Appendix- II

ACADEMIC ACHIEVEMENT TEST IN SCIENCE
Prepared By Investigator

Name : __________________________
Class : __________________________
School : __________________________
Roll No : __________________________

INSTRUCTION

➢ Not more than 35 Minutes are given and read the statement carefully
➢ Put the right (✓) mark in any one of the following four alternative response
➢ Read the statement carefully

Ability, aptitude, Achievement, proficiency and other psychological tests serve a great variety of purposes in our society today. The use of many of these tests has had and continues to have profound, sometimes very rewarding and other times detrimental effects on individual's lives.

Achievement is the accomplishment or proficiency of performance in a given skill or body of knowledge. Therefore, it can be said that achievement implies the over all mastery of a pupil on a particular context. Good (1973) defined Academic Achievement as Knowledge attained or skill developed in the school subject usually designated by test scores or marks assigned by the teacher or both.

In the present study investigator was to find Achievement level of students in science before and after introducing the external variables. It was decided to prepare the achievement test in science herself for target group of VII grade students. It was also decided to prepare multiple choice type question or item to reduce the subjectivity and to increase the objectivity and reliability of the test. Firstly, for the preparation of the test investigator prepared a plan of content. Test is developed to measure the objectives such as knowledge, application and understanding. It is prepared as per syllabus of P.S.E.B.

One of the important step in the study was the preparation of Unit Plan and tools to collect the data as stated earlier in the chapter -3 (Method and Design of the study).

These concepts were taken from different units prepared by investigator, that have been given in Table 1.
Table: 4.12.1
Unit-wise allocation of items included in the Preliminary Draft of the Test

PRELIMINARY DRAFT OF FIVE UNITS

<table>
<thead>
<tr>
<th>NAME OF UNIT</th>
<th>TOPIC</th>
<th>CONTENTS</th>
<th>CAI</th>
<th>AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIT-I</td>
<td>(1) Light</td>
<td>Light travels in straight line, shadow, eclipse</td>
<td>CD with Pictures</td>
<td>Models shown</td>
</tr>
<tr>
<td></td>
<td>(2) Heat And Temperature</td>
<td>Concept of heat, effects of heat, modes of its transfer</td>
<td>P.P.T shown</td>
<td>Activity done</td>
</tr>
<tr>
<td>UNIT-II</td>
<td>(3) Water-a wonder liquid</td>
<td>Water essential for germination, important for growth, properties of water</td>
<td>Internet and CD was used</td>
<td>Activity done with field activity</td>
</tr>
<tr>
<td>UNIT-III</td>
<td>(4) Nutrition In living beings</td>
<td>Photosynthesis, nutrition in animals, respiration</td>
<td>CD was shown</td>
<td>Experiment was done to prove</td>
</tr>
<tr>
<td>UNIT-IV</td>
<td>(5) Effects Of Population Growth On Environment</td>
<td>Air pollution and causes, water pollution and its causes</td>
<td>P.P.T shown</td>
<td>Out door visit with activity done</td>
</tr>
</tbody>
</table>

4.12.2. Description of sample for Item analysis

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>NO. OF PUPIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt. Balbir Sen. Sec. School Faridkot</td>
<td>70</td>
</tr>
<tr>
<td>M.G.M Sen. Sec. School Faridkot</td>
<td>60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>130</strong></td>
</tr>
</tbody>
</table>

A. TEST-RETEST METHOD OF RELIABILITY

Test-retest reliability comes out to be 0.95. This is fairly high.

\[ r = 0.95 \]

Thus this value shows fairly high reliability.
B. SPLIT-HALF RELIABILITY

By Rulon formula reliability coefficient comes 0.94.

\[ r_0 = 1 - \frac{\sigma^2_d}{\sigma^2_t} \]

\[ r_0 = 0.94 \]

Hence, reliability coefficient comes 0.94 which is fairly high.

C. VALIDITY

For validity measurement of the test Content Validity was used and checked. Content Validity is the degree to which a test measures an intended content area. Content validity of a test is measured in two ways: (1) by experts judgment and (2) by statistical analysis. In Statistical technique investigator correlated the scores on the two independent tests, both of which measure same thing. Investigator correlates the scores on the constructed test with Achievement Test in Science by Dr. S. C. Gakhar, Dr. Rajnish. Number of students taken was 30 on which the both tests were applied. Coefficient of Correlation comes to be very high between both tests that is 0.95.