Chapter IV
ANALYSIS OF DATA AND RESULTS OF THE STUDY

The reliability of data, level of significance, findings and discussion of findings are presented in this chapter. The raw data is presented in Appendix-C.

Reliability of Data

The reliability of responses on self-concept was computed using the split half method. Items on the questionnaire were divided into two equal halves, putting odd numbered items in one half and even numbered items in the other. Correlation coefficient were computed between the resultant, two sets of scores of self-concept. The obtained half test coefficients were converted into coefficients of reliability for the whole test using Spearman-Brown Prophecy Formula.\(^1\) The reliability coefficient are presented in Table-2.

TABLE 2

RELIABILITY COEFFICIENTS FOR DATA IN SELF-CONCEPT

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient of Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-concept</td>
<td>.76</td>
</tr>
</tbody>
</table>

The value of reliability coefficient is quite high and conform to the range prescribed for affective measurement.

Level of Significance

Significance of the difference between pre and post-test means of the two groups as well as the significance of the difference between the groups on pre and post-test means was tested at .05 level of confidence which was considered to be the appropriate level of significance in the psychological studies.

Findings

Findings of the study pertaining to the comparison of Traditional Physical Education (TPE) and Movement Education (ME) groups on pre and post-test for self-concept of boys are presented in Table-3.
TABLE 3

COMPARISON OF TRADITIONAL PHYSICAL EDUCATION GROUP AND MOVEMENT EDUCATION GROUP ON PRE AND POST TESTS OF SELF-CONCEPT OF SCHOOL BOYS

<table>
<thead>
<tr>
<th>Mean Scores</th>
<th>Groups Compared</th>
<th>Difference Between Means</th>
<th>'t'</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TPE</td>
<td>ME</td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>15.38</td>
<td>14.60</td>
<td>0.78</td>
</tr>
<tr>
<td>Post-test</td>
<td>16.66</td>
<td>16.18</td>
<td>0.48</td>
</tr>
</tbody>
</table>

\[ t_{0.05(98)} = 1.98 \]

As the 't' ratios for both pre-test and post-test comparison between the groups of boys are far below the value required for significance, the obtained 't' value of 0.21 and 0.16 i.e. \( t \) (98) = 1.98, on pre-tests and post-test of Traditional Physical Education and Movement Education respectively.

There is no real difference between the Traditional Physical Education and Movement Education groups with regard to self-concept either before or after the experiment.

Figure-1 presents the bar diagram for pre and post-test scores in self-concept of
Fig. 1: Bar Diagrams for Pre and Post-test Scores in Self-concept of Traditional Physical Education and Movement Education Group of Boys.
Traditional Physical Education and Movement Education groups of boys

The comparison of pre and post-test means scores in self-concept for the two groups of school boys is presented in Table-4:

**TABLE 4**

**COMPARISON BETWEEN PRE AND POST-TEST SCORES IN SELF-CONCEPT OF TRADITIONAL PHYSICAL EDUCATION GROUP AND MOVEMENT EDUCATION GROUP OF SCHOOL BOYS**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean Scores</th>
<th>Difference</th>
<th>'t'</th>
<th>'t'</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Compared Pre</td>
<td>Between Post Means</td>
<td>DM</td>
<td></td>
</tr>
<tr>
<td>T.P.E.</td>
<td>15.38</td>
<td>16.66</td>
<td>1.28</td>
<td>3.11</td>
</tr>
<tr>
<td>M.E.</td>
<td>14.60</td>
<td>16.18</td>
<td>1.58</td>
<td>3.61</td>
</tr>
</tbody>
</table>

\[ t_{.05(98)} = 1.98 \]
The means of the traditional physical education group and movement education groups of boys are far below the value which is required for statistically significant i.e. $t_{.05(98)} = 1.98$. Mean difference between pre and post-test of traditional physical education is 0.41 and for movement education is 0.44 respectively. Calculated 't' is showing much lesser value than that the tabulated 't' is 1.98 at .05 level of confidence.

Both the Traditional Physical Education and Movement Education groups does not have any significant improvement in self-concept.

Figure-2 presents the bar diagram for Traditional Physical Education and Movement Education groups in self-concept of pre and post-test scores of boys.

Findings pertaining to the comparison of Traditional Physical Education and Movement Education groups on pre and post-tests of self-concept of girls is presented in Table-5:
Fig. 2: Bar Diagrams for Traditional Physical Education and Movement Education Groups in Self-concept of Pre- and Post-test Scores of Boys.
TABLE 5

COMPARISON OF TRADITIONAL PHYSICAL EDUCATION GROUP AND MOVEMENT EDUCATION GROUP ON PRE AND POST-TEST OF SELF-CONCEPT OF SCHOOL GIRLS

<table>
<thead>
<tr>
<th>Mean Scores</th>
<th>Groups Compared</th>
<th>Difference between Means</th>
<th>DM</th>
<th>'t'</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TPE</td>
<td>ME</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>14.72</td>
<td>13.76</td>
<td>0.96</td>
<td>3.68</td>
</tr>
<tr>
<td>Post-test</td>
<td>16.76</td>
<td>15.86</td>
<td>0.90</td>
<td>3.25</td>
</tr>
</tbody>
</table>

$t_{.05(98)} = 1.98$
The 't' ratios for both pre-tests and post-tests between the Traditional Physical Education and Movement Education groups of girls are far below the value required for significance, the significance difference 0.26 and 0.28 for pre-tests and post-test respectively. Calculated 't' is lesser than tabulated 't' which is 1.98 at 0.5 level of confidence.

Results reveals that there is no real difference between the Traditional Physical Education and Movement Education groups with regard to self-concept either before or after the experiment for girls.

Figure-3 represents bar diagram for pre and post-test scores in self-concept of Traditional Physical Education and Movement Education groups of girls.

The comparison of pre and post-tests means scores in self-concept for the two groups of school girls is presented in Table-6:
Fig. 3: Bar Diagrams for Pre and Post-test Scores in Self-concept of Traditional Physical Education and Movement Education Groups of Girls.
TABLE 6

COMPARISON BETWEEN PRE AND POST-TESTS SCORES IN
SELF-CONCEPT OF TRADITIONAL PHYSICAL
EDUCATION GROUP AND MOVEMENT EDUCATION
GROUP OF SCHOOL GIRLS

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean Scores Compared</th>
<th>Difference Between Mean</th>
<th>'t'</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>DM</td>
</tr>
<tr>
<td>TPE</td>
<td>14.72</td>
<td>16.76</td>
<td>2.04</td>
</tr>
<tr>
<td>ME</td>
<td>13.76</td>
<td>15.86</td>
<td>2.1</td>
</tr>
</tbody>
</table>

\[ t_{(98)} = 1.98 \]
\[ 0.05 \]

Results indicate that the obtained significance difference of Traditional Physical Education and Movement Education groups for girls are far below the value which is required to be statistically significant i.e. \( t_{0.05(98)} =1.98 \) obtained significant difference between pre and post-test of Traditional Physical Education group is 0.57 and Movement Education group is 0.62.

The Traditional Physical Education and Movement Education groups has not made any significant improvement regarding self-concept of girls.
Figure-4 presents the bar diagram for Traditional Physical Education and Movement Education groups in self-concept of pre and post-tests scores of girls.

Discussion of Findings

Findings of the study pertaining to the comparison of Traditional Physical Education and Movement Education groups on pre and post-test for self-concept of boys and girls revealed that there was no real difference between the Traditional Physical Education and Movement Education groups with regard to self-concept of boys and girls either before or after the experiment. Thus the results of the study indicate no significant improvement in self-concept of boys and girls on the basis of their participation in Traditional Physical Education and Movement Education.

The self-concept is a highly complex component of behaviour, consisting of both cognitive and affective dimensions and has at least four orientations. The real self, the perceived self, the ideal self and the self as perceived by others. The flexibility of
Fig. 4: Bar Diagrams for Traditional Physical Education and Movement Education Groups in Self-concept of Pre and Post-test Scores of Girls.
these orientations of the self-offers many possibilities with regards to exploring situational specific behaviour within the frame-work of physical activity.

Probably the existing programme as well as developed movement education programme did not influence sufficiently the cognitive and affective dimensions of self-concept to bring about significant change in the self-concept of boys and girls of the age group of 11 to 13 years.

The result of a study conducted by Jacob\textsuperscript{2} partially indicated the similar trend. Jacob found the Spearman $\rho$ indicated no significant relationship between the self-awareness variables and cardio-respiratory fitness test results. Significant negative $\rho$ between self and ideal self-concept discrepancy and wt. loss, anthropometric and % body fat scores was obtained for the experimental group at the beginning of the investigation but not at the end. A significant negative $\rho$ was found between movement concept an anthropometric measures at the initiation

\textsuperscript{2} Jacob, \textit{Completed Research in Health, Physical Education and Recreation}: 179.
and termination of the investigation.

The time factor could have been another reason for not bringing improvement in the self-concept of boys and girls. The allotted duration of a period in the regular time table is 35 minutes which seems inadequate, moreover some time out of this is wasted in organisation of the class. Mauser and Reynolds cited similar reasons in their study. They pointed out that improvement of self-concept is a time consuming process. It would require not only excellent skill, leadership qualities and a thorough understanding of the foundations of movement education, but also continued application of the method to bring about desired changes in self-concept.

Further the experiment was conducted in controlled conditions as it was done during the regular programme of physical education in school. This may have attributed to some extent in not bringing significant differences

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between Traditional Physical Education and Movement Education group. The study conducted by Bruya\(^4\) is in consonance with the findings of the present study. Bruya investigated effects of selected movement skills on positive self-concept of IV grade boys and girls. He found no change in self-concept as measured by Piers-Harris Scale under the controlled conditions.

The findings of Wescott\(^5\) lent further support to the findings of the present investigation in concluding that a free atmosphere with ample opportunities for children to satisfy their intrinsic urge for physical activity through creative self-expression and movement exploration is essential for the development of a positive self.

Self-concept has physical, social, temperamental, educational and moral aspects. Positive self-concept is viewing oneself as a competent and worthy person based on these aspects and


\(^5\) Wescott, *Completed Research in Health, Physical Education and Recreation*: 186.
feeling good about that. Insignificant difference among Traditional Physical Education and Movement Education in self-concept of boys and girls may be due to lack of positive attitude towards physical awareness and appreciation of physical activity in school physical education curriculum. The study conducted by Dobson has similar results. He took this study to determine the status of physical education and interscholastic sports in the public schools of Oklahoma (Grades four to six) a sub-study involving little league programmes in the communities where the schools were located was conducted for analysis purpose. A stratified random sample of 50 schools was drawn, personal visitation by the researcher and follow-up questionnaire to obtain results. He found schools offering physical education programmes were superior to interscholastic sports programmes in the number of skills being offered. A phase of the study which sought to find out if schools emphasizing interscholastic sports were winning more contests as a significant level than schools emphasizing physical education,

6 Dobson, Dissertation Abstracts International: 6382-A.
revealed that they were not doing so. More students were found to be participating in physical education programmes than in interscholastic sports programmes.

The age group in the present study is in developmental stage, they have not yet attained maturity. Therefore fluctuation in interests occur often with them. Their attention is constantly deviated from one activity to another without giving adequate time to one particular area of interest. This might be a reason for not deriving benefits from movement education programme sufficiently to develop various aspects of self-concept to bring out significant difference in the present study.

Luebke conducted a study on class three children and randomly assigned to a teacher directed study programme of basic motor skill, a teacher guided study programme of exploration of selected movement elements and a control programme of no planned physical activity.

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Variables were measured by pre and post administration of CAHPER Fitness Programme Test, Piers-Harris childrens self-concept scale, and AAHPER Co-operative Physical Education Test. From 4-A modified ANCOVA, ANOVA and Pearson $r$ were employed to examine statistically. No differences were observed in main effects of the 3 variables across the 3 programmes. No programme produced significant changes in self-concept. Time in activity for the movement participants was significant greater than that of standard programme participants.

The findings of the study is in consonance with the findings of Allen (1990)\textsuperscript{8} Teagarin (1983)\textsuperscript{9} Nolan (1982)\textsuperscript{10} Sorenson (1979)\textsuperscript{11}

\textsuperscript{8} Allen, Dissertation Abstracts International: 50 (June 1990): 3886-A.

\textsuperscript{9} Teagarin, Dissertation Abstracts International 44 (December 1983): 1726-A.

\textsuperscript{10} Nolan, Completed Research in Health, Physical Education and Recreation 24 (1982): 55.

\textsuperscript{11} Sorenson, Completed Research in Health, Physical Education and Recreation 21 (1979): 310.
Tyler (1973)\textsuperscript{12} Albins (1973)\textsuperscript{13} Hirsch (1973)\textsuperscript{14} 

\textsuperscript{12} Tyler, *Dissertation Abstracts International* 33 (February 1973): 4163-A.

\textsuperscript{13} Albins, *Completed Research in Health, Physical Education and Recreation* 15 (1973):139.


\textsuperscript{16} Floyed, *Dissertation Abstracts International* 33 (June 1973): 6712-A.

\textsuperscript{17} Mahone, *Dissertation Abstracts International* 32 (March 1972): 5022-A.

\textsuperscript{18} Gussis, *Dissertation Abstracts International* 32 (October 1971): 1902-A.


\textsuperscript{20} Parker, *Completed Research in Health, Physical Education and Recreation* 4 (1962): 84.


In conclusion, it could be said that the objective of physical education curriculum are not achieved effectively in schools. Proper implementation should provide all-round development and psychological well being of children to make them wholesome, well adjusted individuals. Generally, physical education programme in schools is carried out to merely fulfil the requirement of physical education curriculum or/and to make it competition oriented.