diagnosed to be at the level below Class 5. Therefore, while they were in Class 9, they had learning competencies below Class 5. The same students were administered their Summative Assessment based on the Central Board of Secondary Education (CBSE) pattern in December 2017. Most students were at the lower level of the CBSE Marking Scheme in the levels D, E and F thereby reiterating the fact that when competencies of lower classes are unattained by students it is difficult for them to attain the knowledge and competencies of the higher classes.

On the other hand, the Class 10 Board Results in Sikkim show students in a favourable

³Source: <http://indianexpress.com/article/education/govt-schools-in-700-districts-tested-mathematics-language-skills-dip-as-kids-grow-5046942/>



light. The Pass percentage of students in Class 10 is 71% and the total number of students who have received above 80% are 1%. 65% of the students are performing well and have attained scores in the range of 50-70%. This portrays the fact that despite the lack of competencies till Class 9, students when coached and supported in Class 10 are able to attain the desired results thereby ensuring that state results are elevated. This essentially does not show that students are learning, rather that they are examination ready and able to perform in the Board exams.

The analysis of the Diagnostic & Summative assessment assessments followed by the state of Sikkim shows that continuous assessment plan is required to be put in place in order to ensure that students are learning and that any learning gap that exists is being bridged. The assessments were spaced out within a month of each other. While they may not show us the efficacy of the programme, it shows very clearly that while a high percentage of students do not have the competency till Class 8 but they have not been able to perform very well in Class 9 in the Summative Assessment.

Every child in the system is different and at a different learning level/ability and may need time to grasp and improve. In order for teachers to monitor the students and for the students' academic progress, the assessments need to be comprehensive and stress-free for the students. Student performance would require monitoring and teachers would require support at the school level in order to ensure that classroom transactions are meaningful and students are able to comprehend all concepts and topics effectively.



Recommendations

In 2017-2018, Remedial Teaching was implemented in the state as per a structured plan. While Remedial Teaching was implemented, it was implemented for a period of one month and therefore could not be implemented in its fullest. The following recommendations are suggested for implementing the programmes in 2018-2019:

- The Remedial Teaching programme must be implemented as planned and as per the norms laid down in the Guidance document. Programme Integrity needs to be maintained if the programme is to succeed. Programme Integrity has to be maintained at two levels: a) Implementation Integrity b) Integrity of Instruction.
 - **Implementation Integrity** should be maintained through effective programme planning and ensuring that processes are followed. Implementation integrity will be ensured through the following:
 - Roles and Responsibilities of all stakeholders that are clearly defined should be followed as per the plan
 - Create a system for feedback and data based decision-making through a) Quality assurance visits to observe classroom and Teacher practices and student response to the programme b) Review lesson plans and ensure that they are implemented in the way they are planned c) Review student academic data and work to ensure outcomes for student proficiency
 - Create accountability measures for non-compliance through continuous follow ups by the District office and state orders on implementation
 - **Integrity of instruction** needs to be ensured through the fact that teachers follow the lesson plans that have been designed for them and also learn to improve and improvise on the lesson that have been currently shared.
- Teacher Training should be more intensified and must be separated from the general teacher training that teachers have to undergo each year. The teachers who are responsible for Remedial Teaching must be specialists in differential learning, collaborative and peer learning as well as understanding a spiral curriculum and deliver it in class. Atleast, three days of intensive training followed by classroom observation is recommended for ongoing support of teachers.
- Classroom based support should be provided to the teachers who are selected to deliver the Remedial teaching sessions. Teacher Observation need to be undertaken by the State Resource Group as well as by peers who will provide onsite support so that



teachers can improve teaching.

- Head Teacher Capacity Development as academic leads of the schools should be reinforced and the roles and responsibilities in a programme that is aimed at improving the learning outcomes should be enforced by District and State officials.
- Each district needs to designate a nodal officer who will ensure that all programmes related to quality including Remedial teaching is implemented effectively in their district.
- Finally, it is recommended that the remedial teaching programme should be designed at three intervals, in Class 3, Class 5 and in Class 9 and key competencies should be revised in these classes so that any gap that exists in students is then bridged in these critical years and students are able to achieve the learning outcomes that are expected of them.
- In the context of the Summative Assessment, one needs to ensure that students who have been promoted to Class 10 must have the requisite learning levels so that they may be able to participate in the Board Examination without fear and apprehension. Students identified by teachers as requiring additional support should undergo extensive tutoring through school-based camps during summer holidays where teachers teach students with the purpose of ensuring that learning gaps are bridged and students are ready for Class 10. All students in Class 10 should also undergo Winter Coaching programmes to prepare them for Class 10 Board examinations.



Future Scope

In the light of the recommendations suggested, Bhoomi Education suggests the following as future scope of engagement with the Sikkim Government to enhance learning levels in the State:

- Remedial classes for students of Class 4, 6, and 9: Remedial Teaching will be planned for students with learning gaps in Classes 4, 6, and 9 with special content that is connected to the curriculum so as not to make it an isolated programme. This will ensure that learning gaps are captured at the earliest and bridging support is available for students at every critical educational junction (Class 4: Completion of foundational level, Class 6: completion of Primary level and Class 9: completion of Upper Primary and preparation for Class 10)
- Special Workshops for designated teachers: Special workshops will be designed for designated teachers who will be trained on supporting differential learning within a classroom, peer and collaborative learning and delivering a spiral curriculum.
- Management workshops for Head Teachers: Workshops for Head Teachers will be designed and delivered to ensure that Head Teachers are able to work as academic heads of their schools to support and deliver the remedial programme effectively.
- Management workshops for District and State officials: Management workshops for key district and state officials who will be responsible for implementing the Remedial Teaching and monitoring the Remedial Teaching workshop. Since it will be planned as a specialised workshop, it will focus on quality assurance parameters that will include monitoring and observation of the programme, coaching of Heads of Institutions and sharing feedback on the programme.
- **Content Development:** The following content will be developed for the effective implementation of the programme.
 - a. Guidance document with detailed step by step implementation steps
 - b. Teaching manual with detailed lesson plans
 - c. Student workbooks with practice sessions
 - d. Quality Assurance Framework to monitor and evaluate the programme at regular intervals
 - e. Anthology of Best practices that will include success stories of districts, schools, teachers who have excelled at implementation and affecting learning outcomes.

