CHAPTER - III

PROCEDURE
CHAPTER III

PROCEDURE

This chapter deals with the selection of subjects, test items and testing procedures as well as the construction of norms for Middle school children.

3.1. Selection of the subjects

The subjects for the present study boys and girls of age groups of 11 to 15, was selected at random from the middle schools of Delhi. The age of the subject was determined from the date of birth from the school register.

At Random: First the schools were selected by lot. Names of all the schools were included and the students were selected according to the random numbers using random tables.

Care was taken to see that the tests were not given to the subjects whose medical status was questionable.

Those who were suffering chronic disorders were eliminated (Medical Status).

3.2. Selection of the test

The Glover Physical Fitness Test\(^1\) was selected as the test for assessing the physical fitness status of middle school children as this test was a convenient instrument for the evaluation of the status of physical fitness among the middle school children.

3.3. Reliability of data

The reliability of the data was ensured by establishing the instrument reliability, tester competency and reliability of test.

**Instrument reliability**

The stop watches used for measuring the performance in shuttle race, seal crawl and the 30-seconds sit-up were calibrated Swiss made standard watches available in the G. D. Goenka School, Delhi. All the equipment used for various measurements were considered reliable and precise enough for the purpose of this study.

**Tester competency**

The tester had undergone training to learn the correct procedure and methodology of administering the test under the supervision of experts from the Lakshmibai National College of Physical Education, Gwalior.

**Reliability of Tests**

The selection of the test items to measure the components such as power, strength, speed and endurance were made on the basis of their validity reliability and administrative feasibility.

**3.4. Collection of data**

The data for the physical fitness test items were obtained by administering the test to 5000 pupils 500 each in the age groups eleven, twelve, thirteen, fourteen and fifteen for both boys and girls separately from the various schools of Delhi, as shown in the Appendix I.

The test was administered by the scholar taking the assistance of the physical education teachers of the concerned schools and also of MPE scholars who had undergone training from LNIPE, Gwalior.

The list of schools and the number of pupils from each school used as a basis for establishing the norms are given in Appendix II.
This physical fitness test was an individual performance type test composed of four items. Separate norms were obtained for each of the test items for both the boys and girls of each age group from 11 to 15 based on their performance.

The results of these test items were useful in determining the status and achievement of middle age children in physical fitness.

The test items used were, standing broad jump, shuttle run, the seal crawl and sit-ups to measure power and leg strength, speed and agility, shoulder girdle strength and endurance and abdominal strength, endurance and speed respectively.

3.5. Test items

**Item number 1 - Standing broad jump**

Purpose: To measure power and leg strength

Equipment: Mat floor or outdoor jumping pit and measuring tape

Procedure: A take-off line was marked on the floor using the masking tape. Standing from right behind that line, bending the knees and swinging the arms the child jumped as far as she could.

---

Fig. 1. Standing Broad Jump: Starting Position
Scoring: The measurement was taken from the farthest end of take-off line to the nearest point where any part of the body touched the floor. Three trials were permitted and the best of the three trials in inches was recorded as the score. (Fig. 1)

Item number II Shuttle Run

Purpose: To measure leg strength, speed and endurance

Equipment: Masking tape, Waste paper baskets -2 , Stop watch 1

Procedure: Two lines, 40 feet apart were marked using masking tape. Two waste paper baskets were placed on these lines. On signal 'ready go' the pupil ran as fast as he could, starting from behind the line and going around both of the baskets five times so that 400 feet are completed.

Scoring: The time taken in seconds to complete to run or walk around both baskets five times is marked as the score for the shuttle run. (Fig. 2 & 3)

Item Number III -Seal Crawl

Purpose: To measure arm and shoulder girdle strength, endurance and speed.

Equipment: Masking tape, stop watch

Procedure: Two lines 20 feet apart were marked using masking tape.

The subject assumed a front leaning rest position with the weight supported on straightened arms and toes, keeping the body straight, walked forward, using the hands for propelling force and dragging the feet. The body was kept straight and the head up. It was seen that the knees did not touch the ground.

Scoring: The time taken to nearest tenth of a second was recorded as the score. (Fig. 4 & 5)


Fig. 2. Shuttle Run: Starting Position

Fig. 3. Shuttle Run: Starting Position
Fig. 4. Seal Crawl: Starting Position

Fig. 5. Seal Crawl: Starting Position
Item number IV - Sit-ups (Flexed leg)

Purpose: To measure abdominal strength, endurance and speed.

Equipment: Stop watch, clean floor, mat or dry turf.

Procedure: The student lay on his back with knees flexed and feet flat on floor with the heels between 12 and 18 inches from the buttocks. The angle at the knees should be less than 90 degrees. The arms were placed on the back of the neck with fingers clasped and elbow placed squarely on the ground crossed on the chest with the hands on opposite shoulders. The feet were held by a partner to keep them in touch with the testing surface. The student curled to the sitting position maintaining arm clasped behind the head and the elbows touched to the knees. One sit-up was completed when the elbows touched the knees. The movement was completed when the student returned to the down position in which the mid back contacted with the testing surface.

Scoring: The score was the number of completed sit-ups in 30 seconds time period. (Fig. 6 & 7).

The sample score card is given in Appendix –III

\[Evelyn\ Lo\ Schurr,\ Movement\ Experiences\ For\ Children\ New\ Jersey:\ Prentice\ Hall\ Inc.,\ 1980]\ p\ 548
Fig. 6. Sit-ups Flexed Leg: Starting Position

Fig. 7. Sit-ups: Final Position
3.6. Statistical analysis

The data were subjected to statistical analysis. Mean, Standard Deviation, standard error of the mean and coefficient variations were calculated\(^5\).

't' ratio was calculated to find the difference between boys and girls in each age group and for each of the components. The calculated value was compared with the Table value for the significance of difference, for each of the five age groups of the girls and of the boys, as well as the difference with respect to each of the components. The difference between the means was tested for significance referring the table value of 't'. The level of significance was fixed at 0.05 for the purpose of the present study.

The percentile scores were calculated from the raw scores obtained on each of the components of physical fitness for each age group for both boys and girls. On the basis of percentile scores the achievement levels were established, obtaining percentile norms\(^6\).

\(^6\) Ibid, P 146