CHAPTER-III

METHODOLOGY

In this chapter, the procedure adopted for the selection of subjects, selection of variables, reliability of data, administration of tests and the statistical techniques employed for analyzing the data have been described.

SELECTION OF SUBJECTS

The study was designed to revalidate and to construct the norms for the test items of the World Beaters Talent Spotting Scheme for the eighth standard girls of Tamil Nadu State. The data were collected in two phases. The first phase is related to the revalidation of the test items of the World Beaters Talent Spotting Scheme and the second phase to the development of the norms for the test items of the World Beaters Talent Spotting Scheme.
First Phase

During the first phase, a sample of sixty girls studying eighth standard in the age group of 12 to 13 years were chosen randomly as subjects for this study to test the scientific worth of the test items of the World Beaters Talent Spotting Scheme. They were drawn from three schools of Pudukkottai District, Tamil Nadu, India.

The following table provides the details of subjects chosen from various schools for investigation.
TABLE-I

DETAILS OF THE SUBJECTS OF THE STUDY: PHASE-I

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of the School</th>
<th>Place</th>
<th>No. of Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Government Girls Higher Secondary School</td>
<td>Tirumayam, Pudukkottai District</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>Sacred Heart Girls Higher Secondary School</td>
<td>Pudukkottai, Pudukkottai District</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>Mount Zion Matriculation Higher Secondary School</td>
<td>Pudukkottai, Pudukkottai District</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total 60</td>
</tr>
</tbody>
</table>

**Second Phase**

During the second phase, a sample of 1,500 girls studying eighth standard in the age group of 12 to 13 years were selected at random from various schools of 15 districts of Tamil Nadu State as subjects to construct norms for the test items of the World Beaters Talent Spotting Scheme.
SELECTION OF VARIABLES AND TESTS

The World Beaters Talent Spotting Scheme was launched by the Youth Welfare and Sports Development Department, Tamil Nadu, India, in the year 2002 with the goal of talent identification at early age, and grooving and moulding the attitude of physical fitness in school students in Tamil Nadu state. The primary aim of this scheme is to discover the motor qualities among the children studying in 6th Std. to 8th Std. in all schools in Tamil Nadu state. These motor qualities help in identifying speed, strength, explosive power, agility and endurance levels in a child and also indicate the child’s potential to perform a particular game or sport. The best talents among these schools were privileged to undergo specialized coaching in different locations in the state. The battery of test comprising of the following tests should be conducted thrice in every year for boys and girls studying in 6th to 8th standards to find out the improvements of the students.
For the purpose of the study the following variables and tests were selected as recommended by the Youth Welfare and Sports Development Department of Tamil Nadu government to identify the motor qualities among the eighth standard girls. The selected variables and tests items are presented in Table-II.

**TABLE-II**

**SELECTION OF VARIABLES AND TESTS**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Motor Quality</th>
<th>Test</th>
<th>Unit of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Speed</td>
<td>50 Meters Run</td>
<td>1/10&lt;sup&gt;th&lt;/sup&gt; of Second</td>
</tr>
<tr>
<td>2</td>
<td>Strength</td>
<td>Shot Put (4 Kg)</td>
<td>Meters</td>
</tr>
<tr>
<td>3</td>
<td>Explosive Power</td>
<td>Long Jump</td>
<td>Meters</td>
</tr>
<tr>
<td>4</td>
<td>Agility</td>
<td>6x10 Meters Shuttle Run</td>
<td>1/10&lt;sup&gt;th&lt;/sup&gt; of Second</td>
</tr>
<tr>
<td>5</td>
<td>Endurance</td>
<td>600 Meters Run</td>
<td>Minutes</td>
</tr>
</tbody>
</table>
TESTER COMPETENCY

Even though the investigator was quite familiar in the techniques of conducting these tests, the assistance of trained physical education teachers were utilized during the data collection. Each tester was directed to get himself acquainted with or briefed on the procedure of conducting and scoring the selected test items.

INSTRUMENT RELIABILITY

The stopwatches and measuring tapes used for the collection of data were considered reliable as they were procured from reputed firms and were being used for research purposes. Further, these instruments were calibrated in SI units. To determine the reliability of the instruments, measurements on each of the (variables) tests were recorded five times under similar conditions using the same instrument. The scores obtained were the same and the scores were also compared with other scores recorded by the instruments from other reputed firms. Hence they were accepted as reliable and precise for the purpose of this study.
ORIENTATION TO THE SUBJECTS

In order to get full cooperation from the subjects, the investigator clearly explained the purpose of the study, test administration and procedure to be followed to the subjects prior to the administration of the tests. Demonstrations of the tests by some of the subjects were also done to make the tests clear to the subjects.

COLLECTION OF DATA

The data pertaining to the study were collected in two phases. During the first phase, 60 subjects were tested on both criterion measures and already constructed standardized test measures to establish scientific authenticity of the test items of the World Beaters Talent Spotting Scheme.

In second phase, 1500 subjects were tested only on the criterion measures in order to construct norms for the test items of the World Beaters Talent Spotting Scheme.
TEST ADMINISTRATION

CRITERION MEASURES

I. 50 Meters Run

Purpose

To measure the speed of the subjects.

Equipment and Facilities Required

Stop Watches (1/100th of a second), Flag posts, 50 Meters running course and measuring tape.

Procedure

Fifty meters distance is to be measured and the flags to be fixed on both the ends. A perpendicular line is drawn at the starting and finishing points. Only standing start is permitted. On the command, the subject runs at maximum speed to complete the 50 meters course.

Scoring

Time is taken in the nearest 1/10th of a second.
II. Shot Put (4 Kg.)

**Purpose**

To measure the strength of the subjects.

**Equipment and Facilities Required**

4 kg. Shot, Shot put sector, Toe board and Measuring tape.

**Procedure**

The subject is permitted to take the throw in the shot put circle with one hand only by taking two or three steps.

**Scoring**

Three trails are given and the best performance is recorded in the nearest meters.
III. Long Jump

Purpose

To determine the explosive power of the subjects.

Equipment and Facilities Required

Landing pit, Take off board and Measuring tape.

Procedure

The subjects are permitted to use the runway. The take off board is fixed at one to three meters before the landing pit. Subjects are permitted to jump from the take off board or any point before it.

Scoring

The distance from the take off point to the landing point is measured in meters. Three trails are given and the best performance is taken into account.
IV. 6 x 10 Meters Shuttle Run

Purpose

To determine the agility of the subjects.

Equipment and Facilities Required

Ten meters distance is marked by two parallel lines and Stopwatch.

Procedure

The subject stands behind the starting line. On the signal, the subject runs fast, touches the other line with one hand, turns and comes back to the starting line, touches it with hand, turns and repeats it for a total of three times (3 times up and down).

Scoring

The time taken by the subject to complete the course i.e., 6 x 10 mts. is recorded in 1/10th of a second.
V. 600 Meters Run

Purpose

To assess the endurance of the subjects.

Equipment and Facilities Required

A 400 Meters track and Stopwatch.

Procedure

On signal, the subject runs 1½ laps (600 Meters) around the 400 Meters track.

Scoring

On the completion of 1½ laps (600 Meters) the time taken by the subject is recorded in minutes.
I. 50 - Yard Dash

**Purpose**

To measure the speed of the subjects.

**Equipment and Facilities Required**

An area on a track, football field or playground with a starting line, a 50-yard course, and a finish line and two stop watches.

**Procedure**

After a short warm-up period the student takes a position behind the starting line. Best results are obtained when two students run at the same time for competition. The starter uses the command, “Are you ready?” and “Go!” The latter is accompanied by a downward sweep of the arm as a signal to the timer. The students run across the finish line. One trial is permitted.

**Scoring**

The score is the elapsed time to the nearest 1/10th of a second between the starting signal and the instant the student crosses the finish line.
II. Flexed Arm Hang

**Purpose**

To measure arm and shoulder strength.

**Equipment and Facilities Required**

A metal or wooden bar approximately 1½ inches in diameter is placed at the subject’s height. A doorway gym bar adjusted at the desired height in a doorway works very well. If these items are not available, it is necessary to improvise by using some kind of pole or pipe across bleachers or ladders. A stopwatch is needed.

**Procedure**

The height of the bar is adjusted to approximately the standing height of the subject. The student grasps the bar with an overhand grasp. She then raises her body off the floor with the help of assistants to a position where the chin is above the bar. The elbows should be flexed and the chest should be close to the bar. Two spotters, one in front and the other in back of the subject, are recommended for assistance in getting to the “hang” position. The subject
holds the hand position as long as possible. The stopwatch is started as soon as the subject assumes the starting position and is stopped when the chin touches the bar, falls below the bar, or when the head of the subject is tilted back to keep the chin above the bar.

**Scoring**

The score is the elapsed time to the nearest $1/10^{th}$ of a second that the subject maintained the proper hanging position.
III. Standing Long Jump

Purpose

To measure the explosive power of the subjects.

Equipment and Facilities Required

Measuring tape and an outdoor jumping pit.

Procedure

The student stands behind a take-off line with his feet several inches apart. Before jumping, the student dips at the knees and swings the arms backward. He then jumps forward by simultaneously extending the knees and swinging the arms forward. Three trials are permitted. Measurement is from the closest heel mark to the take-off line. Indoor administration is the best accomplished by placing a tape measure on the floor at right angles to the take-off line and permitting the student to jump along the line. Measurement can then be made by sighting across the tape to the point of the jump.
**Scoring**

The score is the distance between the take-off line and the nearest point where any part of the student’s body touches the floor. It is measured in nearest meters. Three trials are permitted. Only the best trial is recorded.
IV. Shuttle Run

Purpose

To measure the agility of the subjects.

Equipment and Facilities Required

Two lines parallel to each other are marked on the floor 30 feet apart. Since the student must overrun both of these lines, it is necessary to have several feet more of floor space at either end. Two blocks of wood, 2 x 2 x 4 inches and a stopwatch are needed.

Procedure

The student stands at one of the lines with the two blocks at the other line. On the signal to start, the student runs to the blocks, takes one, and returns to the starting line, and places the block behind that line. She then returns to the second block, which is carried across the starting line on the way back. Two trials are permitted.

Scoring

The score is the elapsed time recorded in 1/10th of seconds for the better of two trials.
V. 600 Yard Run / Walk

Purpose

To measure the endurance of the subjects.

Equipment and Facilities Required

A 400 meters track and stopwatch.

Procedure

On signal, the subjects run/walk through the 400 meters track upto 600 yard distance.

Scoring

The score is the elapsed time to the nearest minute between the starting signal and the instant the student crosses the finish line.
EXPERIMENTAL DESIGN AND STATISTICAL TECHNIQUE EMPLOYED

Simple random group design was employed for this study in which the subjects were selected in two phases based on the simple random method.

The co-efficient of correlation was computed between the two trails conducted through test and retest method to establish interclass reliability. To establish objectivity co-efficient of correlation was computed between the trails conducted by different testers (Barrow and McGee, 1996).

The Pearson product moment correlation was computed between the criterion measures and already established standardized test to estimate concurrent validity (Barrow and McGee, 1996).

Finally percentile rank method was used to construct the norms for every variable selected for this study. Bar and Pie diagrams were used for the graphical representation of the data.