CHAPTER - IV
DEVELOPMENT OF INSTRUCTIONAL MATERIAL

The instructional material in the present study was developed for two different teaching methods- adapted self-regulated strategy model and conventional method. For adapted self-regulated strategy model, twelve paragraphs along with scaffolding material were developed. On the other hand, lesson plans were developed for conventional method. Instructional material for adapted self-regulated strategy model and lesson plans for conventional method was developed for four types of paragraphs presented below in Fig. 4.1:

Fig. 4.1

![Diagram of paragraph types](image)

Three paragraphs were selected and developed on each type of paragraph for adapted self-regulated strategy model and conventional method. In simple words, the subject matter for both the methods was same, but the process of development of the material was quite different. Development of instructional material in this chapter deals with:

4.1 Task Analysis

4.2 Development of Instructional Material for Adapted Self-regulated strategy model along with scaffolding material, and

4.3 Development of Lesson Plans for Conventional Method

4.1 Task Analysis

In order to develop instructional material for adapted self-regulated strategy model and conventional method, task analysis was prepared for twelve paragraphs consisting of four types of paragraphs. In the words of Polson (1993), the first step in the design of any instruction is task analysis to determine what should be taught.
Gagne (1977) is of the view that task analysis is the process of breaking down tasks into their simpler components is called task analysis.

Jonassen, Tessmer & Hannum (1999) in their book ‘Task Analysis Methods for Instructional Design’ mentioned that Instructional designers perform task analysis in order to determine:

1. the goals and objectives of learning
2. what task performers do, how they perform a task or apply a skill and how they think before, during, and after learning
3. the function of knowledge (declarative, structural, and procedural knowledge) which characterizes a job or task
4. which tasks, skills, or goals ought to be taught, that is, how to select learning outcomes that are appropriate for instructional development
5. which tasks are most important - which have priority.
6. the sequence in which tasks are performed and should be learned and taught.
7. how to select or design instructional activities, strategies, and techniques to foster learning
8. how to select appropriate media and learning environments
9. how to construct performance assessments and evaluation

Thus the chief purpose of the task analysis is to help the teacher to determine the specific task which the student has to perform in achieving a given objective.

The steps for task analysis are given below:

**4.1.1 Writing Terminal Objectives in Behavioural Terms**

**4.1.2 Identifying Entry Level Behaviour**

**4.1.3 Writing Task Description**

**4.1.4 Writing of Types of Learning involved in Task analysis**

**4.1.1 Writing Terminal Objectives in Behavioural Terms**

The purpose of teaching is to help the learner to attain the mastery of the topic. This mastery behavior is depicted as terminal objective in task analysis. Getting a clear statement of the terminal objective is the first step to design the
instruction. For writing terminal objective, Mager approach (1962) was followed because it identifies terminal behaviour by name and can specify the kind of behavior that will be expected as evidence of objective achievement by learner.

In this study, the researcher wrote terminal objectives for twelve paragraphs to be taught through adapted SRS model & conventional method.

4.1.2 Identifying Entry Level Behaviour

Before learning any new knowledge, the learner must have some knowledge related to new topic. This previously acquired knowledge level is said to be the entry level behavior of the learner. The entry behavior is the beginning line from which the terminal behavior or the end product is shaped.

In this study, the researcher identified the entry level behavior for each terminal behavior with respect to each type of paragraph to be taught.

4.1.3 Writing Task Description

It is a full description of terminal behavior. In this step, the task is broken down into sub-tasks. The knowledge or information related to each paragraph was considered as a task and this task was further divided into different sub-tasks. This breaking down of content in subsequent smaller parts was done to the maximum possible limit which could be easily taught to students. In other words, the content of each paragraph was broken down into smaller and independent units but related to whole content at the same time. These broken down components of content were then systematically organized in learning hierarchy that supports types of learning involved in learning those components.

In this study, the researcher broke the task into sub-tasks considering the entry and terminal behavior of the students.

4.1.4 Writing of Types of Learning involved in Task analysis

Determining the types of learning involved in teaching a concept is significant. While analyzing the task, types of learning are written corresponding to each sub-task. It helps in presenting the content in a hierarchical manner.

In this study, task analysis was done for all the twelve paragraphs. Task Analysis of all the twelve paragraphs is given in appendix I.
4.2 Development of Instructional Material for Adapted Self-regulated Strategy Model and Scaffolding Material

Adapted self-regulated strategy model is a learner centered approach. The purpose of this approach was to make students independent in paragraph writing skill. To fulfill this purpose, twelve paragraphs and scaffolding material were developed on the basis of adapted self-regulated strategy model and developed self-regulated strategy ‘RECOWER’. Adapted self-regulated strategy model is blended with developed self-regulated strategy ‘RECOWER’. The development of instructional material was done under following three stages:

4.2.1 Preparation Stage
4.2.2 Writing Stage
4.2.3 Tryout Stage
4.2.4 Evaluation Stage

4.2.1 Preparation Stage

This stage is very important for the development of instructional material and scaffolding material because following activities were done at this stage:

A. Writing Assumptions about the students

Some assumptions were made about those students for whom instructional material was to be developed. These were:

Class : IX
Average age : 14 years
Sex : Boys and Girls
Languages known : Hindi & English
Medium of learning : English

B. Topic Selection

Twelve different topics belonging to four types of paragraphs were selected. Those topics were selected which were according to the mental level of students and related to syllabus of English textbook of IX class. The selection was done very carefully to match each topic with the type of paragraph it belongs to. The list of
these topics is given below in Table 4.1:

**Table 4.1**
Selected Twelve Paragraphs of Four Types

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Type of Paragraph</th>
<th>Topics of Paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Persuasive</td>
<td>1. Pollution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Smoking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Global Warming</td>
</tr>
<tr>
<td>2</td>
<td>Narrative</td>
<td>1. An Embarrassing Experience</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Preparations For My Birthday Party</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. The Annual Prize Distribution Function</td>
</tr>
<tr>
<td>3</td>
<td>Expository</td>
<td>1. Making of Paper</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Opening A Bank Account</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Growing of A Plant</td>
</tr>
<tr>
<td>4</td>
<td>Descriptive</td>
<td>1. The Coconut Tree</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Red Fort: Pride of India</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. The Sunset</td>
</tr>
</tbody>
</table>

**C. Formulation of objectives in Behavioral Terms**

For bringing modification in the behavior of students, some instructional objectives were formulated. In this study, these objectives were framed for paragraph writing for all the twelve paragraphs.

**D. Development of the Criterion Referenced Tests**

Before exposing the students for experimentation, experimental group and control group students’ previous knowledge regarding each paragraph was tested. This testing was done using criterion referenced test. So, twelve different CRTs for twelve paragraphs were prepared. Each CRT solved dual purpose because the same
CRT was also used to measure the performance of students after having taught each paragraph. The development of these tests are given in detail in chapter V and the developed CRTs are given in appendix V.

### 4.2.2 Writing Stage

This is the stage where the actual developmental work of instructional material took place. All the instructional material developed for the present study was based on adapted self-regulated strategy model which is based on Self Regulated Strategy Development model developed by Graham, Harris, MacArthur, and Schwartz (1991). Writing stage includes:

I. Writing Instructions for the Students

II. Writing Instructional Objectives in Behavioural Terms

III. Writing of Instructional Material for Adapted SRS Model

IV. Editing and Reviewing of Instructional Material

**I. Writing Instructions for the Students**

Before the usage of instructional material, students were provided some instructions. It was necessary to provide instructions because the instructional material prepared for the present study was of two types. It comprises of twelve paragraphs and scaffolding material. The instructions were written for guiding the students and directing them to use the developed self-regulated strategy and scaffolding material in writing each paragraph. These instructions helped the students in understanding the usage of instructional material. In this study, the general instructions were written for all the twelve paragraphs for four types of paragraphs. The instructions are given in appendix II.

**II. Writing Instructional Objectives in Behavioural Terms**

Behavioural objectives were formulated for all the twelve paragraphs and have been mentioned in task analysis. Task analysis for all the twelve paragraphs is given in appendix I.

**III. Writing of Instructional Material for Adapted SRS Model**

The instructional material for the present study was developed in the form of
twelve paragraphs and scaffolding material. This instructional material (twelve paragraphs given in appendix II) was developed using six instructional steps of adapted self-regulated strategy model which is based on Self Regulated Strategy Development Model developed by Graham et al. (1991) and developed self-regulated strategy ‘RCOWER’. The six stages in adapted self-regulated strategy model are meshed with developed self-regulated strategy ‘RCOWER’. The strategy ‘RCOWER’ consists of six steps, each step correlates with one letter mentioned in the name of the strategy. Each letter of self-regulated strategy entitled ‘RCOWER’ stands for six stages presented in fig. 4.1 given below:

**Fig. 4.1 Steps of Strategy Used for Adapted Self-regulated Strategy Model**

The first step is helpful in recalling the previous ideas related to the topic. The second step is related with collecting the new ideas. Ideas can be collected by asking questions to ourselves only. For this, another strategy named ‘Answer 6W strategy’ was developed. These 6W’s are six questions like What, Why, When, Where, Who, Why etc. While answering to these questions students try to think and generated answers to all or some of these W’s. These answers are considered as ideas about the paragraph topic. The first step of strategy helps in planning the paragraph. The third step of the strategy helps in organizing and outlining of the collected ideas. For this, a paragraph format was developed and used (Discussed in detail in the writing of scaffolding material in this chapter and given in appendix II). This format for paragraph writing helps students in making an outline of these ideas. This step of the strategy helps the students in controlling their paragraph writing process because it gives them the opportunity of the selection of relevant ideas, their organization and then outlining of these ideas. The fourth step is related with the writing of the outlined ideas from the paragraph format so that the outline may be
given a shape of complete paragraph of about 80-100 words. While writing the paragraph, students get engaged in monitoring their paragraph writing process. They themselves supervise their paragraph writing process. The fifth step of the strategy helps in editing and revising the written paragraph. For this, students were taught a strategy which is in the form of an acronym 2(SPV). This acronym stands for Spellings, Sentence Structure, Punctuation, Preposition, Verb forms, and Vocabulary. It means checking and making corrections in the written paragraph with respect to Spelling, Sentence Structure, Punctuation, Preposition, Verb forms, and Vocabulary. In this way this process helps students in self-evaluation of their written paragraphs. The final step of the strategy helps in making the final draft of the paragraph of about 80-100 words.

Each step of the strategy is related and blended with each step of adapted self-regulated strategy model. These six stages of adapted self-regulated strategy model are given below:

a) **Recall Background Knowledge:** In this stage, teacher helped the students in recalling their previous knowledge related to the paragraph topic.

b) **Collect Ideas after Discussion:** Teacher taught the students to collect the fresh and new ideas. This was done using ‘Answer 6 W’ strategy (appendix II). Students were told about the uses of this strategy in paragraph writing skill. The usage and benefit of the scaffolding material (support material) named ‘Think Sheet for ‘Answer 6 W’ strategy’ for collecting ideas was also discussed with students. They were also guided when to use this think sheet.

c) **Model the Organization of Ideas:** With the help of background knowledge and new collected ideas, the teacher modeled the organization of relevant ideas to students. The usage of scaffolding material for organizing ideas named ‘Format for Paragraph Writing Sheet’ (appendix II) was also demonstrated to students for developing paragraph writing.

d) **Write after Memorization:** In this step, students were instructed to memorize the strategy and usage of scaffolding material to collect and organize ideas.
Then they were told to write the paragraph after organizing the collected ideas.

e) **Edit Paragraph with Support:** Students were told to edit the written paragraph with the teacher’s support and by using scaffolding material named ‘Chart for Editing and Revising the Paragraph’ (appendix II)

f) **Rewriting Independently:** In this step, students were motivated to rewrite the final draft of the paragraph independently. For this they were provided another scaffolding material named ‘Final Draft Sheet’ (appendix II)

### Writing of Scaffolding Material

In the present study, scaffolding means providing support or help to the students during the paragraph writing process. Besides the physical support i.e. presence of the teacher for guiding the students in paragraph writing process, another form of support was there. This support was related with providing paragraph writing material in following forms:

1. **Think Sheet for ‘Answer 6 W’ Strategy**
2. **Format for Paragraph Writing Sheet**
3. **Chart for Editing and Revising the Paragraph**
4. **Final Draft Sheet**

(i) **Think Sheet for ‘Answer 6 W’ Strategy**

This sheet was prepared to help the students in collecting the ideas and planning paragraph writing process. Students with the help of this sheet tried to think about the topic questions and answered these questions. So this sheet helped students in relating their previous knowledge and developed knowledge with the paragraph topic. Think sheets for ‘Answer 6 W’ Strategy were prepared for all the twelve paragraphs for the present study. The ‘Answer 6 W’ strategy has been represented diagrammatically in Fig. 4.4 below and the Think Sheet for ‘Answer 6 W’ Strategy has been given in appendix II.
Fig. 4.4 ‘Answer 6 W’ strategy

(ii) Format for Paragraph Writing Sheet

The collected ideas need to be organized in sequence in a systematic and ordered way. For this purpose, the format for paragraph writing was prepared on a sheet. For four different types of paragraphs; a common paragraph writing format was developed in the present study. This common format is able to display the important distinguishing feature of all the four types of paragraphs. This format was prepared on the basis of the sequence of ideas given below in Fig. 4.5:

Fig. 4.5 Components of Paragraph in Sequence
1. **Main Idea (Statement of Paragraph):** Main idea is the statement of paragraph topic. It states the main idea of the paragraph and provides an indication to the reader about the development of paragraph in next lines. It enables students to predict the central idea of the paragraph. It is usually given in one-two lines in a paragraph for about 80-100 words. This part of format is common for all types of paragraphs.

2. **Supporting Ideas:** In order to expand the main idea and support it logically in a systematic way, other sentences called ‘supporting sentences’ are written. These sentences form the middle part of the paragraph. These sentences are organised in a particular order according to the type of paragraph.

   (i) **Supporting Examples/facts/Events/Process:** Depending upon the type of paragraph, students will choose one option to organize the supporting ideas as mentioned below:

   (a) Students will write ‘events’ while writing a narrative paragraph.

   (b) Students will explain ‘Process’ in case of expository paragraph.

   (c) Students will give ‘examples’ for descriptive paragraph, and

   (d) Students will write facts & examples for Persuasive paragraph.

   (ii) **Support with Cause & Effect/Uses:** Again on the basis of the collected ideas, students will write about cause and effect or uses of the topic.

       These are usually given in five-six lines in a paragraph for about 80-100 words.

3. **Concluding Statement:** The last sentence of the paragraph is usually a concluding sentence. The concluding sentence summarises the main point of the paragraph. The format for paragraph writing sheet was developed for all the twelve paragraphs and is given in appendix II.

   (iii) **Chart for Editing and Revising the Paragraph:** In this study, a chart for editing and revising the paragraph was prepared. This chart depicts the developed 2(SPV) strategy given below in Fig. 4.6:
It is helpful for the students in checking and making correction in the written paragraph in terms of Spelling, Sentence Structure, Punctuation, Preposition, Verb forms, and Vocabulary. The developed chart is common for all the twelve paragraphs of four different types. This chart for editing and revising the paragraph is given in appendix II.

(iv) Final Draft Sheet

The last stage of self-regulated strategy model in this study is preparation of Final Draft Sheet. It helped students in writing the paragraphs independently. At this stage of learning, they were given a final draft sheet. The developed final draft sheet is given in appendix II.

IV. Editing and Reviewing of Instructional Material

The developed instructional material was edited and reviewed before its usage in experimentation. Editing and reviewing process helped in identifying and rectifying the discrepancies related to content and language etc. This process was done in two levels:

a) Content Editing

b) Language Editing

a) Content Editing

To check the accuracy of the content presented in instructional material, the instructional material was put under the scanner of subject expert. The suggestions given by expert were considered and modifications were done accordingly.
b) Language Editing

After the editing and reviewing of the content, the next task was to check the language discrepancies of the instructional material. A language expert was consulted for this purpose. The instructional material was accordingly rectified.

4.2.3 Tryout Stage

Tryout stage is the trial situation of the developed instructional material. The instructional material was tried out on IX class students to evaluate its effectiveness. In this study, tryout was done on three stages as shown in figure 4.8

![Fig. 4.8 Tryout Stage](image)

<table>
<thead>
<tr>
<th>Tryout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Tryout</td>
</tr>
</tbody>
</table>

1. Individual Tryout

In this phase, individual tryout was done on five students of IX class in a very informal situation. This tryout was carried out to know the reaction of students on developed instructional material. Special attention was given wherever they were not able to understand the material. Their suggestions were incorporated for the improvement of the material.

2. Small Group tryout

The modified instructional material (on the basis of individual tryout) was further tried out on a small group of eight to ten IX class students. The reactions of these students were noted and necessary modifications were done. After modifications in the instructional material, it was considered ready for field Tryout.

3. Field Tryout

Field tryout was done on modified instructional material. This material was administered on a large group of forty students of IX class from P.K.R. Jain Sr. Sec. Public school, Ambala for field tryout. The instructional material was presented to
the students for all the twelve paragraphs. Criterion referenced tests were administered for all the twelve paragraphs before and after the presentation of instructional material. To see the improvement in the paragraph writing performance, the scores of CRTs conducted at both occasions were recorded. The mean scores obtained by students at both occasions for twelve paragraphs are given in table 4.2.

**Table 4.2**

Pre-test and Post-test Mean Scores of Criterion Referenced Tests

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Paragraph</th>
<th>Pre-test mean score</th>
<th>Post-test mean score</th>
<th>Max. Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pollution</td>
<td>14.33</td>
<td>23.90</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>Smoking</td>
<td>11.6</td>
<td>19.25</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>Global Warming</td>
<td>10.1</td>
<td>19.45</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>An Embarrassing Experience</td>
<td>11.28</td>
<td>20.43</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>Preparations For My Birthday Party</td>
<td>10.73</td>
<td>20.50</td>
<td>25</td>
</tr>
<tr>
<td>6</td>
<td>The Annual Prize Distribution Function</td>
<td>10.95</td>
<td>20.18</td>
<td>25</td>
</tr>
<tr>
<td>7</td>
<td>Making of Paper</td>
<td>11.68</td>
<td>23.75</td>
<td>30</td>
</tr>
<tr>
<td>8</td>
<td>Opening A Bank Account</td>
<td>8.65</td>
<td>19.62</td>
<td>25</td>
</tr>
<tr>
<td>9</td>
<td>Growing of A Plant</td>
<td>11.22</td>
<td>20.15</td>
<td>25</td>
</tr>
<tr>
<td>10</td>
<td>The Coconut Tree</td>
<td>8.67</td>
<td>19.55</td>
<td>25</td>
</tr>
<tr>
<td>11</td>
<td>Red Fort: Pride of India</td>
<td>8.82</td>
<td>19.48</td>
<td>25</td>
</tr>
<tr>
<td>12</td>
<td>The Sunset</td>
<td>11.5</td>
<td>19.55</td>
<td>25</td>
</tr>
</tbody>
</table>
4.2.4 Evaluation Stage

The last stage in the developmental process of instructional material is evaluation stage. At this stage, instructional material was evaluated by finding out its reliability and validity. The reliability and validity of instructional material was calculated on the basis of students’ performance on CRT’s (criterion referenced test).

1. Reliability of the Instructional Material Developed for Adapted SRS Model

Reliability is the consistency of the results with which a test measures what it claims to be measured. There are different types of reliability. In this study, Inter-rater reliability was calculated. Inter-rater reliability means the consistency with which the researcher evaluated the single performance of a given group of students. The reliability of developed instructional material was tested by calculating error rate. Error rate deals with the percentage of errors committed by students on CRT’s developed for instructional material.

\[
\text{Error Rate in Percentage } = \frac{N_e}{N_i} \times 100
\]

For measuring Reliability \( N_r \times N_i \)

Where, \( N_e = \) Total number of errors made by all the students on criterion referenced test of a paragraph

\( N_i = \) Total number of students performing on criterion referenced test of a paragraph

\( N_r = \) Total number of required responses on criterion referenced test of a paragraph

According to this specified formula the error rate for each of the twelve paragraphs were calculated as given in table.

Table 4.3 indicates that the calculated error rate for all the twelve paragraphs was found to be in between 18% to 22.2%. Sharma (1982) is also of the view that students of scientific stream possessed a higher level of verbal intelligence than those of literary and commercial stream. According to a study conducted by Chatterji (1983), the achievement – motivation score of students in science, commerce and agriculture field is significantly higher than students studying in arts field.
### TABLE 4.3
**CALCULATED RELIABILITY IN TERMS OF ERROR RATE ON CRT FOR ALL PARAGRAPHS**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Paragraph</th>
<th>Ne</th>
<th>Nr</th>
<th>Ni</th>
<th>Error Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pollution</td>
<td>244</td>
<td>30</td>
<td>40</td>
<td>20.33</td>
</tr>
<tr>
<td>2</td>
<td>Smoking</td>
<td>206</td>
<td>25</td>
<td>40</td>
<td>20.60</td>
</tr>
<tr>
<td>3</td>
<td>Global Warming</td>
<td>222</td>
<td>25</td>
<td>40</td>
<td>22.20</td>
</tr>
<tr>
<td>4</td>
<td>An Embarrassing Experience</td>
<td>183</td>
<td>25</td>
<td>40</td>
<td>18.30</td>
</tr>
<tr>
<td>5</td>
<td>Preparations For My Birthday Party</td>
<td>180</td>
<td>25</td>
<td>40</td>
<td>18.00</td>
</tr>
<tr>
<td>6</td>
<td>The Annual Prize Distribution Function</td>
<td>193</td>
<td>25</td>
<td>40</td>
<td>19.30</td>
</tr>
<tr>
<td>7</td>
<td>Making of Paper</td>
<td>250</td>
<td>30</td>
<td>40</td>
<td>20.83</td>
</tr>
<tr>
<td>8</td>
<td>Opening A Bank Account</td>
<td>215</td>
<td>25</td>
<td>40</td>
<td>21.50</td>
</tr>
<tr>
<td>9</td>
<td>Growing of A Plant</td>
<td>194</td>
<td>25</td>
<td>40</td>
<td>19.40</td>
</tr>
<tr>
<td>10</td>
<td>The Coconut Tree</td>
<td>218</td>
<td>25</td>
<td>40</td>
<td>21.80</td>
</tr>
<tr>
<td>11</td>
<td>Red Fort: Pride of India</td>
<td>221</td>
<td>25</td>
<td>40</td>
<td>22.10</td>
</tr>
<tr>
<td>12</td>
<td>The Sunset</td>
<td>218</td>
<td>25</td>
<td>40</td>
<td>21.80</td>
</tr>
</tbody>
</table>
In another study by Chaliha (2012), the students of science and commerce department have more scholastic achievement than the students of arts department. These studies show that the performance or gain of instructional material by students learning science and commerce subjects is more than students in arts or language subjects especially students learning second language. So it can be concluded that the error rate of students learning second language after studying through instructional material will be more as compared to students in science and other subjects. In this study, the calculated error rate is below 25%, which is acceptable in teaching English as a second language. This clearly shows that all the twelve paragraphs taught through self-regulated strategy model were comprehensible to the students and hence the instructional material was found reliable for target population.

2. Validity of the Instructional Material Developed for Adapted SRS Model

Validity of a test is defined as the accuracy with which it measures and what it is supposed to measure. Validity of the developed instructional material for adapted SRS model was calculated by finding the gain ratio. Gain ratio is the measure to find out the effectiveness of adapted SRS model. It is calculated on the basis of scores obtained on pre-test and post-test levels of CRT’s (criterion referenced tests) developed for instructional material. It is the ratio between the amount learned and the amount that could possibly be learnt. It is formulated as:

\[
\text{Gain Ratio for Validity} = \frac{\text{Mean of Post-test scores} - \text{Mean of Pre-test scores}}{\text{Mean of Full scores} - \text{Mean of Pre-test scores}}
\]

The Gain Ratio for twelve paragraphs is given in Table 4.4:
TABLE 4.4
CALCULATED VALIDITY IN TERMS OF GAIN RATIO ON CRT FOR ALL PARAGRAPHS

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Paragraph</th>
<th>Pre-test mean score</th>
<th>Post-test mean score</th>
<th>Full score</th>
<th>Gain Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pollution</td>
<td>14.33</td>
<td>23.90</td>
<td>30</td>
<td>0.61</td>
</tr>
<tr>
<td>2</td>
<td>Smoking</td>
<td>11.60</td>
<td>19.25</td>
<td>25</td>
<td>0.61</td>
</tr>
<tr>
<td>3</td>
<td>Global Warming</td>
<td>10.10</td>
<td>19.45</td>
<td>25</td>
<td>0.62</td>
</tr>
<tr>
<td>4</td>
<td>An Embarrassing Experience</td>
<td>11.28</td>
<td>20.43</td>
<td>25</td>
<td>0.66</td>
</tr>
<tr>
<td>5</td>
<td>Preparations For My Birthday Party</td>
<td>10.73</td>
<td>20.50</td>
<td>25</td>
<td>0.68</td>
</tr>
<tr>
<td>6</td>
<td>The Annual Prize Distribution Function</td>
<td>10.95</td>
<td>20.18</td>
<td>25</td>
<td>0.65</td>
</tr>
<tr>
<td>7</td>
<td>Making Of Paper</td>
<td>11.68</td>
<td>23.75</td>
<td>30</td>
<td>0.65</td>
</tr>
<tr>
<td>8</td>
<td>Opening A Bank Account</td>
<td>8.65</td>
<td>19.62</td>
<td>25</td>
<td>0.67</td>
</tr>
<tr>
<td>9</td>
<td>Growing Of A Plant</td>
<td>11.22</td>
<td>20.15</td>
<td>25</td>
<td>0.64</td>
</tr>
<tr>
<td>10</td>
<td>The Coconut Tree</td>
<td>8.67</td>
<td>19.55</td>
<td>25</td>
<td>0.66</td>
</tr>
<tr>
<td>11</td>
<td>Red Fort: Pride Of India</td>
<td>8.82</td>
<td>19.48</td>
<td>25</td>
<td>0.65</td>
</tr>
<tr>
<td>12</td>
<td>The Sunset</td>
<td>11.50</td>
<td>19.55</td>
<td>25</td>
<td>0.59</td>
</tr>
</tbody>
</table>

The table indicates that the calculated gain ratio for all the twelve paragraphs was found to be in between 0.59 to 0.68 which is acceptable in teaching second language (Sharma, 1982; Chatterji, 1983; Chaliha, 2012). It indicates that there is a gain of 59% to 68% with the help of instructional material. Thus, the developed instructional material for paragraph writing in English language through adapted self-regulated strategy model was found valid also. The instructional material for twelve paragraphs is given in appendix II.

4.3 DEVELOPMENT OF LESSON PLANS FOR CONVENTIONAL METHOD

In the present study, lesson plans were developed for conventional method for the students of control group. Classroom teaching is organized in three phases: Pre-active, interactive and post-active phase of teaching. The lesson planning is a
pre-active phase of teaching. A practical outline of the topic to be taught in classroom by the teacher is called lesson plan. Lesson planning helps in sequencing of the content presentation and prevents the teacher to deviate from the topic. The use of teaching aids, techniques, and strategies are predetermined in the presentation of content.

There are various approaches to plan the lesson like Evaluation Approach, Morrison Approach, Herbart’s Approach, RCEM, and Eclectic Approach. A brief account of these approaches is given below:

1. **Evaluation Approach**

   B.S. Bloom is considered to be the main name in developing the evaluation approach. This approach was developed as a new concept in the field of education. This approach considers teaching as a purposeful process. Bloom has termed education as a tri-polar process. These three poles of education are termed as the steps of evaluation approach.

   These steps are as follows:

   (a) **Formulation of educational objectives**: Framing of objectives is very necessary in this approach because evaluation approach considers education as a purposeful process. The educational process would become meaningless if objectives are not determined.

   (b) **Providing learning experiences appropriate to objectives**: The learning experiences mean those ways with the help of which teaching objectives can be achieved. This step includes teaching method, technique, teaching aids, and instruction etc. to achieve objectives.

   (c) **Evaluation of change of behavior or learning**: In this step, the evaluation of the learning or behavioural changes is done keeping in mind the objectives determined in the first step.

**Merits**:

1. Teaching objectives are determined so that learning experiences may be presented.

2. It is based on laws of psychology and teaching-learning principles.
3. The methods, techniques and strategies are clearly described.
4. There is emphasis on systematic evaluation of expected behavioural changes.

Demerits
1. Preparing lesson plan based on this approach is more complicated and mechanical because of the teacher’s domination on the execution of lesson plan.
2. It is practically difficult to coordinate the objectives of lesson plan, learning experiences and evaluation techniques.
3. There is lack of freedom to teachers and students.

2. Morrison’s Unit Approach

The pioneer of this approach is Prof. Henry C. Morrison (1929). The basis of this approach is Gestalt’s psychology. According to this psychology, concentration is on ‘whole’, and not on ‘parts’. The unit approach means to divide any subject matter into units or sub-units and to impart the knowledge to the pupils through the teaching of these units or sub-units. Hence, the main aim of this approach is to provide mastery to the pupils in the subject matter through teaching learning process. Following are given the steps of Morrison’s approach:

(a) Exploration: Exploration means to find out. In this step, the teacher explores the pupil’s previous knowledge so that the new knowledge may be organized.

(b) Presentation: The subject matter is discussed and the structure of the entire unit is presented to the pupils. In this step, the teacher does not go into the details of the subject matter and limits himself/herself to the unit only. After the presentation of unit, its evaluation is carried out.

(c) Assimilation: This step deals with the assimilation of acquired knowledge, i.e. the knowledge is made permanent or consolidated. The pupils study the subject matter deeply and try to understand it. For this they use libraries and laboratories, clarify doubt and use debating technique.

(d) Organisation: During this step, the student presents the acquired knowledge independently and in the written form and he tries to explain the extent to which he can again represent the content after organizing it.

(e) Recitation: This step includes the student’s verbal expression i.e. whatever the
pupil has learnt he recites to his class-mate or teacher. This expression may take place in written form, as blackboard work or as an activity.

Merits

1. It is student oriented approach.
2. The subject matter becomes simple and interesting after dividing it into units.
3. Pupils assimilate subject matter easily because of limited content.
4. Habit of self-study is developed.

Demerits

1. The teaching task through this approach is time consuming.
2. The scope of this approach is limited.
3. It is difficult to make each unit purposeful.
4. It lacks clarity in its steps.

3. Herbart’s Five Step Approach

John Fredrik Herbart (1776-1841) divided lesson plan of teaching into five steps. This approach puts more emphasis on the presentation of subject matter. Under this approach the following five steps are employed:

(a) Introduction or Preparation: Under this step, the previous experiences are examined while preparing them for acquiring new knowledge. In other words, some questions are asked to the students in order to examine their previous knowledge, so that curiosity is created in them to learn new knowledge.

(b) Presentation: This step is concerned with presenting the content to the students. It is completed with the active participation of students. The lesson is developed with the co-operation of students. This step involves the use of various teaching skills like Questioning, explanation, demonstration & teaching aids.

(c) Comparison and Association: This step is related to the task of strengthening the acquisition of new material. The students are presented with new knowledge and are asked to observe it very carefully. The teacher establishes a
relationship between the previous experiences and new knowledge. The teacher also compares the previous and new experiences so that the new experiences retained in the mind of students.

(d) **Generalisation:** This step is concerned with the systematizing of the knowledge learnt. It is done with the participation of students. Students are provided opportunities to think.

(e) **Application:** The consolidation of knowledge takes place only when the knowledge learnt applied to similar situations in future. The application part also serves the purpose of revision and recapitulation of the learnt knowledge.

(f) **Recapitulation:** This is the last step of this approach. The teacher verifies whether the students have grasped the material or not. It is generally done by asking suitable questions on the topic which was taught to them.

**Merits**

1. It helps in avoiding unnecessary repetition in teaching.

2. It is useful in achieving the cognitive objective of teaching.

3. It makes use of the previous knowledge of the students for imparting new knowledge.

**Demerits**

1. It is limited to the realization of cognitive objective only.

2. There is more stress on teaching than learning.

4. **RCEM Approach**

This approach to lesson planning was developed at Regional College of Education, Mysore and so it was named as RCEM approach. The basis of this approach is Bloom’s taxonomy of objectives. Here importance is given to teaching objectives, teachers’ activities and pupils’ evaluation. This approach makes use of the concept of systems approach to education. The three main steps involved in this approach are:

(a) **Input:** Input step is concerned with the identification and specification of the educational objectives. It also includes the identification of the entering behaviour of the students. The objectives are written in behavioural terms. This
step resembles the ‘introduction’ step.

(b) **Process:** This step resembles the ‘presentation’ step of Herbartian approach. It represents the interaction process of the classroom. It includes activities of the teacher as well as students and use of different teaching strategies.

(c) **Output:** The last step is concerned with the evaluation phase of the lesson. This includes the real behavioural changes among students. For this teacher uses various tools and techniques of evaluation.

**Merits**

1. It is more suitable to Indian schools.
2. Objectives are stated in terms of measurable abilities and mental process.
3. Teaching-learning situations, strategies, aids and materials are properly stated.
4. Evaluation aspect is properly taken care of.

**Demerits**

1. It is very tedious to write lesson plan of this type.
2. It is time consuming.

4.3.1 **Eclectic Approach for Writing Lesson Plans**

In this study two approaches-Herbart’s approach and RCEM approach- were blended for planning lessons for conventional method because both approaches have some similarity along with their merits and demerits. The good points of both approaches were mixed for preparing lessons for the need of present study. Following steps were followed for planning the conventional lessons for all the twelve paragraphs:

1. **Identification Detail**

   The identification data of the students for which lesson plan was prepared was mentioned in this step. It helped in identifying the target group for planning lesson. It consisted of following details:
   
   a) Class - IX
b) Subject - Composition (Paragraph Writing)
c) Topic - Paragraph Topic
d) Duration of period - 40 Minutes

2. Specific Objectives

The specific objectives were formulated to carry out the teaching activities accordingly. These were determined to clear the objectives of the lesson. These were concerned with the lesson to be taught. These were further divided into categories mentioned below:

(a) Knowledge: Knowledge objectives are related to recall, recognition and reproduction of learned facts.

(b) Understanding: These objectives are concerned with classification, distinction and illustration of gained knowledge.

(c) Skill: Skill objectives are related to development of linguistic skills i.e. listening, speaking, reading, & writing.

(d) Application: It deals with understanding of linguistic skills and applying those in day today life.

3. Teaching Aids

Teaching aids were used in classroom for teaching-learning process. These aids included the always available common classroom equipments and objects like Chalkboard, Chalks, Duster, Pointer, Table, Chair, Door, Window etc. Apart from these general aids which were already present in classroom, some specifically planned and prepared teaching aids were also used in teaching paragraph writing in classroom.

4. Previous Knowledge Assumed

For teaching paragraph writing skill on a particular topic, the previous knowledge, skills and experiences of the students were assumed. This acts as a base for planning the lesson to a great extent.
5. Previous Knowledge Testing

The previous knowledge of the students which was assumed in previous step was now tested. This testing was done using questioning skill. This step also helped in linking the previous knowledge of students with the content to be taught. It also prepared students for learning new topic.

6. Announcement of the Topic

In this step, the topic to be taught was announced in classroom when students were unable to give any response to the question in previous knowledge testing.

7. Presentation

Here the planning of the content was done for the purpose of its presentation. Presentation means the activities performed in class to achieve the prefixed objectives. Various activities to be performed were planned in six columns given below:

<table>
<thead>
<tr>
<th>Content</th>
<th>Specification</th>
<th>Teacher's Activities</th>
<th>Students' Activities</th>
<th>Chalkboard Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>The subject matter to be taught was written here in brief.</td>
<td>In this column, instructional objectives in behavioural terms were specified.</td>
<td>The activities performed by teacher to achieve behavioural objectives were specified.</td>
<td>The activities done by students corresponding to teacher’s activities were mentioned.</td>
<td>Teaching aids which were used by the teacher during teaching-learning process were given here. For undertaking teaching activities, whatever chalkboard work is done, was written here.</td>
</tr>
</tbody>
</table>

8. Home work

At the end, Homework was given to the students. It was given on the basis of learnt knowledge in class.
4.3.2 Editing and Reviewing of Lesson Plans

Like the instructional material for experimental group, lesson plans for control group were also edited and reviewed. This task was done by subject matter expert and lesson planning expert. Subject matter expert checked the accuracy of content of the lesson plans whereas the language discrepancies in the presentation and sequencing of the content were checked by lesson planning expert. The first draft of the lesson plan was reviewed in the light of the suggestions given by the experts. After this, lesson plans were put into tryout phase.

4.3.3 Tryout of Lesson Plans

After editing and reviewing of lesson plans, these were tried and tested on IX class English medium students. This tryout was done on forty students. Their suggestions and difficulties while learning through lesson plans were considered for further improvement in lesson plans.

4.3.4 Evaluation of Lesson Plans

The prepared lesson plans were lastly evaluated in terms of reliability and validity. The reliability and validity of lesson plans were calculated on the basis of the achievement of students on criterion referenced tests (CRT’s) prepared for developed lesson plans.

1. Reliability of Lesson Plans for Conventional Method

In order to find out the reliability of the lesson plans, error rate was calculated for each lesson plan. Error rate was calculated by dividing the total number of errors committed by all students of IX class by the product of total number of students dealing with CRT and total number of required responses on CRT. The scores obtained were multiplied by 100 to find out the error rate in percentage. The formula used for error rate for calculating the reliability was:

\[
\text{Error Rate in Percentage} = \frac{N_e}{N_r \times N_i} \times 100
\]

For measuring Reliability \( N_r \times N_i \)

Where, \( N_e = \) Total number of errors made by all the students on criterion
referenced test of a paragraph

\[ N_i = \text{Total number of students performing on criterion referenced test of a paragraph} \]

\[ N_r = \text{Total number of required responses on criterion referenced test of a paragraph} \]

Error rate was calculated for all the twelve paragraphs. The error rates for all the twelve paragraphs based on CRT’s are given in Table 4.5

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Paragraph</th>
<th>( N_e )</th>
<th>( N_r )</th>
<th>( N_i )</th>
<th>Error Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pollution</td>
<td>232</td>
<td>30</td>
<td>40</td>
<td>19.33</td>
</tr>
<tr>
<td>2</td>
<td>Smoking</td>
<td>212</td>
<td>25</td>
<td>40</td>
<td>21.20</td>
</tr>
<tr>
<td>3</td>
<td>Global Warming</td>
<td>209</td>
<td>25</td>
<td>40</td>
<td>20.90</td>
</tr>
<tr>
<td>4</td>
<td>An Embarrassing Experience</td>
<td>191</td>
<td>25</td>
<td>40</td>
<td>19.10</td>
</tr>
<tr>
<td>5</td>
<td>Preparations For My Birthday Party</td>
<td>187</td>
<td>25</td>
<td>40</td>
<td>18.70</td>
</tr>
<tr>
<td>6</td>
<td>The Annual Prize Distribution Function</td>
<td>200</td>
<td>25</td>
<td>40</td>
<td>20.00</td>
</tr>
<tr>
<td>7</td>
<td>Making Of Paper</td>
<td>241</td>
<td>30</td>
<td>40</td>
<td>20.08</td>
</tr>
<tr>
<td>8</td>
<td>Opening A Bank Account</td>
<td>205</td>
<td>25</td>
<td>40</td>
<td>20.50</td>
</tr>
<tr>
<td>9</td>
<td>Growing Of A Plant</td>
<td>192</td>
<td>25</td>
<td>40</td>
<td>19.20</td>
</tr>
<tr>
<td>10</td>
<td>The Coconut Tree</td>
<td>212</td>
<td>25</td>
<td>40</td>
<td>21.20</td>
</tr>
<tr>
<td>11</td>
<td>Red Fort: Pride of India</td>
<td>220</td>
<td>25</td>
<td>40</td>
<td>22.00</td>
</tr>
<tr>
<td>12</td>
<td>The Sunset</td>
<td>230</td>
<td>25</td>
<td>40</td>
<td>23.00</td>
</tr>
</tbody>
</table>

2. Validity of Lesson Plans for Conventional Method

Validity of lesson plans developed for conventional method was calculated by using formula of gain ratio. Gain ratio was computed to see the validity of lesson plans. Pre-test scores were computed on CRTs before teaching through lesson plans.
and post-test scores were computed after teaching through conventional method. The formula used for calculating the gain ratio was same as applied for calculating gain ratio of instructional material for SRSM. The formula is:

\[
\text{Gain Ratio for Validity} = \frac{\text{Mean of Post-test scores} - \text{Mean of Pre-test scores}}{\text{Mean of Full scores} - \text{Mean of Pre-test scores}}
\]

The gain ratio calculated for all paragraphs is presented in Table 4.6.

### TABLE 4.6
VALIDITY OF LESSON PLANS BASED ON GAIN RATIO ON CRT FOR ALL THE TWELVE PARAGRAPHS

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Paragraph</th>
<th>Pre-test mean score</th>
<th>Post-test mean score</th>
<th>Full score</th>
<th>Gain Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pollution</td>
<td>12.00</td>
<td>22.79</td>
<td>30</td>
<td>0.60</td>
</tr>
<tr>
<td>2</td>
<td>Smoking</td>
<td>11.56</td>
<td>19.64</td>
<td>25</td>
<td>0.60</td>
</tr>
<tr>
<td>3</td>
<td>Global Warming</td>
<td>11.11</td>
<td>19.60</td>
<td>25</td>
<td>0.61</td>
</tr>
<tr>
<td>4</td>
<td>An Embarrassing Experience</td>
<td>11.17</td>
<td>20.19</td>
<td>25</td>
<td>0.65</td>
</tr>
<tr>
<td>5</td>
<td>Preparations For My Birthday Party</td>
<td>11.18</td>
<td>21.15</td>
<td>25</td>
<td>0.72</td>
</tr>
<tr>
<td>6</td>
<td>The Annual Prize Distribution Function</td>
<td>10.31</td>
<td>19.83</td>
<td>25</td>
<td>0.64</td>
</tr>
<tr>
<td>7</td>
<td>Making Of Paper</td>
<td>11.57</td>
<td>22.72</td>
<td>30</td>
<td>0.60</td>
</tr>
<tr>
<td>8</td>
<td>Opening A Bank Account</td>
<td>9.26</td>
<td>19.38</td>
<td>25</td>
<td>0.64</td>
</tr>
<tr>
<td>9</td>
<td>Growing Of A Plant</td>
<td>11.55</td>
<td>21.09</td>
<td>25</td>
<td>0.70</td>
</tr>
<tr>
<td>10</td>
<td>The Coconut Tree</td>
<td>8.91</td>
<td>19.16</td>
<td>25</td>
<td>0.63</td>
</tr>
<tr>
<td>11</td>
<td>Red Fort: Pride Of India</td>
<td>8.80</td>
<td>18.82</td>
<td>25</td>
<td>0.61</td>
</tr>
<tr>
<td>12</td>
<td>The Sunset</td>
<td>10.66</td>
<td>19.63</td>
<td>25</td>
<td>0.62</td>
</tr>
</tbody>
</table>

The gain ratio for all the lesson plans ranged from 0.60-0.72 which can be considered quite satisfactory in paragraph writing in English which is taught and
learnt as second language (Sharma, 1982; Chatterji, 1983; Chaliha, 2012). So, these lesson plans were found to be effective for teaching to control group.

Comparison of Reliability and Validity of Adapted SRS Model & Conventional Method

The main objective of the study was to compare the effectiveness of SRS model & conventional method. For this, it was essential that the developed material for both the methods were to be similar in terms of reliability and validity. Thus, the error rates and gain ratios for both the methods have been given in Table 4.7 & Table 4.8 for bringing out a comparative view of reliability and validity of the developed instructional material.

TABLE 4.7
COMPARISON OF RELIABILITY OF INSTRUCTIONAL MATERIAL FOR ADAPTED SRSM AND CONVENTIONAL METHOD IN TERMS OF ERROR RATE

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Paragraph</th>
<th>Error Rate in Terms of Reliability (SRS Material)</th>
<th>Error Rate in Terms of Reliability (Lesson Plans)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pollution</td>
<td>20.33</td>
<td>19.33</td>
</tr>
<tr>
<td>2</td>
<td>Smoking</td>
<td>20.60</td>
<td>21.20</td>
</tr>
<tr>
<td>3</td>
<td>Global Warming</td>
<td>22.20</td>
<td>20.90</td>
</tr>
<tr>
<td>4</td>
<td>An Embarrassing Experience</td>
<td>18.30</td>
<td>19.10</td>
</tr>
<tr>
<td>5</td>
<td>Preparations For My Birthday Party</td>
<td>18.00</td>
<td>18.70</td>
</tr>
<tr>
<td>6</td>
<td>The Annual Prize Distribution Function</td>
<td>21.80</td>
<td>21.20</td>
</tr>
<tr>
<td>7</td>
<td>Making Of Paper</td>
<td>22.10</td>
<td>22.00</td>
</tr>
<tr>
<td>8</td>
<td>Opening A Bank Account</td>
<td>21.80</td>
<td>21.20</td>
</tr>
<tr>
<td>9</td>
<td>Growing of A Plant</td>
<td>21.80</td>
<td>21.20</td>
</tr>
<tr>
<td>10</td>
<td>The Coconut Tree</td>
<td>21.80</td>
<td>21.20</td>
</tr>
<tr>
<td>11</td>
<td>Red Fort: Pride Of India</td>
<td>21.80</td>
<td>21.20</td>
</tr>
<tr>
<td>12</td>
<td>The Sunset</td>
<td>21.80</td>
<td>23.00</td>
</tr>
</tbody>
</table>
### TABLE 4.8
COMPARISON OF VALIDITY OF INSTRUCTIONAL MATERIAL FOR SRSM AND CONVENTIONAL METHOD IN TERMS OF GAIN RATIO

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Paragraph</th>
<th>Validity in Terms of Gain Ratio for SRS Model</th>
<th>Validity in Terms of Gain Ratio for Conventional Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pollution</td>
<td>0.61</td>
<td>0.60</td>
</tr>
<tr>
<td>2</td>
<td>Smoking</td>
<td>0.61</td>
<td>0.60</td>
</tr>
<tr>
<td>3</td>
<td>Global Warming</td>
<td>0.62</td>
<td>0.61</td>
</tr>
<tr>
<td>4</td>
<td>An Embarrassing Experience</td>
<td>0.66</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>Preparations For My Birthday Party</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The Annual Prize Distribution</td>
<td>0.65</td>
<td>0.64</td>
</tr>
<tr>
<td>6</td>
<td>Function</td>
<td>0.65</td>
<td>0.64</td>
</tr>
<tr>
<td>7</td>
<td>Making Of Paper</td>
<td>0.65</td>
<td>0.60</td>
</tr>
<tr>
<td>8</td>
<td>Opening A Bank Account</td>
<td>0.67</td>
<td>0.64</td>
</tr>
<tr>
<td>9</td>
<td>Growing Of A Plant</td>
<td>0.64</td>
<td>0.70</td>
</tr>
<tr>
<td>10</td>
<td>The Coconut Tree</td>
<td>0.66</td>
<td>0.63</td>
</tr>
<tr>
<td>11</td>
<td>Red Fort: Pride of India</td>
<td>0.65</td>
<td>0.61</td>
</tr>
<tr>
<td>12</td>
<td>The Sunset</td>
<td>0.59</td>
<td>0.62</td>
</tr>
</tbody>
</table>

Table 4.7 and Table 4.8 indicate that the error rate and gain ratios for all the twelve paragraphs were almost similar for both the methods of teaching. The instructional materials for both methods were found satisfactory having comparable reliability and validity in terms of error rate and gain ratio respectively. The results from Table 4.7 and Table 4.8 indicate that the developed instructional material for both the methods was reliable and valid as well as equivalent enough for administration in the experiment.