CHAPTER – III

METHODOLOGY

III.1. SAMPLE

The populations of the study were all boarding and non-boarding students of Aurangabad district, Maharashtra. The samples of the study were randomly selected from Tanwani English School, Arya Chanakya Vidyadham, Nat Valley School and Maharashtra Public School. In all, 800 subjects were tested for this study. Every subject was allotted with a code and a separate self-contained form for test results. The tests were selected in the aspects of development. In development the research scholar was select the standard tests in Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Suppleness-Flexibility, Neuromuscular Co-ordination, Body Composition and Health Hazards. The tests were administrated individually under standard condition applicable for specific tests and the time period required between two tests is amply considered.

Coding Procedure and Colors Adopted for The Samples

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>CODE</th>
<th>COLOR</th>
<th>TOTAL SUBJECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BBS-01 TO BBS-200</td>
<td>YELLOW</td>
<td>200</td>
</tr>
<tr>
<td>2</td>
<td>BGS-201 TO BGS-400</td>
<td>GREEN</td>
<td>200</td>
</tr>
<tr>
<td>3</td>
<td>NBBS-401 TO NBBS-600</td>
<td>BLUE</td>
<td>200</td>
</tr>
<tr>
<td>4</td>
<td>NBGS-601 TO NBGS-800</td>
<td>RED</td>
<td>200</td>
</tr>
</tbody>
</table>

Note

- BBS  -  BOARDING BOYS STUDENTS
- BGS  -  BOARDING GIRLS STUDENTS
- NBBS -  NON BOARDING BOYS STUDENTS
- NBGS -  NON BOARDING GIRLS STUDENTS
III.2. VARIABLES

Dependent Variables
1. Muscular Strength.
2. Muscular Endurance.
3. Cardiovascular Endurance.
4. Suppleness-Flexibility.

Confounding Variables
- Intervening Variables
  Fatigue, Excitement, Motivation, Anxiety etc.
- Extraneous Variables:
  2. Age.
  3. Past Training Effect.

Dependent Variables:
1. Physical Fitness Tests.
2. Health Hazards Test.

III.3. TOOLS AND MEANS

There are lots of tests for Muscular strength, endurance Muscular, Cardiovascular Endurance, Suppleness-Flexibility, Neuromuscular Co-ordination, Body Composition and Health Hazards. These tests deal with specific age, sex or category and the coefficients of reliability and validity are not stable and vary in wide range of applied in the present study. These tests are useful to distinguish specific group of children, and it is difficult to separate the individuals according to their categories. So research scholar will use some of the standard tests which applicable to the samples.
TOOLS USED

Personal Data Bank

It is used to collect the information of an individual. Personal data bank consists of the following aspects: Name, Address, Date of birth, Gender, Family Status, School Experience (Boarding / Non-Boarding).

Tests

- Muscular Strength Test
  - Chin up Test:
    For this test the bar is situated at that highest point so that the feet of the tallest boy does not touch the ground when he hanging on the bar. The boy sample is asked to hang from the bar by hands and to chin up by pulling himself up until his chin is above the bar. Then asked to lower his body until his arms are straight, also asked him don’t jerk or kick the body for support. If sample does not straighten arms or if he kicks or jerks, then recorded only half count.
    
    The number of complete chin ups constitutes the scoring.

- Muscular Endurance Test
  - 1 minute sit ups test
    In this test the sample is asked to lie on back with bent knees. The feet should be on the floor and the angle of the knees should be less than 90 degree. The samples feet hold by partner to assure that the feet do not leave the surface or floor. Then asks to sample for tighten the abdominal muscle and pull up the upper body or head towards the knees. After touching head to knees the sample asks to reach original position. The all this process called one sit up.
    
    The sample asks to do the same position repeatedly when timer starts the watch for marking time. After 60 seconds the timer signals to stop and tester recorded number of sit ups execute by sample.
    
    The number of sit ups in one minute constitutes the scoring.

- Cardiovascular Endurance Test
  - 12 minute run-walk test
    For this test a sample is asked to take standing stand on the starting point on the track. At the signal ‘Go’, the sample covers as much distance as possible in
12 minutes. The tester can encourage to samples to run but the walking also allowed and total distance covered in 12 minutes is recorded.

- **Suppleness-Flexibility Test**
  - **Bend and reach test**
    This test is used for measuring flexibility of back and legs (hamstring muscle). For this test a sample is asked to take standing position on the podium. Now the sample is asked to lean a forward and place hands on the measurement scale which situated at the podium vertically. Then sample asked to reach as down as possible on measurement scale. The reaching measurement is the score of test.

- **Neuromuscular Co-ordination Test**
  - **Ball catch and throw**

- **Proper Body Composition Test**
  - **WHR (Waist-Hip Ratio)**
  - **BMI (Body Mass Index)**

- **Health Hazards related Questionnaire**

**IV.4. PROCEDURE**

The samples of the study were randomly select from Tanana English School, Arya Chanukah Vidyadham, Nath Valley School and Maharashtra Public School. In all 8 tests, first was selected for evaluating the Muscular Strength, second was selected for evaluating the Muscular Endurance, third was selected for evaluating the Cardiovascular Endurance, fourth was selected for evaluating the Suppleness-Flexibility, fifth was selected for evaluating the Neuromuscular Co-ordination, sixth 2 were selected for evaluating the Body Composition and seventh was selected for the evaluating Health Hazards of the subjects. To have the difference of data for assessing the development it was decided to organize the test on 800 subjects. Much of the samples collected from the Aurangabad region.

**Assistants of the research scholar for data collection**

- Dr. Sandpit Jagtap – M.P.Ed, Ph.D
- Mr. Shekhar kothule – M.P.Ed, M.Phil
- Mr. Kalyan Gadkar – M.P.Ed
- Miss. Swati Kaldate – M.P.Ed

Reliability of Supporting Staff

The above supporting staffs are well qualified and experienced about conducting different tests and taking precise measurements.

III.6. STATISTICAL METHODS

To analyze the collected data the scores are arranged according to the comparison and in sequential order so as to find out the statistical values. The following statistical variables were selected for comparing, analyzing and interpretation of numerical values and being on which the findings was discussed.

Mean, Standard Deviation and t-Test were used at significance of 0.05 levels for testing the null hypothesis for the difference between various sample means.