CHAPTER III
METHODOLOGY

This chapter presents the methodology used for conducting the present research. Research Methodology is a systematic way to solve a problem. It is a science of studying how research is to be carried out. Essentially, the procedures by which researchers go about their work of describing, explaining and predicting phenomena are called research methodology. It is also defined as the study of methods by which knowledge is gained. Its aim is to give the work plan of research. The research has been carried out in five phases consisting of two sets of sample ie children and teachers.

Set I-Progressive identification of children with difficulties and subsequent intervention provided to them by the teachers, having undergone the training. The intervention had a twofold objective-bringing an improvement in learning as well as social behaviour-the latter being based on the principle of positive behaviour support (PBS), which implied that an enriched child friendly learning environment would automatically generate positive social behaviour.

Set II: Training of the teachers and resource persons on teaching strategies, evaluation and class management to meet the above mentioned objectives.

3.1. DESIGN OF THE STUDY

This study employed the multiple baseline design. A multiple baseline design of research involves careful measurement of multiple persons, traits or settings both before and after a treatment. For example, the intervention (RtI program) is introduced in one school at a time to see if changes (levels of special education referrals) occur when, the intervention is introduced, controlling for the threats to external validity. By gathering data from many subjects /instances, inferences can be made about the extent of likelihood, to which the measured trait would generalize to a larger population. In multiple baseline designs, the experimenter starts by measuring a trait of interest, then applying a treatment before measuring that trait again. Multiple base-line experiments are most commonly used in cases where the dependent variable is not expected to return to normal after the treatment has been applied. Interventions are introduced to different baselines at different point of time.

In this research the baselines are selected as follows:
Table 3.1-Components of the baseline

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Components</th>
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</thead>
<tbody>
<tr>
<td>First baseline (B1)</td>
<td>Screening by ‘Sharanya A– a tool to select children ‘At Risk’ for learning difficulties” who were to be given intervention at level 1 along with the general class children by regular teachers trained to give intervention</td>
</tr>
<tr>
<td>Second baseline (B2)</td>
<td>Monitoring by ‘Sharanya B’- a tool to select children who had not responded to level 1 intervention and were to be given level 2 intervention after the class by regular teachers and resource persons</td>
</tr>
<tr>
<td>Third baseline(B3)</td>
<td>Monitoring by ‘Sharanya C’- a tool to select children who had not responded to level 2 interventions and were to be given level 3 intervention after going through standardised assessment procedures to understand the exact type of learning difficulty..</td>
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</table>

The following factors were considered in the research study:

- The present study is a multiple baseline design across subjects: Subjects of level 1 as well as level 2 received the intervention that was being done for a period of one academic session. Experimental control was observed, as the behaviour of the subject changed when intervention was applied in each of the settings.
- Intervention was given directly aiming at monitoring performances in the concept development, knowledge development and language development during, entry level (post screening), post level 1 and post level 2 interventions by Sharanya A, Sharanya B and Sharanya C respectively.
- In a multiple baseline design across settings, behaviours were observed in two settings- the regular class and the resource room.
3.2: THREATS TO EXPERIMENTAL VALIDITY.

The following threats were controlled to ensure internal and external validity of the experiment:

1. History

A selection-history threat is any other event that occurs between pre-test and post-test that the groups experience differently. Groups differ with respect to their reactions to history events, this threat was controlled by selecting the schools randomly.

2. Maturation

Selection-maturation threat results from differential rates of normal growth between pretest and posttest for the groups where history refers to a discrete event or series of events whereas maturation implies the normal, ongoing developmental process that would take place. Since the children were involved only for a period of ten months and they belonged to the age group of 10 to 14, no remarkable change could take place in the biological, sociological and psychological sphere of life.

3. Floor and Ceiling Effect.

Floor effect is the limitation of the instrument that limits its ability to differentiate between scores at the bottom of the scale, while ceiling effect is that which limits the ability of the measuring instrument to differentiate between the scores at the top of the scale. Since the scores have been clearly assigned at the bottom and at the top of the scale, this could be avoided.

4. Social Interaction

Social research does not take place in a vacuum and the human element underpins all research activity, influence of that human element is inevitable. It is this social interaction that can lead to misinterpretation of the cause-effect relationship.

The following are the major social interaction threats:

a. Experimenter bias

This bias can take place if the experimenter has already acquired some previous knowledge about the subjects. In this case the experimenter had no previous knowledge about the subjects of the experiment.

b. Selection bias

This becomes a threat to validity if subjects are asked to volunteer to be a part. This is also called the participant effect. Since all the children of Vth Standard were taken for the study, selection bias was controlled.

c. Interference of previous treatment.
This was already controlled as the subjects had received traditional method of teaching in mainstream education schools prior to the intervention.

External validity is the extent to which the results can be generalized beyond the participants used in the experiment and beyond the setting where the experiment was conducted. The following threats to validity (Gay & Airasian, 2000) were controlled to enable generalization of the outcome of this study:

i).Pretest-Treatment Interaction.
The pretest sensitizes participants to aspects of the treatment and thus influences posttest scores. A gap of 30 days had been given between the pretest and intervention. Items of the pretest were chosen in such a way that they do not reflect the treatment. Thus this threat was controlled.

The nonrandom or volunteer selection of participants limits the generalization ability of the study. Randomisation procedure was followed to check this threat. All 8 schools were randomly selected for the study.

c. Specificity of Variables.
Poorly operationalised variables make it difficult to identify the setting and procedures to which the variables can be generalized. The operational definitions clearly identified the variables and hence this should not be a threat to external validity.

3.3 SAMPLE
SCHOOL SAMPLE
For the purpose of representation of population the geographical region of Goa was divided into North Goa and South Goa. The sample was drawn from North and South Goa using the method of random sampling, so that each element of the population had an equal as well as independent chance of getting selected. The sample was drawn from eight regular schools of Goa where the medium of teaching was English. Eight schools of Goa were randomly selected for the study. They were:

1. Government High School, Dona Paula,
2. Don Bosco
3. Immaculate Heart Of Mary
4. St. Lawrence High School
5. Government High School, Mongor
6. Anjuman High School
7. Government High School, Baina
CHILDREN SAMPLE

Children studying in the 5th standard in English Medium Schools of Goa constituted the population from where sample was drawn. 787 children were found to be studying in the 5th standard of these eight schools. Since the mode of evaluation practiced to promote children from IVth to Vth standard was not considered an accurate yardstick for measurement of the current level of learning by the Principals of the concerned schools and also because previous performance records of some children who had migrated from other states was not available, hence all children of 5th standard (787) were subjected to screening.

All subjects belonged to families residing in Goa and were within the age range of 10 to 12 years studying in Vth standard of the respective schools. They represented both the genders and lower, middle and high middle social strata of Goa.

TEACHER SAMPLE

The present study implied training teachers in giving interventions in concept development, knowledge development and language development in the general classroom for level 1 and in resource room for level 2. Hence teachers teaching History, Geography, Science, English and Mathematics in at least one section from each school were nominated by the principals in response to the researcher’s request, as samples for the study.

The special educators with a degree in B.Ed Special education, who willingly offered to cooperate in the study, were selected by the researcher using convenience sampling to give training in identifying non responders of level 1 and level 2 and for giving intensive interventions at level 2 in the above mentioned areas in the resource room setting.
TABLE 3 -2-Stages of sample Selection:

<table>
<thead>
<tr>
<th>Stages</th>
<th>Selection criteria for Set I</th>
<th>Selection criteria for Set II</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONE</td>
<td>Random selection of 4 schools from North and 4 schools from South Goa.</td>
<td>Random selection of 4 schools from North and 4 schools from South Goa.</td>
</tr>
<tr>
<td>TWO</td>
<td>Identification of children studying in Vth standard from North Goa and South Goa</td>
<td>Identification of teachers teaching English, History, Geography, Science and Maths in Vth standard from North Goa and South Goa</td>
</tr>
<tr>
<td>THREE</td>
<td>Selection of all children studying in Vth standard from North Goa and South Goa 2 (total = 787) based on the names provided in the attendance register.</td>
<td>Selection of teachers by the principal of the schools selected for the study</td>
</tr>
<tr>
<td>FOUR</td>
<td></td>
<td>Convenience sampling of the special educators with a degree in B.Ed Special education by the investigator.</td>
</tr>
</tbody>
</table>

Measures Used:
Sharanya, a screening tool was designed for children between 10 to 12 years administered to children studying in the Vth or VIth Standard. “Sharanya” comprised of 3 parts. “Sharanya –A” for screening, ‘Sharanya B’ for monitoring performance at level 1 and ‘Sharanya C’ for monitoring performance at level 2 was designed by the researcher to identify children “At Risk for Learning Difficulties”, at the end of the respective stages of screening and intervention at level 1 and level 2. The Sharanaya series ABC had three components - concept development, knowledge development and language development.
Table 3.3: Sharanya

<table>
<thead>
<tr>
<th>Sha=Shine again</th>
<th>Ra=Rise again</th>
<th>N=Now</th>
<th>Ya=Yearn again</th>
</tr>
</thead>
</table>

The performance of the children was measured keeping in mind these three components. Children that scored 2 or below in any one of the tests of Sharanya- A was considered “at risk for learning difficulties” and was selected for the level 1 intervention. A score of 3 or above signified that the children had performed in each of those areas at the age appropriate level.

A composite score of 2 or below on the three components of Sharanya- B would imply that these children were nonresponders to level1 interventions and would require intervention at level 2.
A composite score of 2 or below on the three components of Sharanya- C on the part of children who were subjected to level 2 interventions would imply that these children were nonresponders to level2 interventions. They, only after going through standardised assessment procedures to understand the exact nature of their learning difficulty would receive intervention at level 3.

3.4 TOOL CONSTRUCTION (Sharanya A)

Item selection
Selection of pictures in the test was based on children’s familiarity with the items which included fruits, domestic animal etc. An important consideration for selection of any material was its availability. Thus all material selected, in the form of inexpensive charts were readily available in all rural and urban areas of Goa.

Care was taken to completely omit any text related matter as children were overexposed to writing questions from the text in the form of weekly, monthly and semester evaluation system. While selecting test items, the objectives of the study and the need to introduce novelty and reduce boredom were kept in mind.
Test –taking time
Time limit was specified for each subtask to make children more focussed on the task as well as to identify children who need more time for a certain task completion. Total time was restricted to 60 minutes

Mode of Test Administration
The screening was conducted through a paper pencil mode since the number of children was large and there were not enough trained personnel to administer the test.

Rationale for sub-tests:

Test 1:Concept development:
At the Vth and VIth standard levels it is essential to systematically store information presented to children (ie the content of the subject matter). It was also necessary to investigate how children categorise the data from the visuals. Children are required to retrieve a number of information according to categories and write systematically in their paper pencil exam.

Test 2:Knowledge Development:
During a paper pencil exam it is necessary to 'link response to the question" The inability to link response with the question was one of the principal reasons behind poor performance in the exams. Children often wrote answers which in no way were linked to the question. The next step that is required by the child to fare well in written exams would be “retrieving concepts accurately”. The evaluation at this level also demands retrieving meaningful information. This subtest aimed at identifying strengths of the children who had this ability well developed. Thus a child identified “at risk’ in any other area but with a high score in this area indicated better storage. The Vth standard evaluation often comprised of “write short notes”, answer in 2 to 3 sentences “where a number of concepts need to be retrieved. Thus whether the child “retrieves multiple concepts” became an important component for measurement. In relation to this, it also became essential to measure if the child “establishes link between concepts” to maintain a logical sequence in the responses given to the questions asked.
Test 3: Language Development:
Contextual Writing was chosen as a subtest because in the Vth and VIth Standard level children were required to attempt picture comprehension. They were also expected to write questions on diagrams given in Science or maps in Geography.

Semantics was chosen as children in the middle school level were often required to write paragraphs or essays in English. In this context they were required to construct sentences that revolved around a single topic. The writing demanded a sequence of thoughts and use of expressive vocabulary.

Syntax formed an important subtest of language development as children in this level often need to write brief answers, paragraphs in grammatically correct sentences, an absence of which does not convey the actual meaning. It becomes important for them to use capitalization and punctuation in the sentence appropriately, maintain agreement of verb with the subject, use articles appropriately in a sentence and write main verb and noun correctly.

DESCRIPTION OF SCREENING TOOL:

DESCRIPTION OF SHARANYA-A
Sharanya-A, a screening tool designed for children between 10 to 12 years, studying in the Vth or VIth Standard. It comprised of a booklet divided into 5 types of written activities, coloured visual cards representing the black and white pictures in the booklet and a bell. Each activity of the booklet had instructions based on which the children had to respond in writing. There were three main tests, the description of which is given below:

**Test 1:** measured Concept development

Multiple choice questions-questions 1 to 15, based on the pictures of Transport, Fruits and Domestic animals, were given. Children were instructed to look at the pictures for a minute. They were requested to tick the correct response to the questions. The time limit was 15 minutes for completing this task. As soon as the bell rang they were asked to stop writing the test.
Scoring: Concept development was represented by the total number of correct responses the child gave in Test I out of the 15 questions given.

The scoring was as follows:
A score of 5 was given if 13-15 correct responses were given, score of 4 was given if 10-12 correct responses were given, a score of 3 was given if 7-9 correct responses were given, a score of 3 was given for 5-8 correct responses, a score of 2 was given and a score of 1 was given if the number of correct responses were less than 5.

**Test 2**: measured Knowledge development:
Test II had eight subtests, four of which were measured through the responses given to multiple choice questions 1 to 15, based on the pictures of Transport, Fruits and Domestic animals.

Description of subtest a, b, c, d is given below:

**Subtest a.** measured the child’s ability to recognise information from the content. Question no.1, 3,4,6,7,9,12 of the multiple choice questions tested child’s ability to recognise information from the content.

Scoring:
7 correct responses would get a score of 5,
5-6 correct responses would get a score of 4;
3-4 correct responses would get a score of 3;
2 correct responses would get a score of 2 and a single correct response would get a score of 1.

**Subtest b.** measured the ability to remember information

**Subtest c.** measured the ability to classify information. These indicated the child’s ability to retrieve and classify data appropriately and signified classification of information.

Subtest b and c. - Question no.2, 5,8,11 and 15 of the multiple choice questions tested child’s ability to retrieve and classify data appropriately and would signify classification of information.

Scoring:
5 correct responses would get a score of 5, 4 correct responses would get a score of 4, 3 correct responses would get a score of 3 , 2 correct responses would get a score of 2 and a single correct response was given a score of 1.
**Subtest d.: measured** the ability to apply previous knowledge and connect with the information from the content. Correct responses to the last type of questions would indicate the child’s ability to apply previous knowledge and choose the correct response.

Question no.10, 13 and 14 of the multiple choice questions tested **child’s ability** to apply previous knowledge and connect with the information from the content linking appropriately with the question asked.

**Scoring:**

All 3 correct responses would get a score of 5,
2 correct responses would get a score of 3 and
1 correct response would get a score of 1.

This section was kept as a multiple choice with the purpose to exclude those children from the category of “at risk of learning difficulty” who had the appropriate thinking skill yet were unable to use it owing to a difficulty in expressing oneself in English language.

Description of subtests e, f, g, h is given below:

The children had to look at the pictures marked as 1, 2, 3 that is the pictures of Park, Zoo and Market and write the answers to questions based on the pictures. The time limit for writing the answers was 20 minutes. The next four subtests e to h was measured from the responses given in sentences to questions asked.

**Subtests e to h measured the following:**

- **Subtest e:** Linking response to question
- **Subtest f:** Retrieving concept accurately
- **Subtest g:** Retrieving more than one concepts
- **Subtest h:** Establishing link between concepts.

The scoring of subtests e to h is given below:

**Subtest e, linking response to question:** 5 correct linking of response to the 5 questions would get a score of 5,
Correct linking of 4 responses to the 5 questions would get a score of 4,
Correct linking of 3 to the 5 questions would get a score of 3,
Correct linking of 2 responses to the 5 questions would get a score of 2 and
Finally correct linking of 1 response to the 5 questions would get a score of 1.
Subtest f: Retrieving concept accurately: 5 correct responses out of 5 questions would get a score of 5, 4 correct responses out of the 5 questions would get a score of 4, 3 correct responses out of the 5 questions would get a score of 3, 2 correct responses out of the 5 questions would get a score of 2 and a single correct response out of the 5 questions would get a score of 1.

Subtest g: Retrieving more than one concepts: If in any of the questions more than one concept was retrieved, a score of 5 was given, otherwise a score of 1 was given.

Subtest h: Establishing link between concepts: If more than one concept is retrieved and link between concepts is established the subject would get a score of 5. If more than one concept is retrieved and link between concepts is not established the subject would get a score of 1.

Test 3: measured Language Development

Test III had three subtests-contextual writing, syntax and semantics.

Subtest a: Contextual Writing
Contextual writing measured writing in context to the visuals provided. The children were asked to look carefully and describe the pictures marked as 1, 2, 3. The children were asked to write sentences on each in the response sheet provided. The time given for this was 7 minutes.

Scoring:
Three sentences written in context would get a score of 5, 2 sentences written in context would get a score of 4, 1 sentence written in context would get a score of 3 a sentence written though not in context would get a score of 1. Key words were given to be matched with the given responses to avoid subjectivity.

Subtest b: Semantics.
Children were asked to read the topics given below:
Things I love to do
What I want to be when I grow up
A school picnic
The person I admire the most
Children were instructed to choose any one of the above topics and write a minimum of 5 sentences on the topic chosen. They were given no guidelines and a complete freedom to write whatever they wanted according to the topic given. Based on the content written by
them, the following aspects were looked into: employing words appropriately, using expressive vocabularies, and presenting information in logical and sequential information and linking different thoughts and ideas.

Scoring:

A score of 5 would be awarded to each for i) using word appropriately ii) using expressive vocabularies iii) presenting information in a logical and sequential information iv) linking different thoughts and ideas.

A score of 1 would be awarded to each for i) not using word appropriately ii) not using expressive vocabularies iii) not presenting information in a logical and sequential information iv) not linking different thoughts and ideas.

**Subtest c: Syntax**

Syntax was measured by studying the responses given by the children in the Sharanya –A booklet. The following concepts of Grammar were taken:

- Uses capitalization in the sentence appropriately
- Uses punctuation in the sentence appropriately
- Maintains agreement of verb with the subject
- Uses articles appropriately in a sentence
- Writes/identifies main verb
- Writes/identifies main noun

Scoring:

If the child used the above criteria always-- a score of 5 would be given, if frequently, a score of 4 to be given, if sometimes-a score of 3 to be given, if rarely-a score of 2 to be given and for attempting to write a sentence a score of 1 to be given.

The total of all the scores in the above was the score for syntax.

**d. Spellings:** Total no. of words correctly spelt were calculated and a percentage was taken-
total number of words spelt correctly divided by total number of words multiplied by hundred

For example if a child had written 52 words and spelt 11 out of 52 correctly, the percentage had to be calculated first that is 11/52x100=41%. Based on this a range was provided. Each range of percentage was equivalent to a score given as follows:

80%-100% was scored as 5,
60%-79% was scored as 4,  
40%-59 was scored as 3,  
20%-39% was scored as 2, and  
0-19% = 1

These response sheets were then scored by the special educators by using Sharanya -A. Children obtaining a score of 2 or below in any of the tests of Sharanya -A were selected for intervention at level 1. Even though a lower score indicated difficulty in spellings a score of 2 or below in this component was not considered as a criterion for children being identified as “at risk for learning difficulties” provided the child had scored 3 and in all other tests.

**DESCRIPTION AND SCORING OF SHARANYA B:**

Sharanya B was the second part of the educational tool to measure the progress of the children identified as “at risk” by Sharanya A. It was based on CBM. Here content based responses of these children of the questions, set by the trained mainstream teachers, were evaluated by the trained special educators. The evaluation was made according to the components mentioned in Sharanya A that is concept development, knowledge development and language development along with the subtests of each.

The special educators were given paper pencil exam questions and answer sheets of History, Geography, Science and English corrected by the mainstream teachers. The special educators then measured the level of performance in the written examination based on concept development, knowledge development and language development.

**Test 1: Concept development**

**Scoring:**

Concept development was measured on the content taught in the school during intervention at level 1. The marks obtained by the child out of 50 were converted to a scale of 10. On the scale of 10 a child obtaining between 9-10 marks would get a score of 5, between 7-8 marks would get a score of 4, between 5-6 marks would get a 3, 3-4 marks would get a score of 2 and a child obtaining less than 3 would get a score of 1.

A score of 5 would signify appropriate concept development while a score of 1 would signify that concept development has not developed satisfactorily. This score represented the concept development score of that particular academic subject. The average score of the sum total of the scores obtained in all the academic subjects would be taken as the score for concept development.

**Knowledge Development**
**Knowledge Development** was scored based on the performance of the child in each section of the question paper. The mainstream teacher trained in the alternative mode of evaluation procedures, designed question papers of each academic subject in the following way: The question paper consisted of 4 sections, section I measuring recognition, section II measuring retrieval, section III measuring classification and section IV measuring application based questions respectively.

On a scale of 10 the following weightage was given to each section:

- 2 marks each for section I and II,
- 4 marks to section III and 2 marks assigned for section IV.

For each academic subject the marks obtained in each section of the question paper (ie. Section I, II III and IV) were written. The marks obtained in each section of academic subject were converted on a scale of 10. The total marks obtained in each section of History, Geography, English and Science was cumulatively calculated next and the average was taken.

**Scoring:**

The average marks obtained was scored in the following manner: On the scale of 10 a child obtaining 10-9 average marks would get a score of 5, on obtaining 8-7 average marks a score of 4 was given, on obtaining 6-5 average marks a score of 3 was given, 4-3 average marks would get a score of 2 and a child obtaining less than 3 would get a score of 1.

Knowledge development comprised of four sections. Score of section I signified the measure of subtest a, that is the ability to recognise information from the content. Score of section II signified the measure of subtest b that is the ability to remember information from the content. Score of section III signified the measure of subtest c that is the ability to classify from the content. Score of section IV signified the measure of subtest d that is the ability to apply previous knowledge and connect with the information from the content.

Scoring of a-d:

A net score of 5 of subtests a to d signified appropriate knowledge development in the above areas while a score of 1 signified that knowledge development is low in the above mentioned areas.

Section III contained classification based questions in all the academic subjects to record the scores of the subtests- subtest e, f, g, h.
Special educators were also trained to go through the responses given by the children in section III that is classification based questions in the same question papers of all the academic subjects to record the scores of the following subtests- **subtest e:** linking response to question, **subtest f:** retrieving concept accurately, **subtest g:** retrieving more than one concept and **subtest h:** establishing link between concepts.

**Scoring of e-h:**

Subtest e was to be scored in the following way: If the child **always** was linking response to questions (s)he would get a score of 5, if the child **frequently** was linking response to questions (s)he would get a score of 4, if the child **sometimes** was linking response to questions (s)he would get a score of 3, if the child **rarely** was linking response to questions (s)he would get a score of 2, if the child **never** was linking response to questions (s)he would get a score of 1 for at least attempting to write answers to the questions.

Subtests f to h were scored in a similar manner. A net score of 5 of subtests f to h signified appropriate knowledge development in the above areas while a score of 1 signified that knowledge development is low in the above mentioned areas.

**Language Development:**

The third area, **Language Development** comprised of three subtests-semantics, syntax and contextual writing. This test was similar to Sharanya A.

Measurement of Semantics was based on the responses focussing on the question on English Essay and Paragraph.

The abilities measured in Semantics were a). Retrieval of word appropriately, b). use of expressive vocabulary, c). presenting information in a logical and sequential manner d). linking different thoughts and ideas

**Scoring:**

A score of 5 each was given for always exhibiting a). Retrieval of word appropriately, b). use of expressive vocabulary, c). presenting information in a logical and sequential manner d). linking different thoughts and ideas ability, a score of 4 each was given for frequently exhibiting that particular ability; a score of 3 each was given for sometimes exhibiting that ability, a score of 2 each was given for rarely exhibiting that ability and a score of 1 was
given for almost not exhibiting that ability but at least attempting the question. The average score of sum total of all the scores of all abilities was taken as the score for Semantics.

**Syntax** referred to Use of capitalization in the sentence appropriately, use of punctuation in the sentence appropriately, maintaining agreement of verb with the subject, use of articles appropriately in a sentence, writing/identifying main verb and main noun. After a general review of the answer sheets of all the subjects the scoring for each of the abilities was done.

Scoring:
If the child used the above criteria always-- a score of 5 would be given, if frequently, a score of 4 to be given, if sometimes-a score of 3 to be given, if rarely-a score of 2 to be given and for attempting to write a sentence a score of 1 to be given. The total of all the scores in the above was the score for syntax. The average score of sum total of all the scores of all abilities was taken as the score for Syntax.

**Contextual writing** referred to the ability to write in the context of visuals like Pictures for comprehension in English, Questions on diagrams and organisers in Science, History and Geography. Contextual Writing is measured by the responses given by the subjects in the questions related to organisers in Science and Geography as well as picture comprehension in English.

Scoring:
The following range was given for the ability to write in context after a review of the answer sheets of all the subjects:
a score of 5 was given for exhibiting that ability always, a score of 4 given for exhibiting that ability frequently; a score of 3 given for exhibiting that ability sometimes, a score of 2 was given for rarely exhibiting that ability and a score of 1 was given for attempting to write.

The composite score of all the subtests of all the tests was calculated to determine the benchmark score for identification of nonresponders. A score of 2 or below in the composite score indicated that the child would require intensive intervention at level 2.

**DESCRIPTION AND SCORING OF SHARANYAC:**
SharanyaC is the last part of the educational tool used in this response to intervention model to identify nonresponders. Sharanya C was applied on children who had scored 2 or below in Sharanya B and were receiving level 2 interventions. It again had 3 major areas-concept development, knowledge development and language development with its subtests similar
to Sharanya A and B. This was also based on C.B.M. But in this case the special educators were given a complete map of content, procedure followed for teaching the content and how to evaluate.

Sharanya C was used in the second stage of progress monitoring to identify the nonresponders of level 2 interventions.

Test 1: Concept Development:
This test measured whether the concepts encompassed in the content taught of the academic subjects like English, History, Geography, and Science have been mastered or not.

Scoring:
. On the scale of 10 a child obtaining between 9-10 marks would get a score of 5, between 7-8 marks would get a score of 4, between 5-6 marks would get a score of 3, 3-4 marks would get a score of 2 and a child obtaining less than 3 would get a score of 1.
A score of 5 would signify appropriate concept development while a score of 1 would signify that concept development has not developed satisfactorily. This score represented the concept development score of that particular academic subject. The average score of the sum total of the scores obtained in all the academic subjects would be taken as the score for concept development.

Test 2: Knowledge Development:
The following components were studied:
- recognising information from the content,
- remembering information,
- classifying information from the content,
- applying previous knowledge,
- linking response to question,
- retrieving concept accurately,
- retrieving more than one concept
- establishing link between concepts.

Scoring:

For each academic subject the marks obtained in each section of the question paper (i.e. Section I, II III and IV) set by the special educators in the afternoon classes for children
receiving level 2 interventions were written. The marks obtained in each section of academic subject was on a scale of 10. The total marks obtained in each section of History, Geography, English and Science was cumulatively calculated next and the average was taken.

The average marks obtained was scored in the following manner: On the scale of 10 a child obtaining 10-9 average marks would get a score of 5, on obtaining 8-7 average marks a score of 4 was given, on obtaining 6-5 average marks a score of 3 was given, 4-3 average marks would get a score of 2 and a child obtaining less than 3 would get a score of 1.

Knowledge development comprised of four sections. Score of section I signified the measure of subtest a, that is the ability to recognise information from the content. Score of section II signified the measure of subtest b that is the ability to remember information from the content. Score of section III signified the measure of subtest c that is the ability to classify from the content. Score of section IV signified the measure of subtest d that is the ability to apply previous knowledge and connect with the information from the content.

Scoring of a-d:
A net score of 5 of subtests a to d signified appropriate knowledge development in the above areas while a score of 1 signified that knowledge development is low in the above mentioned areas.

The special educators gave classification based questions in the section III of the question paper of all the academic subjects for level 2 interventions. The purpose was to record the scores of the subtests- subtest e, f, g, h. While subtest e measured linking response to question, subtest f measured retrieving concept accurately, subtest g measured retrieving more than one concept and subtest h measured establishing link between concepts.

Scoring of e-h:
Subtest e was to be scored in the following way: If the child always was linking response to questions (s)he would get a score of 5, if the child frequently was linking response to
questions (s)he would get a score of 4, if the child sometimes was linking response to questions (s)he would get a score of 3, if the child rarely was linking response to questions (s)he would get a score of 2, if the child never was linking response to questions (s)he would get a score of 1 for at least attempting to write answers to the questions.

Subtests f to h were scored in a similar manner. A net score of 5 of subtests f to h signified appropriate knowledge development in the above areas while a score of 1 signified that knowledge development is low in the above mentioned areas.

**Language Development:**
The language development test measured Syntax, Contextual Writing, Spelling and Semantics.

Description of materials:
Picture cards comprising of at least three noun cards, verb cards, prepositions, conjunctions, pronouns, articles, adjectives, adverbs and helping verbs along with suffixes (ing, ed etc.) a combination of which describing the picture in complete sentence were used. Cut outs of punctuation marks and few letters in capital which would either begin the sentence or represent proper nouns.

**Administration:**
- The picture cards were presented to the class one at a time. Each child was requested to write a sentence on the picture. (At least three picture cards were presented to the class in one session).
- The set of verb, noun and other cards on parts of speech for each set of picture in a jumbled form were given to groups of children.
- They were asked to formulate sentences by arranging those flashcards. A game pattern was followed to sustain attention of children and give them motivation to learn in a stress free environment.

**Subtest a: Syntax**
It was measured by studying the responses given by the children in the cards. The following concepts of Grammar were taken:
- Uses capitalization in the sentence appropriately
• Uses punctuation in the sentence appropriately
• Maintains agreement of verb with the subject
• Uses articles appropriately in a sentence
• Writes/identifies main verb
• Writes/identifies main noun

Scoring:
If the child used the above criteria always-- a score of 5 would be given, if frequently, a score of 4 to be given, if sometimes-a score of 3 to be given, if rarely-a score of 2 to be given and for attempting to write a sentence a score of 1 to be given. The total of all the scores in the above was the score for syntax.

Subtest B: Contextual Writing:
Scoring:
Three sentences written in context would get a score of 5, 2 sentences written in context would get a score of 4, 1 sentence written in context would get a score of 3 a sentence written though not in context would get a score of 1. Key words were given to be matched with the given responses to avoid subjectivity.

**Spellings:** Total no. of words correctly spelt were calculated and a percentage was taken-
total number of words spelt correctly divided by total number of words multiplied by hundred.
For example if a child had written 52 words and spelt 11 out of 52 correctly, the percentage had to be calculated first that is 11/52x100=41%. Based on this a range was provided. Each range of percentage was equivalent to a score given as follows:
80%-100% was scored as 5,
60%-79% was scored as 4,
40%-59 was scored as 3,
20%-39% was scored as 2, and
0-19%=1

These response sheets were then scored by the special educators by using Sharanya -A.
Children obtaining a score of 2 or below in any of the tests of Sharanya -A were selected for intervention at level 1. Even though a lower score indicated difficulty in spellings a score of 2 or below in this component was not considered as a criterion for children being identified as “at risk for learning difficulties” provided the child had scored 3 and in all other tests.
Any topic was given to the class. The students were asked to write the content in 15 mts

Description of materials in Semantics:

“Teddy Bear worksheet” was developed by the researcher to facilitate paragraph writing. A stepwise visual description of the same is given below along with the instructions for the teacher:

Step i: Write the topic on the black board.
Step ii: Draw a teddy Bear on the Black board
Step iii: Tell the students to draw it in their bookas well
Instructions for the students:
The head of teddy bear contains whom, when and where words.
Step iv: The tummy of the teddy bear contains what and which words.

Step V:
The legs of the teddy bear contains why and how words.

Step vi: write each sentence against the question posed from head to toe of the teddy bear.

Step vii: Read the entire paragraph independently.

Scoring
A score of 5 each was given for exhibiting a). Retrieval of word appropriately, b). use of expressive vocabulary, c). presenting information in a logical and sequential manner d). linking different thoughts and ideas ability always, a score of 4 each was given for exhibiting that particular ability frequently; a score of 3 each was given for exhibiting that ability
sometimes, a score of 2 each was given for rarely exhibiting that ability and a score of 1 was given for almost not exhibiting that ability but at least attempting the question. The average score of sum total of all the scores of all abilities was taken as the score for Semantics.

Based on the performances given in contextual writing, syntax and semantics the language development of children receiving level 2 interventions was measured.

A composite score of 2 or below in concept, knowledge and language development would indicate that the child had not responded to level 2 interventions and need to undergo standardised assessment procedures before receiving level 3 interventions.

3.5: Data Collection Procedure:

PHASE I:

ORIENTATION

The headmasters/principals of the 8 schools were given a one day orientation programme where the researcher briefed them about the aim, duration and benefits of the study. They were informed about the details of the testing and data collection process involving screening of children who may be “At Risk for Learning Difficulties”, training of mainstream teachers and intervention to be given by mainstream as well as special education teachers.

The headmasters/principals of the eight schools gave their consent and agreed to follow uniform syllabus drawn by the researcher and this was done without deviating from the regular syllabus, to make teaching effective. All the stakeholders mutually agreed that different types of specialised resources would be used for teaching, activity based teaching would be conducted and a changed evaluation procedures would be implemented. For recording the latter systematically, a mark sheet was prepared by the researcher which would reflect children’s performances in all the modes of evaluation. The roles and responsibilities of teachers and Principals were specified and explained to the headmasters/principals. The presence of the researcher in the schools during intervention sessions to observe and to hold joint meetings with the teachers for conducting focus group interviews to gather information about behaviour of the children during teaching and evaluation was also accepted.

The headmasters/principals were introduced to the tool ‘SHARANYA’. which was used to monitor children’s performance. Sharanya comprised of three parts: a). Sharanya-A to screen at entry level to identify children at risk for learning difficulties who would receive
level 1 intervention. b). Sharanya -B- to identify non responders to level 1 intervention who would receive level 2 intervention, by monitoring progress of children who were identified as “at risk for learning difficulties” by Sharanya –A . Finally Sharanya–C –to identify non responders to level 2 intervention who would receive level 3 interventions, by monitoring progress of children identified as nonresponders to level 1 intervention by Sharanya –B . It was also agreed upon that the corrected exam sheets of paper pencil exam of non responders of Sharanya –A , post level 1 intervention would be given to the special educators, so that the non responders of level 1 intervention could be identified.

The heads of the schools also acceded to the presence of special educators in their schools during interventions at level 2 and gave their consent to make the necessary structural change required to provide level 2 interventions to children in the afternoon after regular school hours.

The principal of each school selected teachers teaching History, Geography, Science, English and Mathematics in the Vth standard of the schools taken for the purpose of this study. These teachers were given permission by their respective headmasters /principals to attend the training workshop organised by the researcher.

TRAINING OF COOPERATING RESEARCH PERSONNEL.
A 3 day training session, for 3 hours per session, was given to 25 trainee special educators. They were trained in the administration and scoring of ‘Sharanya- A’. Mock screening sessions were conducted in the use, administration and scoring of ‘Sharanya-A’.

Teacher trainees of Nirmala Institute of Education were divided into groups of 5 where a mock session was conducted to train them in screening, administration, scoring of screening tool. To maintain group bonding, homogeneity and understanding the same groups were allotted to the various schools to conduct screening. Each group was required to carry the Sharanya booklets, a bell, and visual cards and was provided with a screening key, and guidelines to administer it to provide uniformity in the procedure. One teacher trainee read out the instructions while the other four supervised the procedure by moving around the class. The supervision consisted of the following tasks: explaining the questions in vernacular if necessary, reading out the question to an individual child,
preventing copying responses. The teacher trainees were requested to record the time and ring the bell at regular intervals to indicate the time left.

VALIDATION AND PILOT TESTING:
Content validity refers to the degree to which the tool actually measures or is specifically related to the characters for which it was designed. It shows how adequately the tool samples the universe of knowledge and skills that a person is expected to master (Kahn, 1993) The tool was given to three experts—one from the field of Statistics, special education (learning Disability) and Education for content validity. After their valued suggestions certain changes were made like:
- Three sets were merged into one
- Components were changed into sections
- Instructions for students were given in the screening tool itself

Collection of items and the subtests, discussion with peer group, expert judgement, editing, and re-editing followed by try out on class V students of English medium schools in Goa, not included in the sample enabled the researcher to reach an usable battery of tests. Besides ensuring content validity, performance of children marked “At Risk” was observed to be low in academics indicating rough estimates of the technical data regarding reliability and validity of the measure. Determining strict psychometric properties of the test batteries was beyond the scope of this study and time barrier for doctoral work.

ADMINISTRATION OF THE SCREENING TOOL—SHARANAYA
Screening booklets, visual cards and a bell was provided to the teacher trainees. The children who were administered the screening tool were given the following instructions:
“Today we are going to do a fun exercise. You will be given a booklet to look, read and write. Please do not worry. This is not an exam. Please listen to the instruction carefully.”
Write your name, indicate your sex—boy/girl, age (how old are you), which class you study in, Rollnumber and the name of your school on the first page of the booklet given to you.”
The screening booklet ‘Sharanaya’ required several written exercises to be completed by the children. Before the commencement of each written exercise oral instructions were given to the children. The first written exercise was preceded by the following instruction: “Look at the pictures given below. They are pictures of transports, fruits and domestic animals. Please try to remember what you have seen. Stop looking when the bell
rings.” They were then, asked to write down the responses without seeing. The end of each exercise was signified by the ringing of bell. They were next told: “now write down what you saw. It is ok to forget but not ok to turn the page and see.”

The next oral instruction was, “Please look at the pictures again. Tick the correct alternative to the questions given: Please stop when the bell rings.

The next written exercise was preceded by the following instruction “Look at the pictures marked 1, 2 and 3 carefully. Please write a sentence on each picture. Do not worry about spellings or grammar. Please stop when the bell rings.” The booklets had pictures which were in black and white but during administration of this section laminated visual cards containing the same pictures but in colour were shown to each row of children for better visual clarity.

The next instruction, “Please write answers to the questions, based on three pictures given below. Do not worry about spelling and grammar. Please stop when the bell rings.”

For the next written exercise (write the number of the subtest) the following instruction was given: “Please read the topics given below. Choose any one of them. Write a minimum of 5 sentences on any one.” While the children were writing the final section, the teacher checked for lack of comprehension, lack of clarity in instructions, and incomplete work.

To keep children, who finished earlier than others occupied, they were asked to draw on any theme/topic of their choice.

Phase II.

40 Teachers (five from each school) who gave intervention to these children of Vth standard at level I formed the sample for set B after being selected by the principals of each of the eight schools, who taught subjects like English, History, Geography, Science, English and Maths.

These teachers were grouped school wise for the focus group interview or the narrative interview that was conducted by the researcher at the end of every week for the entire period of intervention to collect the qualitative data for social behaviour.

These teachers were given 4 day intensive training, 6 hours daily, on standard protocol approach used in RtI where research based intervention was given to the general class including both children at risk and others. The intervention was based on teaching strategies,
classroom management skill, alternative modes of evaluation to improve learning and modifying social behaviour of all the children in the general class. The present study which aimed at examining the effect of RtI on learning as well as social behaviour of mainstreamed children with learning difficulties was based on the basic premises that if learning could be made interesting, the pro learning behaviour would automatically exhibit in the classroom. It also contained a presupposition that if evaluation was stress free and within the child’s realm of knowledge it would generate positive behaviour in the class during evaluation as well.

The classroom management skill training was initiated with discussion of the behaviours noticed in the class that interferes with learning. The teachers were provided with a **SchoolSkills Checklist** (adapted from Scherer 1988) to look into the behaviours that facilitate learning in the classroom. They were asked to discuss in groups the behaviours of 5 children in their class whose 80%behaviours did not match with the ones listed in the behaviour checklist.

The teachers were told to sit in their respective groups and list down the most commonly occurring in appropriate behaviour. The behaviours listed based on the compiled intergroup responses were the following:

- Children had difficulty in following instructions,
- They were not being attentive,
- They were often showing out of seat behaviour.
- They exhibited inability to organise material required for learning. For example- note books, pencils, text books as per subjects. Their note books were incomplete or had torn pages and untidy presentations.
- There was frequent usage of abusive language in the class,
- They showed aggressive behaviour amongst peers
- There were frequent complaints made to the teacher regarding peer
- A general unwillingness to perform was observed
- There were copied responses during exams

The following is an account of the training modules of teachers’ in order to improve learning skills, as well as, social behaviour of children.

**Day 1.**

**Activity Based Teaching and Class Management Skills: Strategies for Positive Behaviour Support:**
Initially a theoretical background was given to the teachers on the aim and nature of activity based teaching. A brief theoretical background about learning disabilities, learning difficulties and intervention procedures was given to the teachers. This was followed by a demonstration lesson by the researcher on a topic from each of the academic subjects. Inputs on strategies like Role play, chart making, creating Models, giving real life experiences, creating real life situation, conducting experiments etc through power point presentations was also given. The purpose of this was to introduce teachers into a participatory environment of learning which would increase the scope of student teacher interactions, engagement of the children in meaningful activities and cooperative learning to promote positive behaviour.
The teachers were then, introduced to the planning of Activity based learning. The following schematic diagram was presented to them.

An explanation of the above schematic diagram is given below:
The chapter which was taught was divided into concepts and further broken down into sub concepts. Teachers were told to make a note of the subtasks, the time taken and the finances involved. Teachers were asked to plan the teaching strategies to be adopted to execute activity based teaching.

Teachers were requested to select from their class different group leader every time they conducted an activity and delegate responsibilities. The aim was to instil in each child a sense of purpose where each one had to fulfil some duties. The teachers were told not to impose the responsibilities on students but arrive at the task responsibilities involved through class
discussion thereby encouraging cognitive behaviour modification thereby promoting positive
behaviour in children.

**Class Management Skills**

Teachers were trained in the techniques of class management to equip them with strategies to
build a pro-learning environment with minimum occurrence of disruptive behaviour and
distractibility. Teachers were instructed to divide the children of their class into groups based
on their abilities and not according to roll numbers, to facilitate cooperative learning and peer
tutoring which integrates learning and social behaviour.

Since there was space constraints teachers were given inputs on seating arrangement in the
class to conduct the activity. This was done to reduce high noise level owing to the large class
size. The continuous movement would also cause distraction and give rise to conflict
situations. To negate these factors four children in two subsequent rows were seated where
they could perform the task assigned by simply facing each other and join the two benches to
get a large work area.

Since prosocial behaviour occurs with reinforcing positive behaviour, a reinforcement system
also was given to the teachers which they could use to control the class. Reinforcement was
not to be given to the individual but to the group as the whole, as this RtI model was based
on cooperative learning practised through group activities during teaching as well as during
evaluation. The primary purpose was to encourage the group camaraderie leading to
solidarity amongst children, intra group bonding and zeal to perform- all of which makes an
individual better equipped to handle social situations.

Often inappropriate behaviours occur due to lack of understanding of the instructions. The
teachers were thus told to use both visual and auditory instruction to explain all subtasks to
the children, so that it became easier for children to follow instructions.

Along with the activity teachers were trained to introduce word cards/phrase cards to
facilitate reading and vocabulary building simultaneously. This focus on multisensory
teaching made learning interesting and accessible to all types of learners thus bringing down
the frequency of occurrence of inappropriate behaviour.
Day 2
Teaching Strategies-organiser building

Teachers were given inputs on importance and use of organisers. A Step by step demonstration was given to the teachers through power point presentation on what is organiser and how it benefits students.

Different models of graphic organisers were shown and taught to the teachers on different subjects. Teachers were explained through an illustration how organiser building can be a sequential activity involving the children and how they could use an organiser in teaching. They were explained how to choose the key concepts, divide them further into sub concepts, use visuals wherever necessary, add key words for better linkage, use phrases to facilitate sentence formation, recognise information sequentially for classification based questions, etc.

Day3

Teaching Strategies -Guided Notes retermed by the researcher as Modified Note Book

Teachers were trained in preparing Note book Modification and strategies that would enhance storage and retrieval of data in children during exams.

The teachers were explained that Note Book Modification was the end result of teaching children through activity based teaching, using computer based presentations and preparing organisers. The following acronym was given to them for better clarity of the process:

ACTION=

- A-Activity Based Teaching to understand the concept,
- C-Charts/Chalk board/Computer assisted presentations to explain the concepts
- TI-Transferring information
- O-Through an organiser
- N-Note Book Modification
They were requested to keep the following aspects in mind while doing note book modifications:

- Should be interesting for the child so that he/she actively participates in the process and does not exhibit inappropriate behaviour
- Must Reflect activity done by the child
- Should facilitate the child in writing answers by focussing on key words
- Should have strategies for long term storage
- Concepts should be linked with organisers
- Facilitate understanding of concepts
- Emphasise indigenous Writing of answers and not mere copying from the board.

Day 4
Scheduling & Observational data recording

A Tri Monthly Planner was developed by the researcher so that the teachers could effectively plan out teaching strategies within the regular class time table. Modifications in the scheduling system was done, so as to incorporate activity based teaching, use of organisers and note book modification as the principal strategies for developing concepts within the stipulated time given to the teachers. Thus uniform syllabus was given to all 8 schools where chapters from each subject were specified month wise. A format was provided to them where they were required to colour code as red, yellow, purple and green for activity based learning, Use of organisers, Note Book Modification and Computer assisted presentations respectively. The behaviour of students was also recorded daily.

It was difficult for the mainstreamed teacher managing a class of 50 to record behaviour of each child who have been identified as “At risk” through systematic behaviour observation. Hence they were asked to jot down the behaviours of the children if they occurred inappropriately more than thrice in a session. This was done in general with regards to the following on the reverse side of tri monthly planner provided to the teachers.

1. Following instructions,
2. Being attentive,
3. Showing sit in behavior.
4. Organizational behavior by managing material of self.
5. Appropriate conflict resolution in the form of not using abusive language, aggressive behavior, communicating with peers, approaching the teacher only when it is necessary and accepting correction with respect.

This data was used for discussion during the focus group interview that was conducted during the intervention sessions. The teachers were told to observe the children’s performances during the subsequent sessions with respect to the above mentioned behaviours. They were also told to note whether a pro learning environment was being built as well. They were asked to look into the factors that were interfering with the learning environment to promote positive social behaviour. They were also requested to note down a particular child’s name if the inappropriate behaviour like children having difficulty in following instructions, not being attentive, showing out of seat behaviour, inability to organise material required for learning, having incomplete note books with torn pages and untidy presentations, frequently using abusive language in the class, being physically aggressive, making complaints frequently to the teacher about peers, often complaining of boredom and showing a general unwillingness to perform occurred more than 3 times in a session and which interfered with class learning

**Alternative Modes of Evaluation:**

- Teachers were trained to conduct 4 types of alternative mode of evaluation:
  a. Project Based Exam (P.B.E)
  b. Group discussion (G.D)
  c. Open Book Exam (O.B.E)
  d. Paper Pencil Exam (P.P.E) - in a format different from the traditional mode of paper pencil exam.

A detail of the four types of evaluation is given below:

a. **Project Based Exam (P.B.E):**

P.B.E helped to facilitate self-exploratory learning, storage of data in the long term memory, understanding of concepts, developing the skill of reading from text book, relating it to the content taught, developing writing skill, aid in storage by remembering the key terms, developing the skill in the child to formulate questions by her/himself related to the key words thereby eliminating rote learning tendency. This made the student more responsible and inculcated the habit of independent learning. It developed social skill and cooperative
learning. The teacher was able to discover other areas of competence for students who were low on academic ability.

Procedure for conducting the exam

The class was divided into groups. Heterogeneous grouping of students was made with each group comprising of students of different abilities. Few concepts were taken from a chapter, broken down into sub concepts and sequentially distributed to each group. The activity was based on the concept/sub concepts related to the chapter. Each group of students was given the responsibility of teaching it to the class through presentations, charts, diagrams, organisers etc. The teachers were given a printout of the procedure to be followed in project based exam.

Description of the exam and criteria for evaluation:

Based on a group project given to the individual groups, the students were marked on-i) Collection of materials ii) Active participation in preparing the finished product iii) Presentation of the final product. The scores in the columns excepting for presentation were based on individual performance and gave the teachers an insight into the responsibilities of the child in organising materials and procuring materials to satisfy group interest, both were important components of social behaviour.

Table: 3.4 The scoring format for P.B.E:

<table>
<thead>
<tr>
<th>Project Based Exam (P.B.E)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>During class</strong></td>
</tr>
<tr>
<td>Notebook modification (NBM)</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>

B. Group Discussion:

The group discussion was conducted to assess the student’s ability to link the project with the concepts/sub concepts used during the activities undertaken during the project based exam. It assessed the student’s ability to remember, link and retrieve information accordingly. It
also assessed the student’s ability to express oneself in English as well as ask questions. It also revealed child’s ability in communicating with peers, approaching the teacher only when it was necessary and accepting correction with respect—all three were components of social behaviour. A proficiency in group discussion also led to formulating and presenting one’s opinion and led to reduction of aggressive behaviour as everyone’s opinion was given importance.

**Procedure for group discussion:**

The group Discussion was conducted based on the project given to the students. The teacher asked both lower order and higher order questions on the topic covered. Questions given were different to different groups, to avoid intra group discussions. Each student of each group was required to note down the individual responses first which was followed by a group discussion. The group after agreeing on a single response presented it to the class. The sequence of class presentation was in the sequence in which the concepts were covered in the topic. A print out of procedure was given to the teachers.

**Description and criteria for evaluation:**

On a scale of 10—a score of 3 and below in lower order question would indicate difficulty in retrieval, while a low score in higher order question would indicate difficulty in linking multiple concepts. Though this marking was based on the individual responses that the student submits, separate points were given to each group member for discussing within the group, making a presentation to the class and asking question after the other groups present, so that the group as a whole is motivated to perform.

**Table 3.5 Scoring Format for G.D:**

<table>
<thead>
<tr>
<th>Group Discussion(G.D)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Order Thinking(L.O.T)</td>
<td>Higher Order Thinking(H.O.T)</td>
<td>Total</td>
</tr>
<tr>
<td>(who, what, when, where)</td>
<td>(why which and how)</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>
C. Open Book Exam:
Open book exam develops the ability to sieve required information from textual and note book content, develops link between question and relevant answer by searching relevant information. This mode of evaluation encourages the student to transfer data from organisers/ mind maps into answers as well as familiarises them with varying question patterns. A high score in this type of evaluation would help the teacher to identify students who have high cognitive ability but difficulty in retrieval and a low score would help in identifying children who have difficulty in written expressive language, reading difficulty, difficulty in categorisation and contextual writing.

Procedure:
The teachers were given a brief portion containing a minimum of three concepts from the text. The questions was set as per i. Recognition, ii. Classification iii. Application Based Questions. Students read their text book and wrote down the answer themselves. Teachers were given a guideline on each type of question, the details of which were given during the description of paper pencil exam. A print out of procedure was also given.

Criteria for evaluation:
The open book exam comprised of a 10 marks question paper which the child answered while referring to the text book. The marks allotted were as following:

<table>
<thead>
<tr>
<th>Table 3.6: Scoring Format For Open Book Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Book Exam (O.P.E)</td>
</tr>
<tr>
<td>Recognition(Rg)</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

D. Paper Pencil Exam:
The paper pencil exam which was held at the end of the term had a changed pattern of question paper. The paper pencil examination format was broadly divided into 4 sections.
Section 1 had the recognition type questions, it indicated the ability to link response to question as well as in recognising accurate data from a set of accurate as well as inaccurate data., section II had the retrieval type questions , which II indicated the ability to retrieve single concept correctly , section III had the classification based questions , which marked the ability in retrieving more than one concept and simultaneously systematically arranging them by linking concepts and section IV had the application based questions, indicating the ability to apply previous knowledge to present context and give reason or a rationale.

**Procedure:**

To make the task of the teachers easier in setting the question paper a tabular guideline was provided to them. This guideline contained the operational definition of each section and the details of the question types that came under each section. A sample of the guideline is given below.
**Table 3-7: Types of questions To Be Used During P.P.E.**

<table>
<thead>
<tr>
<th>Section</th>
<th>Types</th>
<th>Operational Definition</th>
<th>Detail of the questions to be set</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Recognition</td>
<td>Locating single data from the question provided</td>
<td>Tick the correct option (2 options provided)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fill in the blanks (options provided)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Complete the sentence (options provided)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fill in the key words in the schematic diagram from the word list provided.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Write the meanings from the key words given in the box</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Underline the (eg: noun /verb )</td>
</tr>
<tr>
<td>II</td>
<td>Remembering</td>
<td>Retrieving single data based on the questions</td>
<td>Fill in the blanks (options not provided)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Complete the sentence</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Answer in one sentence</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Write the meaning</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Name the following</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Correct the incorrect statement (single word replacement)</td>
</tr>
<tr>
<td>III</td>
<td>Classification</td>
<td>Retrieving multiple data and systematically organising to present as an answer</td>
<td>Match the following</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>List</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Draw a neat labelled Diagram</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Distinguish between</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>Short Notes</td>
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<td></td>
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<td></td>
<td>Brief answers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Paragraph Writing (what has been done in class)</td>
</tr>
<tr>
<td>IV</td>
<td>Application</td>
<td>Applying the knowledge and linking to personal experience</td>
<td>Give reasons</td>
</tr>
</tbody>
</table>
**Scoring:**

On a 10 point scale the weight age for each section was as follows:

- Section I- Weightage=3
- Section II- Weightage=3
- Section III- Weightage=3
- Section IV- Weightage=1

Teachers were taught the marking system of paper pencil exam post level 1 intervention. Each section of the answer sheets were to be marked separately since each section represented the subsequent levels of evaluation namely recognition, retrieval, classification and application. The total marks for the exam was 50.

Since the concepts of the above mentioned modes of evaluation was new, teachers were explained the purpose behind each exam. They were also given demonstrations and multiple practices in conducting each exam and reviewing evaluation criteria for each exam. It was important to assign marks to each type of evaluation, since the teachers required to prepare mark sheets to record children’s performances at the end of each term and a qualitative method of evaluation was unacceptable to them. Teachers were also asked to record the behaviour of the students during Project based exam, group discussion; open book exam particularly focussing on frequency of copied responses and children’s general willingness to perform activities, without stress.

A 10 point questionnaire with a rating scale was given after the completion of the teacher training to the principal of each school to be rated by the principals in consultations with the teachers involved in the training. The 10 point questionnaire was divided into three parts - part one talked about the importance of the project in today’s education. The second part talked about the teaching aspect-use of teaching strategies that is activity based learning, note book modification and organiser. The third part was about the evaluation component talking about alternative modes of assessments that is project based exam, open book exam and group discussion. The fourth component talked about the effectiveness of teacher training the
fifth component was about the validity of the process of identification of children at risk and the last was how effective the process has been in bringing about positive change in them.

**PHASE II:**

**Training of special educators**

In this phase, Training of special educators was given, to monitor progress of non responders at level 1 and identify children for level 2 intervention using Sharanya –B.

Two special educators, randomly selected, were trained separately by the researcher to use **Sharanya B, to** monitor progress of children receiving level 1 intervention in order to identify non responders to level 1 intervention. Sample answer sheets from Paper Pencil Tests 1 were used for training and correlating performances in the response sheets with that of the subtests of Sharanya- B and understanding the pattern of scoring. The training was given for 3 days with 3 hours sessions in the afternoon.

**PHASE III**

Level 1 Intervention By Teachers Trained In Phase II And Implementation Of Alternative Modes Of Evaluation

Teachers already trained to offer the level 1 intervention programme in the general class implemented the intervention through teaching strategies to the entire population of 787 children for 12 weeks.

The pilot test of the strategies used for level 1 intervention was done at Regina Mundi High School in the VIth Standard with 50 children in the general classroom in the year 2007 -08. The strategies were piloted for 4 sessions till mastery in learning strategies was obtained. Its transfer was seen on small content.

The intervention at level 1, was carried out in 8 schools of Goa on children studying in the Vth Standard by the teachers who had been trained in intervention strategies by the researcher.

The teachers were trained in using the formats for planning their schedule in trimonthly planner in which the sequence of activity based learning, use of organiser, computer assisted presentation and note book modification was planned by them. The teachers were requested to note down in the planner, the challenges faced while doing an activity based learning, or using an organiser, or doing notebook modification or the difficulties faced during conducting the different modes of evaluation. They were also requested to note down the
strategies they had adopted within the classroom to overcome those difficulties and feedbacks of students if any.

**IMPLEMENTATION OF TEACHING STRATEGIES**

**Activity based teaching:**

The teachers submitted a detailed Activity plan to the researcher according to the format given. They were requested to fill in their school’s name, class name, their name, name of the subject taught and topic name. They had to state the activity objective and write the detail of the activity in column 1, present visuals of the subtask in column 2 and description of each subtask in print in column 3.

A resource indent format was also supplied to the teachers where at the beginning of the session the teachers had to submit a month wise list of the items they needed. They were requested to write down in the format provided, where the teachers filled in the subjects taught, list of items, type of activity (during activity based teaching) or for evaluation (during Project Based Exam-P.B.E), approximate quantity required and approximate expenditure involved. This helped the school authorities to allocate finances and avoid wastage. The activities were conducted with maximum involvement of children. It was ensured that the children in this mode of activity based teaching participated at each stage of activity that is from deciding on materials, to collecting them, to assembling them and presenting them as per the teacher’s guidance.

**Use of organisers during teaching:**

Teachers used organiser to introduce the topic. She then, gradually introduced the organiser during class discussion, building up the organiser through class participation. This was followed by note book modification, sequencing a story. The teacher taught the class how to write “answer in brief” through the organiser taught. All the children were taught to use the organiser for systematic sequential recapitulation, and for formative evaluation.

**Note Book Modification:**
During level 1 intervention, teachers used their knowledge coupled with their creativity to generate some very interesting notebooks representing the class group activity, adding photocopies of guided notes in the notebook, encouraging indigenous writing in notebooks and not mere copying from the board. As a result the note books were colourful, interesting, and activity filled. It was also a reflection of adherence to teacher’s to instructions involving bringing in materials and meaningfully attaching to the notebook. The note books also contained strategies for long term storage that led to better performance in exams. Children appeared to be more organised in handling their own materials and had neat completed note books with a strong mark of their individuality on them. This definitely indicated an improvement in social behaviour and a creation of prolearning environment.

**EVALUATION**

**Paper Pencil Exam:**

The teachers taught one chapter per subject to the children in the traditional method before they attended their training programme for level 1 intervention. After their training, the teachers evaluated the children using the new mode of evaluation, i.e., recognition based, retrieval based, classification based and application based (as had been taught in the 4th day of the training session). This evaluation was like a pre-test, done prior to any intervention.

For the next three months, children were given level 1 intervention by the teachers through activity based teaching, use of organisers and notebook modification. At the end of three months, the children were evaluated again using 4 section question paper containing the 4 types of questions, namely, recognition based, retrieval based, classification based and application based (as had been taught in the 4th day of the training session) post intervention.

The mainstream teachers recorded the performance of the children as P.P.E 1 (pre intervention) and P.P.E2 (post intervention) in the revised mark sheet provided to them. On comparison of the two performances of the children an improvement in P.P.E2 would indicate the efficacy of the training of the teachers.
Open Book Exam: The children were exposed to two open book exams, one after a month of intervention and the other after the second month of intervention as per the guidelines provided by the researcher to the teachers on the 4th day of the training sessions. The first open book exam was on a trial basis, as in most of the students were made familiar with the new method of evaluation. The second open book exam was taken for one period for each subject. Excepting one school all the others cooperated and submitted the question paper one week in advance for the perusal of the researcher. After the minor modifications at the weekly meetings, children were subjected to this mode of evaluation. The marks were recorded as per the format. Teachers were surprised when some of the children who were otherwise low achievers performed well. But almost all the schools reported the presence of a percentage of students who had scored very low in spite of the content being provided.

Project based Exam:

Teachers conducted project based exam at the end of two months. The teachers after a joint meeting divided the class into groups of maximum 6 students. Each group were composed of students of varying skills and abilities. The project was similar to on any of the activities that the student had got exposure to during activity based teaching

After the project plan was approved by the researcher, the teacher assigned the topic to each group. Students were given one period where each group through guided assistance from the teacher decided on the delegation of responsibility within the class member. They were informed three days in advance, so that they could start collecting the materials.

Two class periods were used to conduct project based exam. The teacher explained the subtasks orally and through a visual that was displayed till the completion of the project based exam.

Students were marked on collection of materials, participation during the project. The marks were given, based on individual performances. The teacher went around each group to monitor and assess each student. There were separate marks assigned for presentation based on group performance.
**Group Discussion:**

The teachers conducted the group discussion, immediately a day after the project was presented. The topic of the group discussion was based on the topic covered during the project. Each group was given a set of questions (maximum 4) to which they wrote down individual responses first. These answers were discussed in a group and when that particular question was asked, the children, one at a time responded by reading out the answer. The children were given 1 class period for this. The group collectively earned the marks. Children could not refer to the text book during group discussion.

**IDENTIFICATION OF CHILDREN FOR LEVEL 2 THROUGH SHARANYA B AND ALTERNATIVE MODES OF EVALUATION.**

The teachers using the techniques of alternative modes of evaluation identified children, who scored less than 30% in any subject through any mode of evaluation, were identified as non responders to intervention at level 1. Sharanya B’ monitored the progress of students with learning difficulties receiving level 1 intervention. This was done by scoring the corrected answer sheets of History, Geography, Science and English, scoring them as per ‘Sharanya B’. The progress of children identified as “At Risk” in phase I were monitored by Sharanya-B by the special educators at the end of 12 weeks. Children who scored 2 and below in the composite score of all the tests of ‘Sharanya B’ were identified as non responders of level 1 intervention.

Children who scored less than 30% in any subject through any mode of evaluation and those who scored 2 and below in the composite score of all the three subtests of Sharanya -B received level 2 intervention.

**CONDUCTING FOCUS GROUP INTERVIEWS WITH TEACHERS IN EACH SCHOOL**

Based on their daily recording of observational data in the trimonthly planner, a narrative interview was carried out where data was recorded by the researcher for qualitative analysis.
This focus group interview was conducted by the researcher in each school on a weekly basis. Teachers were given a list of 6 questions given below:

1. Was there a change towards positive behaviour of children with regards to 
   a) attention, b) sit in behaviour c) distractibility d) disruptive behaviour
2. Were the class management skills effective - if so how?
3. Did the use of organiser as a strategy generate response from children with learning 
   difficulties?
4. Did the organisational skills of children show improvement?
5. Was there a general motivation and willingness to learn?
6. Did the alternative modes of evaluation have a positive impact on behaviour?

PHASE IV: Training of special educators and mainstreamed teachers for level 2 intervention

The special education teachers along with the mainstream teachers were trained to develop concepts in children using strategies like VAKT, structured teaching, and using resources like flash cards, visual schedule, and computer assisted presentations of the chapters covered in the class. These presentations were based on the planning sheet discussed later where the contents was further concised and part organisers used. This was to facilitate concept development and writing of answers in all the concerned subjects as most of the teachers reported that these children had great difficulty in writing their answers. There was also training for teachers, on text book and note book modifications to facilitate knowledge development. The teaching staff comprising of mainstream teachers and special educators were trained in conducting non textual activities to facilitate language development.

The training was for 3 days with 6 hours duration each day, based on Curricular Adaptation taken from Ebeling, Deschnes and Spragne (1994).

TRAINING IN CURRICULAR ADAPTATION:

The first type of adaptation that was taken was quantity; the number of items that the learner is expected to learn or number of activities student will complete prior to assessment for mastery were adapted. The manner in which the reduction in the quantity of content to be learned by children receiving level 2 intervention was done in the following way:

The teachers were asked to break down the chapter according to paragraph, depicting the concepts incorporated in each paragraph and key words required to be taught in each
paragraph, so that they are able to choose concepts, keywords and questions from the planning sheet that were absolutely necessary for the child.

To facilitate this planning, a planning sheet was provided to the teachers where column 1 denoted paragraph number, column 2 denoted concepts present in the paragraph and column 3 denoted the paragraph where the key sentences/phrases, key words, grammatical aspects to be covered were highlighted. The mainstream teachers planned for the entire chapter and then used their discretion in selecting the content that they considered important.

An illustration of the planning sheet prepared during training session is given below:

**Planning Sheet 1-Instructional Methodology**

<table>
<thead>
<tr>
<th>Paragraph No</th>
<th>Concepts</th>
<th>Modified text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Para 1</td>
<td>Life style</td>
<td><img src="image1.png" alt="Image" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>**Once there was a Monkey. He had nothing to do. Throughout the day he from one branch to another, from the <strong>Whatever fruits he would get he would eat and enjoy himself. (Nature)</strong></td>
</tr>
<tr>
<td>Para 2</td>
<td>Thinking and sharing work</td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>The Monkey the thought one day and also the insects world that set aside for a rainy day, he would also do the cultivate the fields was hard work. It comfortable doing it alone and decided share the work with him. (Nature)</strong></td>
</tr>
</tbody>
</table>
The **second** type of adaptation that was taken was *input*, which meant adapt the way instruction is delivered to learn. This mode of teaching was emphasised during training as most of the findings of narrative interview indicated that confusion in understanding, led the children to disruptive behaviour along with distractibility and inattention. The focus of the training was to make the mainstream teachers and special educators deliver the lessons to the small group after class in such a manner, that clear understanding of concepts took place and they are able to cope in the class without causing disturbance to the general class.

*a. Activity based teaching:* 
Teachers were trained on a more structured activity based teaching followed by writing key words, locating answers of wh questions based on key words from the text book and finally writing down the answer himself/herself. They were given a metacognitive strategy-RTLLW(R=read the question, T=think about the answer=Locate the answer in the text book=L=Learn the key points W=Write the answer using the key points.)

The purpose of this was manifold.

- aiding in storage of data in LTM,
- connecting with the question
- developing the skill of reading from text book,
- relating it to the content taught
- understanding and remembering key concepts and aiding in learning by remembering the key terms

<table>
<thead>
<tr>
<th>Para 3 and 17</th>
<th>Decision making</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Para 4</th>
<th>Concern</th>
</tr>
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</table>
developing written expressive language,
• developing the skill in the child to formulate questions by her/himself related to the key words thereby eliminating rote learning tendency and
• to facilitate self exploratory learning.

b. Computer Assisted Presentations (C.A.P)
The special educators who were trained in Computer Assisted Presentations (CAP) during their teacher training course were instructed to make computer assisted presentations of the topics included in the syllabus and a mock session was conducted where the CAP was demonstrated to the teachers.

c. Text Book Modification:
The teachers were trained in text book modification to familiarise the child with textual matter, encourage reading print, facilitate better understanding of concept and aid in information storage leading to the child answering questions during examination. Strategies used in text book modification was using colour coding, subheadings for lengthy print matter and converting complex and compound sentences into simple sentences

d. Note Book Modification:
Modification of note book in level 2 involved use of part organisers which represented the “answer in brief “in the notebooks prepared with the help of organisers along with colour coded answers in the note books with visual representations done by the child. The difficult words in the organiser/modified content were broken down into syllables.

INPUT FOR LANGUAGE DEVELOPMENT
Separate inputs for language development was required for intervention at level 2, as there were children who needed more attention due to repeated failures. Most of children exhibited behaviours like inattention, noncompliance and lack of interest in academics.
For most of the children, expressing oneself in English was the principal barrier to learning. Different defence mechanisms were adopted by children to avoid participating in the class activity-some refused to write, some preferred to look outside, few distracted their friends who were writing and many had disorganised books with scribbles.
Thus at this level, language development had a greater purpose –reviving the children’s interest in learning. The renewed interest would lead to positive social behaviour. Activities
thus were planned to target their affective domain rather than the intellectual domain. Hence teachers had activities concerning non textual matter where the principal focus was on language development. For example, reading from non textual books, giving children exposure to story books and giving art or craft group activity. Based on the objective set for the day, the teacher was trained to teach the verbs used in the activity/nouns covered in the activity /give the concept of past, present through the activity and develop the skill orally describing the activity.

Teachers were encouraged to make the next five types of adaptation mainly to diminish the frequency of disruptive behaviour by tailoring specific children friendly learning environment which was otherwise not possible in the general class owing to the large class size. These were adaptations involving time, participation, difficulty, output and level of support.

The **third** type of adaptation was *time*, ie to adapt the time allotted and allowed for learning, task completion, or testing. The mainstream teachers expressed their inability to give extra time within the existing system in the general class, thus extra time for task completion was given in the afternoon sessions.

The **fourth** adaptation discussed was *participation* ie to Adapt the extent to which a learner is actively involved in the task as extensive task involvement would reduce the frequency of inappropriate behaviour. The very nature of activity based teaching, language immersion programmes that involved the child at each step of the task facilitated greater participation and understanding of concepts thereby reducing inappropriate behaviour.

The **fifth** adaptation type discussed was *difficulty* ie Adapt the skill level, problem type, or the rules on how the learner may approach the work. Most of the inappropriate classroom behaviours occur because the child does not understand what is being taught in the class. With appropriate instructional arrangement and student specific teaching strategies the difficulty level was reduced and it became easier for the children to approach the task thereby facilitating appropriate social behaviour in the afternoon sessions.

The **sixth** type of curriculum adaptation was *output* ie adaptation on how the learner can respond to instruction. Often children exhibited inappropriate behaviour owing to low performance in the exams. Modifications made in the evaluation procedures, gave a sense of success, improved self esteem and a general motivation to learn was observed. Since the mainstream teachers did not have the time to conduct such evaluation procedures, the special educators at the end of each session conducted such evaluation comprising of multiple choice questions, question paper with visual representations and open book exams based on
the content taught by the teachers. There was an improvement in social behaviour, as well as, in academic performance.

The **seventh** type of adaptation was *level of support*. This was in the form provided by the special educators through the language immersion programme. Children selected for level 2 were given intervention thrice a week for 12 weeks by the mainstream teachers of the school having undergone training in implementing the remedial program and twice a week for 8 weeks by special educators. Children were identified for level 3 intervention using ‘Sharanya–C’.

**TRAINING OF SPECIAL EDUCATORS FOR MONITORING PROGRESS OF CHILDREN RECEIVING LEVEL 2 INTERVENTIONS:**

The objective of interventions at level 2, was to monitor the progress of those who were receiving after class remediation by the teachers and to identify children who were not responding to level 2 interventions and would be referred for standardised formal assessments before going for level 3 interventions.

Since there was no system of separately setting of question papers on all academic subjects and correcting them by the mainstream teachers for the children receiving level 2 interventions, Sharanya-C came in where the special educators conducted evaluations and measured the performances of children in different areas.

The data collection for monitoring progress and identifying non responders was the responsibility of the special educators at this level. Since the main difficulty of level 2 children were writing answers to questions in the paper pencil exam, the special educators were instructed to teach the children to write answers sequentially and then evaluate those responses using Sharanya –C.

The special education teachers were explained that a minimum of three “Short questions” based on the “answer in brief”, which had been previously done in the class by the mainstream teacher had to be taken. Part organizer was provided to each question. Children were requested to write down the answer in the evaluation sheet provided. This was done in a stepwise manner exhibiting only the relevant part of the part organizer to the children until progressively the entire organizer was exposed to write “answer in brief”. The process was repeated for all academic subjects. The special educators were first trained, on the procedures of training children to write answers in brief, which the mainstream teachers reported was the
area where these children faced the maximum difficulty. Often these questions were left blank, or responses were copied or responses showed forgetting. This facilitated concept and knowledge development.

It was necessary to train the special educators on the method of intervention and the techniques of group evaluation which contained the maximum language immersion activities, so that children would be able to write in context to the visuals provided in grammatically correct sentences with appropriate use of capitalisation, punctuation articles maintaining agreement of verb with the subject, writing the main noun and main verb using adjectives, adverbs, pronouns, prepositions and conjunctions wherever necessary.

Most of the children receiving level 2 interventions had not written even a word for paragraph writing, and the content of the few children who had written lacked clarity of thought, or elaboration of ideas. Thus special educators had to be trained to develop in children, a basic level of thinking required to construe a paragraph.

When asked to write a paragraph on a given topic if a child retrieves data without visual input, retrieves word appropriately, uses expressive vocabulary, presents information in a logical and sequential information and links different thoughts and ideas by systematically presenting information then his/her semantics has developed.

The special educators were trained on the usage of “teddy bear worksheet” - a work sheet developed by the researcher to facilitate paragraph writing. A stepwise visual description of the same is being given below along with the instructions given by the special educators to the concerned children.

Step i: Children, Read the topic on the black board - “Class Picnic”

Step ii: Look at the teddy Bear on the Black board

Step iii: students draw it in your book as well.

Look at the head of The teddy bear. It has whom, when and where words.

“With whom did you go for the class Picnic” - please write down the answer. In that same paragraph write the answers of -

Where did you go for the class picnic? When did you go?

Since the head is finished we will go the the next
paragraph-the tummy

Step iv:
The tummy of the teddy bear contains what and which words.
See, the tummy is fat, so more sentences will come in
Please write down what things you took with you for the picnic, what games you played, what food you ate and which places you visited during the picnic-all in different sentences.

Step V:
The legs of the teddy bear contains why and how words.
These are two short questions but very important. Can the teddy bear stand without its feet? No, it falls. So if your essay has to stand firm don't forget these- did you like the class picnic –why? How would you like to remember your class picnic?

Step vi: Student write each sentence against the question posed from head to toe of the teddy bear with help from the teacher.

Step vii: Now Read the entire essay on your own. Please add anything else related to the topic if you want to but at the right place of the teddy bear.

This additional training of special educators on progress monitoring using Sharanya-C, in coordinating with the mainstream teachers for identifying and preparing behaviour modification programme was given separately for 5 days, 3 hours daily.

OBSERVING BEHAVIOURS OF CHILDREN
Based on the observations and narrative interview data about 40 children in the class still exhibited behaviours like distractibility, inattention and disruptive behaviour. It was also
noticed that some of these children had difficulty in expressing themselves in **English** and hence were sidelined during group discussions. Though all the children actively took part in project based exams, some of them could not read from the text books and thus scored very poorly in the open book exams. These children were ridiculed by their peers due to their inability to perform and thus resorted to abusive behaviour inside the class.

The special educators were requested to observe the behaviours of these children during sessions and discuss during the focus group interview sessions held with the teachers and researcher every week based on the following:

- children having difficulty in following instructions, not being attentive, showing out of seat behaviour, inability to organise material required for learning, having incomplete note books were incomplete with torn pages and untidy presentations, frequently using abusive language in the class, being physically aggressive, making complaints frequently to the teacher about peers, often complaining of boredom and showing a general unwillingness to perform.

Special educators were trained to build a structured environment for teaching where clear cut instructions was to be given to the children. Since most of these children had difficulty in understanding English, the special educators were asked to use Hindi and Konkani simultaneously. Special educators were requested to use organisers at each stage, give visual descriptions so that there was no ambiguity in teaching and children were not confused. Previous observation at level 1 revealed that often confusion in children in understanding what the teacher wants had given rise to inappropriate behaviour.

No separate reinforcement was planned. The colourful Bookworm library books were used as reinforcements. This would serve two purpose-revive the child’s interest in studying and bring in language development. Also the activities for language and concept development were planned in such a manner that they were interesting for children, gave them opportunities to move about in and outside classroom. Edible reinforcements were only used so that children come to attend the sessions in the afternoon after class.

Computer presentations shown by the special educators were also prepared in a manner to generate and retain interest. They were made interactive to hold children’s attention.

At this stage, the special educators were asked to note down the occurrence of inappropriate behaviour if any, if it occurred more than thrice in the sessions.
PHASE V:
LEVEL 2 INTERVENTIONS
A systematic observation of the children identified for level 2 interventions revealed the following behaviours predominantly exhibited by these children. About 40% of these children were inattentive and showed out of seat behaviour during writing activity. Though they were enthusiastic during activity based teaching and organiser building, their notebooks were disorganised. During classroom teaching they were distracted, often abused the peers who responded to the class instructions and disrupted the class.

The strategies adopted to create a positive learning environment in the afternoon class sessions were the following:

- Student participation was encouraged to promote positive learning environment during writing activities as inability to write answers led to poor performance in children which in turn was responsible for frequency of disruptive behaviours in the class.

- The special educators and teachers were teaching concepts in academic subjects using intervention strategies mastered at level 2 intervention like using organisers, part organisers and note book modification and using specialised teaching learning materials like flash cards, cue cards, visuals, visual schedule, computer assisted presentations or any other relevant material specific to strategies in which the special educators had already received prior training to facilitate understanding of concepts and make children more attentive to the task.

- This was followed by structured writing activity where a long question was divided into three smaller parts and each part was taught from the part organiser, written from the organiser and written without the organiser and finally all the parts were written together. A proficiency in writing could lead to an increased confidence.

- Continuous practice on 4 sectioned question paper with section I being on recognition based questions, section II being on retrieval based questions, section III being on classification based questions and section IV being on application based questions was also given.

- Concept understanding was also brought in through group activities where each group through activities tackled two sub concepts which were followed by chart making
and group discussion. Constant in task activity was practised to control disruptive behaviour. Role play was used as one of the strategies during group activity.

- Language immersion activity for positive behaviour support.

As mentioned earlier no separate reinforcements were planned here. The children at this stage had shown interest in learning by participating actively in activity based teaching. They had attempted to understand concepts through the several teaching strategies practised in level 1. Their main difficulty at this stage was that they could not write. This innate difficulty had lowered their self esteem. So the main strategy followed by the teachers and special educators was to give them initial feeling of success through relatively easy tasks and later on trough the structured activities described earlier guide them through the tasks and build their self confidence. Aiming for success was the only motivation practised here.

Most of the children had difficulty expressing in English. Majority of these children had low self esteem and showed “learned helplessness”. Even though they could understand the concepts after the activities they had difficulty in reading, writing and thus had a tendency to copy response whenever the situation so demanded. It was a viscous cycle that was created—lack of understanding the language led to non understanding of concepts, leading to lack of interest in academics thereby giving rise to inattention, disruption, disinterest which again hindered.

Thus the following activities were given to children to create a positive learning environment and modify disruptive behaviours:

1. **Activities were planned to develop motivation to learn** during and after class intervention. The main purpose behind this was to tackle behaviours like inattention, hyperactivity, disinterest in reading, inability to copy from the board. A series of books were provided to the teachers. The books were at different levels—some for early learners, some for primary level readers, while some contained only pictures. Based on the assessment the levels were decided for each child. Children were made members of a library in Goa called “Bookworm”. A box of books was supplied by them. At least 15 mins of each session was spent in developing independent reading habit so that these children get interested in studying. Children were responding in various ways.

2. For children who showed disinterest and unwillingness to think, were distracted all the time, did not take part in activities at all. Thus activities were planned with the bookworm books, quickly shifting tasks so that they develop an interest.
3. Children were given a free play session once a week where they could choose from an array of books. The purpose again, was to increase their willingness to learn. The responses were varied—one child reproduced the cover page visually, some reproduced a page visually and copied few words - One child reproduced the concept of the story visually and copied the main parts meaningfully selected and expressed why she liked the story. She also spoke about the key concept that made her like the story. Another performed exercise on Grammar (past and present tense) without being instructed, gave justification, presented a rationale and even related to his personal experiences.

4. The special educators gave exploratory activities to children to develop interest in learning to develop skills in grammar and written expressive language, children were asked to prepare charts of objects based on shapes taught in the morning session and each group member was asked to describe their structure. Children were asked to go outside the classroom and collect objects of interest, paste them on a chart paper and write in detail about that particular noun (object).

5. Craft activity was given to the students. They were asked to list down the actions that took place during the activity. These were verbs. The activity getting over, gave the concept of past and present.

6. Children were asked to note down the different actions that got over in the past tense. Role play was done by the students based on conflict situations and the ways to resolve the conflicts thereby developing language.

7. Sentence building activities involving kinaesthetic was given specifically for children with low attention span and poor ‘sit in’ behaviour. These activities involved games like Simple Simon, picture card description; dramatisation and explaining role play situations into sentences.

8. Since most of these children had poor word attack skills and poor fluency in English language they were reluctant to write. To cover for their inability they made all sorts of excuses ranging from tiredness, not interested in writing, boredom, pain in arm etc. To increase their motivation and to incorporate an element of fun, spellings were taught through play way method that the special educators were trained in.

9. Teaching staff narrated stories, which the children were asked to represent in drawing. In some cases children only drew, in other cases children wrote few words and in few cases children tried to narrate the story themselves. In these sessions emphasis was not on constructing grammatically correct sentences but to feel the joy of expressing.
The main purpose of such exercises was to motivate the children to pay attention, talk in front of the class, relax the children and makes them realise that school and studies were an enjoyable experience and not a fearful one.

10. Special educators narrated situations and asked the children to enact how they would behave in such a situation. This was followed by a discussion where appropriate/desirable behaviours were spelled out. / This exercise instilled appropriate behaviours and enhanced social behaviours

Conducting focus group discussion with mainstream teachers and special educators
A focused group discussion with mainstream teachers and special educators was conducted by the researcher on the following points:

A list of 6 questions given below:
- Was there a change towards positive behaviour of children with regards to a)attention,b)sit in behaviour c)distractibility d)disruptive behaviour
- Were the use of structured activities effective-if so how?
- Did the use of part organiser as a strategy generate response from children with learning difficulties?
- Did the organisational skills of children show improvement?
- Was there a general motivation and willingness to learn?
- Did the alternative modes of evaluation have a positive impact on behaviour?

A daily meeting was held between the researcher and the special educators to get feedback and plan a highly motivational enriched environment facilitating student learning. Since each school had a different set up, the availability of resources, material, designing and arranging physical environment was school specific.

After a week of teaching in the afternoon sessions, instructional arrangements and student specific teaching strategies were determined by the teaching staff through a common discussion between the mainstream teachers and special educators.

Lesson format and setting curricular goals specific to the lesson was uniform across schools and practised uniformly by the mainstream teachers as per the training received for adapting the curriculum.

Since the special educators had the responsibility, as well as, the flexibility (within the parameters provided) to evaluate, they tried out a variety of evaluation procedures starting
from a mere recognition level to give them a feeling of success, proceeding gradually to the higher levels. The purpose behind giving the students a feeling of success was principally to make them more confident in their own responses and refrain them from being inattentive, disrupting the class, making copied responses and to increase sense of ownership and responsibility.

Monitoring progress of children receiving level 2 intervention and identification of children for Level 3 intervention

Children selected for intervention at level 2 were given intervention thrice a week for 12 weeks by the trained mainstream teachers and twice a week for 8 weeks by special educators. The duration of intervention was 3 hours for 5 days a week after school. This continued for 8 weeks. A post test observation revealed a marked increase in positive classroom behavior.

The nonresponders who were identified by the special educators using Sharanya-C at the end of 12 weeks had to undergo standardised testing procedures to identify the exact nature of learning difficulty.

At the end of phase V, 18 out of 81 children were identified for standardised assessment procedures for diagnoses of specific learning difficulties. Nine children were sent back for only level 1 intervention in the mainstream classroom. The rest of the children received level 1 intervention in the mainstream classroom and continued with the level 2 intervention in the afternoon sessions for maintenance of progress.

The 10 point questionnaire mentioned in phase II was again given to the Principals to be rerated in consultation with the teachers involved in the study. The purpose was to compare the two responses that is responses - post training of the teachers and responses- post interventions given by the teachers to understand whether RtI has been able to establish itself as a system in the schools.
Table 3.8: Phases at a Glance:

<table>
<thead>
<tr>
<th>Phases</th>
<th>Data collection Procedure</th>
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| I      | a. Orientation programme for principal on aim, duration and benefits of the study.  
| II     | a. Training of mainstream teachers on teaching strategies, class management skills and alternative modes of evaluation to improve learning and social behaviour of all the children in the general class. This was to be implemented during Level 1 intervention, in the mainstreamed class including children identified as ‘At Risk’ for learning difficulties.  
        | b. Training of special educators to monitor progress of non responders at level 1 and identify children for level 2 intervention using Sharanya –B |
| III    | a. Level 1 intervention by teachers trained in phase II and implementation of alternative modes of evaluation  
        | b. Identification of children for Level 2 through Sharanya B and alternative modes of evaluation.  
        | c. Conducting focus group interviews with teachers in each school to carry out narrative interview based on six questions on behaviours of the children during teaching as well as evaluation given to the teachers to collect data for qualitative analysis.  
        | d. Measuring Effectiveness of teacher training by comparing performances of children in paper pencil exam held during pre training of teachers in the intervention programme and post training of teachers in intervention programme |
| IV     | a. Training of special educators and teachers to give intervention to level 2 children.  
        | b. Training of special educators to monitor progress of children using Sharanya –C.  
<pre><code>    | c. Training of special educators to prepare case studies for behaviour modification of children identified with inappropriate behaviour |
</code></pre>
<p>| V      | a. Level 2 intervention |</p>
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<tr>
<td>b.</td>
<td>Language immersion activity for positive behaviour support.</td>
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<tr>
<td>c.</td>
<td>Conducting focus group interviews with teachers as well as special educators</td>
</tr>
</tbody>
</table>
| d. | Monitoring progress of children receiving level 2 intervention by Sharanya–C  
And Identification of children for Level 3 intervention through Sharanya–C |