CHAPTER IV
PROCEDURE OF WORK AND TOOL CONSTRUCTION

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4.1 Readability of the text book
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A successful test can be constructed only when the test constructor is clear about what he seeks to measure. To consider this view some criteria should always be kept in mind. This requires a careful and schematic planning of the test throughout its construction.

The present work was aimed primarily at constructing and standardizing an oral reading test in English. The test would yield two types of scores: viz., (1) the comprehension scores and (2) the number of errors committed during the oral reading of the given paragraphs. The construction of the test consisted of going through the following essential steps.

1. The English text book of standard VIII was studied properly. The study included the total words, phrases, sentence construction, and the different tenses used in the lessons.

2. The readability of the different units of the text book was found out.

3. The passages for the test were prepared in such a way that the readability of the passages would remain in the same range as in the units of the text book.
4. The categories of passages selected were on national heroes, fables, anecdotal narratives, narratives pertaining to birds and animals, country narratives, children as heroes, ideal family life, ideal student, adventures, the life in the villages, traffic rules, religious actions and man and society. One paragraph each was written on each topic.

5. These paragraphs were edited, and inappropriate words and sentences having ambiguous meanings or vagueness were eliminated or modified in consultation with the experts.

6. Multiple-choice questions were framed for each paragraph.

7. The test was administered to a random sample of the population for which the test was to be standardized.

8. The data obtained were used to calculate two indices i.e. discriminating index and internal consistency for each of the questions.

9. Selection of the paragraphs and the questions dependent on these paragraphs were selected for the final form of the test.

10. The final form was administered to a large and random sample of the population.
11. The reliability, validity and norms were determined. Some of the above points have been described elaborately in the following pages.

4.1 Readability of the text book

Readability refers to the reading difficulty of a printed matter. The high readability implies that there is difficulty to read the given matter while low readability signifies it is easy to read any matter given. Before selecting a passage or a text book the readability should be taken into account. It is essential that a teacher should know the readability of a paragraph or a passage beforehand. Many a teacher may adopt some sort of guess work regarding readability, without adopting a proper method to understand it. Therefore, it is necessary to use a formula to calculate the readability of the reading material.

It is important to select or construct a passage for a particular group of students as per its readability. Therefore, the investigator prepared passages in conformity with the readability of their text book prescribed for the standard VIII in Gujarat State. This was done keeping in view of a thorough study of the relevant readability formula given by Robert C. Aukerman in his book.

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Factors in readability. Reading difficulty may be on several components. They are mainly:

1. Length of sentence. Continuous long sentences in a passage creates reading difficulty for the reader. In long sentences larger concepts are present in sequences and all may not be equally good in the visual memory. So the compound sentences increase the difficulty of reading.

2. Vocabulary. This is one of the main problems faced by poor readers. Vocabulary load increases the difficulty. Complicated or unfamiliar vocabulary is a burden. Sometimes certain vocabulary used in spoken language may be a difficult word to him in print. Obsolete vocabulary in the text book also creates difficulty. Scientific, technical and specific vocabulary is another set of difficulty for reading. These words are used with scientific or technical meaning or specific meanings in context. If these types of words appear in a passage altogether different, then it is counted as a difficult word for the reader. If the words have no connection with immediate, current meaning, then these are known as allusive, ambiguous and referential vocabulary. These words will also be subject to frustration and failure.
3. **Polysyllabic vocabulary.** This is perhaps the greatest single factor in determining the level of readability. The words having more than two syllable words are counted while calculating the readability. The vowel sounds are taken into account while calculating the syllable.

**Measuring readability.** The investigator ventured the task of measuring the readability of English Text book prescribed for standard VIII of Gujarat State. Readability formulae were made use for the purpose. The following procedure was applied to determine the readability of the different units, of the text book according to Aukerman's formula.

1. Select a representative unit.
2. Count the number of actual words in each unit.
3. Count the number of sentences in each unit.
4. For each unit, divide the number of words by the number of sentences to obtain the average sentence length.
5. Tally the number of subordinate clauses in each unit, if they occur.
6. Tally the number of words of three or more syllables for each sample.
7. Tally the number of words that are found on the list of "impedilexae" for that particular subject area for the concerned standard.
The above steps can be written as follows:

No. of words in selection......
No. of sentences .............
No. of words divided by no. of sentences - sentence length
No. of subordinate clauses --- x3
(multiply number of subordinate clauses with three)
No. of words of three or more syllables...
No. of words on the list of impedilexae ... x5
Weighed readability (Add all) = Total ........

The first step was to find out the readability of the unit of the text book. The readability of the different units from the text book were calculated. The process was demonstrated below.

Table 1
Readability of the different units

<table>
<thead>
<tr>
<th></th>
<th>Unit 10</th>
<th>Unit 19</th>
<th>Unit 25</th>
<th>Unit 30</th>
<th>Unit 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average sentence length</td>
<td>4</td>
<td>6.5</td>
<td>6.8</td>
<td>5.4</td>
<td>9.2</td>
</tr>
<tr>
<td>No. of polysyllable words</td>
<td>33</td>
<td>44.0</td>
<td>38.0</td>
<td>28.0</td>
<td>33.0</td>
</tr>
<tr>
<td>No. of sub. clauses</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No. of impedilexae</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Readability score</td>
<td>37</td>
<td>50.5</td>
<td>44.8</td>
<td>33.4</td>
<td>42.2</td>
</tr>
</tbody>
</table>

= 37 = 51 = 45 = 33 = 42
There were forty units in the text book. Actual reading started from the unit 10. The readability score was between 29 to 65. But it was clear to state that the units were not arranged according to their readability score.

4.2 Selection of the paragraphs

In the construction and standardization of oral reading test, the foremost need was to prepare reading material as per the comprehension level of the pupils of standard VIII. The selection of the paragraphs needed utmost care because the success of reading process depended on the paragraphs. As mentioned earlier, the first step taken by the investigator was to study the text book of standard VIII thoroughly. The study included words, phrases, sentences, usages, structure of sentences, tenses used included in the units. Different topics were selected and the investigator prepared twenty-five paragraphs maintaining words, phrases, sentence structure and usages same as that of text book. The length of each paragraph was also almost maintained as that of the units of the text book. The paragraphs were edited by language experts. Four of the paragraphs - one on national hero, one on narratives pertaining to birds and animals, one on child as hero, and one on the life in the village - were redrafted according to their suggestions. These redrafted paragraphs were further subjected to the screening by the guide of the investigator.
After the preparation of twenty-five paragraphs were ready, the readability of the paragraphs was calculated. Three of the paragraphs were rejected as they were outside the range of the readability of the units of the textbook. The investigator took an oral reading test with the remaining twenty-two paragraphs for thirty-five pupils selected at random from different schools of different regions. It was noticed that four of the paragraphs were too difficult for all the thirty-five pupils and so they were also dropped. About twenty-two language teachers were again consulted to know whether all the eighteen paragraphs should be included for a test for the pupils of standard VIII. The teachers were of the opinion that the eighteen paragraphs would be a little lengthy. Even then the investigator kept all paragraphs keeping in view that this was the pilot administration and it is quite possible that some of the paragraphs may be dropped out due to one reason of the other.

The readability of the paragraphs was calculated using the same procedure as that used for the calculation of the readability of the textbook. The readability was found to be between 31 and 68.

<table>
<thead>
<tr>
<th>Paragraph</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>R.Score</td>
<td>52</td>
<td>36</td>
<td>33</td>
<td>40</td>
<td>41</td>
<td>47</td>
<td>30</td>
<td>43</td>
<td>42</td>
<td>40</td>
<td>31</td>
<td>37</td>
<td>53</td>
<td>68</td>
<td>48</td>
<td>32</td>
<td>33</td>
<td>34</td>
</tr>
</tbody>
</table>
The readability of the prepared paragraphs was also within the range of that of English Text book units. The aim of calculating readability was to achieve a happy compromise between the readability of the text book with that of the prepared paragraphs.

Thus the following points were taken into account while selecting eighteen paragraphs for the pilot test.

1. Comprehension level of the pupils.
2. Study of the text book which included words, phrases, sentences, usages, structure of sentences and tenses.
3. Length of the paragraphs almost same as that of the text book.
4. Editing the paragraphs with the help of language experts.
5. Redrafting of some paragraphs.
6. Calculation of readability of the paragraphs.
7. Pre-pilot testing

4.3 Testing the comprehension of the paragraphs

One of the important aims of constructing the test was to identify the poor readers and to obtain detailed information about each child's comprehensive level and pattern of performance in reading. It was necessary to measure the comprehension of each child after having read the paragraph. A number of methods were applied to measure the comprehension
of the pupils. The following methods were applied:

1. What should be the procedure of asking the questions: written or oral?

2. What type of questions are the best to measure the comprehension of the paragraphs?

3. Should much importance be given to memory, which is not reading skill, to measuring comprehension?

4. Should reading comprehension be quantitative or qualitative facts?

Questions starting with 'how much', 'how many', 'when' and 'where' are usual types questions. 'Why' cannot be an easy form of question. In these types of questions the background of students and their experience would influence their responses. First of all the investigator applied the short answer type questions for each paragraph; but it was noticed that these questions were not effective because they were recall type. It was found that the pupils of standard VIII were lacking in their expression to answer these questions due to poor language capacity. Since the purpose of the questions framed was only to measure the comprehension, the investigator decided to frame multiple-choice items for each paragraph.

4.4 Multiple choice items

A multiple choice item presents two or more responses, only one of which is correct or definitely better than the others.
The multiple-choice items of testing the comprehension was selected in the present test because it was regarded as the most valuable and most generally applicable test form. Prominent measurement specialist Lindquist asserted that it is "definitely superior to the other types" for measuring such educational objectiyes as inferior reasoning, reasoned understanding or sound judgement and discrimination on the part of the pupil.

Many experts in the field of testing consider that multiple-choice test items are currently the most highly regarded and widely used form of objective test item. Multiple-choice helps to measure the important educational outcomes as knowledge, understanding and judgement; ability to solve problems, to recommend appropriate action and to make prediction. Practically any subject matter can be tested in this way. In structure, this type consists of an incomplete statement or stem associated with a variety of options. Normally, the latter consists of a correct answer and several distractors. In multiple-choice items there is minimum writing and chances of a correct guess are reduced to one in four and hence less encouragement to guessing. Multiple choice items provide an easy system of scoring for the instructor.

Because all the above virtues multiple-choice items were used in the present test to measure the comprehension after the oral reading of each paragraph. The following points were observed while the multiple-choice items were constructed to measure the comprehension of the pupils.

1. The questions were on the basis of independently meaningful statements of relevant important ideas.

2. The questions, and ideas were chosen with a view to maximizing the discriminating power of the items.

3. Each item had begun with a stem question to which a reasonably adequate answer was given.

4. The investigator was careful to avoid the inclusion of irrelevant or superficial clues and insured that the test measured more than the memorization of factual knowledge.

5. The incorrect alternatives or distractors were written in such a way that they were thoroughly wrong or clearly inadequate but still plausible enough to appeal it to many pupils with poor comprehension power.

Even if all the above rules are observed, the test may still not be a standard one if the questions contain silly matters. Therefore, the teacher should be sure that the test really measures what is expected to be measured.
The investigator consulted various language experts and test constructors working in the field and took their advice to make the questions of high level understanding. This understanding includes:

1. implications of facts,
2. relation between concepts,
3. practical applications of principles,
4. critical reactions.

Higher forms of knowledge could be measured with this type of objective items.

The administration of the test was characterised by some general directions with reference to the test. The general direction was given with a view to creating a sense of ease and confidence in pupils and ensuring a certain level of motivation. Suitable instructions were prepared to explain to the testees what they were supposed to do with the test. Instructions were given for tick-marking the answers on the test itself. Adequate care was taken to make the instructions clear and self-explanatory.

Thus all the constructed paragraphs, together with their questions and distractors, were assembled together. The readability was considered while the paragraphs were arranged. To check the thoroughness this form was tried out on a random sample of fifteen pupils, from five secondary schools of Navsari Taluka.
The paragraphs and the questions were finalised for the pilot testing after discussions with language experts. A separate answer-sheet was prepared for marking the different errors committed by the pupils during the oral reading. The identifying data regarding the individual was also included on the front page.

The samples of the pilot form of the test and the answer sheet are appended at the end. (Appendix No. 1.)