CHAPTER III

METHODOLOGY

3.1 INTRODUCTION
3.2 VARIABLES IN THE STUDY
3.3 DESIGN OF THE STUDY
3.4 TOOLS AND MATERIALS USED FOR THE STUDY
3.5 PROCEDURE OF THE INTERVENTION
3.6 STATISTICAL TECHNIQUES USED
3.1 INTRODUCTION

Methodology is lexically defined as the system of principles, procedures and practices applied to a particular branch of knowledge. It is also defined as a set of methods used in a particular area of activity. The concept of methodology has an umbilical tie with any scientific inquiry. A research remains hollow and is dubbed as unscientific if it has not made use of a definite methodology.

This chapter is meant for a detailed description and explanation for the use of certain methods adopted for this investigation.

The present study was mainly designed to find out the effectiveness of an instructional package in yoga for improving the Emotional Intelligence and Academic Achievement of secondary school students. This chapter deals with the description of variables, design, tools and procedure of data collection. The details in respect of each of them are given in different captions.

3.2 VARIABLES IN THE STUDY

In the present study, yoga practice is the independent variable. The Emotional Intelligence and Academic Achievement of the secondary school students are the dependent variables of the study.

3.3 DESIGN OF THE STUDY

The present study was Experimental in nature and was intended to develop an instructional package in yoga for improving the Academic Achievement and Emotional Intelligence of secondary school students. The investigator aimed to study the effect of one year of regular practice of yoga. Since the subjects are students who cannot be under the investigator’s constant control and observation throughout the
period of study, a quasi experimental design could do well in such situations. Therefore the investigator adopted a **Quasi experimental design, the Pre-test Post-test Non equivalent group design** for the present study which is an effective method that can used in class room experiments with **Control** and **Experimental groups**. This method is the most appropriate one since the subjects are students who cannot be under the investigator’s control and observation throughout the period of study.

**SAMPLE**

The sample was a representative group of 80 students of Standard IX at secondary school level from St. Thomas High School Thiruvalla, Pathanamthitta District in Kerala. Two groups of 40 students each were taken. One of the groups was designed as Control Group and the other as Experimental Group.

**Table 3.1**

**Group and gender wise classification of the sample**

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Group</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Control Group</td>
<td>26</td>
<td>14</td>
<td>40</td>
</tr>
<tr>
<td>2.</td>
<td>Experimental Group</td>
<td>26</td>
<td>14</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>52</td>
<td>28</td>
<td>80</td>
</tr>
</tbody>
</table>
3.4 TOOLS AND MATERIALS USED FOR THE STUDY

The success of a research study depends mostly on the nature of the tools and techniques used. Sukhia and Mehrotra (1966) have pointed out that factual material or data unknown or untapped so far, which is essential for every study can be obtained from many sources. It is necessary to adopt or evolve a systematic procedure to collect essential data, adequate in quality and quantity. The instrument used to gather new facts are known as tools. According to Best and Kahn (2005), the use of a particular tool depends upon the type of the problem and each research tool is appropriate in a given situation to accomplish a particular purpose. A researcher can select existing research tool if it is suitable for his study. In case such tools are not available, it may be advisable to prepare necessary tools which are appropriate for the study.

The tools used for the present study are the following:

1. Emotional Intelligence Inventory (Santhosh and Geetha, 2010)
2. Evaluation Schedule for Instructional Package in Yoga (Santhosh and Geetha, 2010).

The material used for the study is the following:

1. Instructional Package in Yoga: Yoga for improving Emotional Intelligence and Academic Achievement of Secondary school students – YEIAA Package (Santhosh and Geetha, 2010)
1. Emotional Intelligence Inventory

The tool used in the present study is the adapted and modified version of the KAB Model of Emotional Intelligence Inventory prepared by Emily A. Sterret (2003) (Appendix -I).

KAB Model of Emotional Intelligence

Various Dimensions were considered for constructing the Emotional Intelligence Inventory (EII).

The Emotional Intelligence Inventory (EII) was constructed to provide a measure of overall Emotional Intelligence in terms of its two major dimensions such as;

1. Self
2. Social

The high EQ person must have knowledge and a positive attitude, and behave skilfully in the self and social dimensions. Emotional Intelligence have been broken down into six areas, they are;

I. Self Dimension

1. Self- awareness
2. Self confidence
3. Self control

II. Social Dimension

4. Empathy
5. Motivation
6. Social Competency
Self Dimensions of Emotional Intelligence

Our emotional intelligence comes, in part, from our understanding and acceptance of ourselves in three areas such as: Knowledge, Attitude and Behaviour.

1. KNOWLEDGE- Self- awareness

Accurately knowing our own feelings, preferences, goals, and values; sensing how others feel about us, and using that information to guide our behaviour.

2. ATTITUDE - Self confidence

A “can-do” attitude, a belief in ourselves; overcoming self doubt and taking reasonable risk; being assertive and not aggressive; being goal directed; admitting mistakes and moving on.

3. BEHAVIOUR - Self control

Dealing well with stress; controlling emotional moods or outbursts without over control; being adaptable; balancing rational and emotional considerations.

Social Dimensions of Emotional Intelligence

The other three facets of Emotional Intelligence have to do with the experience and interactions with others- our social relationships.

4. KNOWLEDGE -Empathy

Easily reading and understanding others; having empathy; listening well; reading non-verbal cues.

5. ATTITUDE - Motivation

Taking initiative: having a positive outlook; being creative; inspiring others; doing things we believe in and are committed to.
6. BEHAVIOUR - Social Competency

Finding common ground to establish rapport and minimize conflict; persuading and influencing others; being likable and having positive relationships; having integrity.

There are five statements in the inventory to measure each component in two dimensions of Emotional Intelligence such as Self and Social. Thus there are 30 statements in the inventory in total.

3.4.1 Emotional Intelligence Inventory (EII)

The investigator used an adapted version of the KAB Model (Knowledge Attitude Behaviour Model) of Emotional Intelligence Inventory prepared by Sterrett (2003). The items in the inventory were redrafted so as to suit the culture of the sample population. Moreover, the items were made simple and comprehensible to the target population. The prepared inventory was submitted to experts for their scrutiny and modification. The suggestions of the experts were incorporated by modifying the items according to their suggestions (List of experts is given in Appendix- II). Thus an Emotional Intelligence Inventory consisting of 30 items were prepared by the investigator.

Standardisation of the Emotional Intelligence Inventory

The adapted version of the Emotional intelligence Inventory of Emily A. Sterret was modified according to the socio-cultural difference prevailing in Kerala as the original Emotional Intelligence Inventory by Sterret was constructed according to the socio-cultural background prevailing in western countries. As the adapted version was prepared with adequate modification, it became necessary to find out the acceptability of the items in the inventory. Hence, an item analysis was done in order
to find out the most relevant aspects to be included in the inventory. For this purpose, the draft inventory was administered on a sample of 400 secondary school students. The draft form of the inventory consisted of 48 statements which were further reduced to 30 items after the item analysis. The reliability and validity of the inventory was also calculated.

**Item Analysis**

Item analysis, according to Ferguson (1976), is “one of the many processes by which one can find which items differentiate and which items do not differentiate between contrasting criterion groups”. In the present study, item analysis was done to select suitable items for the final inventory in the following manner:

The inventory was administered on a sample of 400 secondary school students. Out of 400 response sheets obtained, only 370 response sheets were selected for item analysis. Some of the exempted sheets were incomplete and some of them were randomly rejected to bring down the number to 370 for convenience. Based on the nature of the items and their response alternatives, the investigator decided to apply calculation of t-value. For the purpose of item analysis, the response sheets of 360 students were scored and were arranged in a descending order of the total score. The total score obtained for each individual was calculated and the response sheets were arranged in the order of magnitude of the total scores. Then the highest 27 percent and the lowest 27 percent were taken out for analysis since “27 percent provides the best compromise between two desirable and inconsistent aims –
(i) to make extreme groups as large as possible and (ii) to make extreme groups as different as possible” (Ebel, 1965).

The 370 response sheets distributed to students were arranged in the descending order of the total scores. The top 27 percent in the group (the top 100) when arranged in the descending order of the total scores and the bottom 27 percent (the bottom 100) response sheets alone were used as extreme groups for item analysis. The scores obtained for each item in these extreme groups were used for calculating the discriminating power of each item. The discriminating power was obtained by calculating the critical ratio ‘t’ using the formula

\[
t = \frac{X_H - X_L}{\sqrt{\frac{\sum (X_H - \bar{X}_H)^2 + \sum (X_L - \bar{X}_L)^2}{n(n-1)}}}
\]

(Edwards, 1957, p.153)

where

- \( \bar{X}_H \) = the mean score on a given statement for the high group
- \( \bar{X}_L \) = the mean score on the statement for the low group
- \( X_H \) = the score for a given individual for a given statement in the high group
- \( X_L \) = the score for a given individual for a given statement in the low group
- \( n \) = number of subjects in the criterion group

For the preparation of the final inventory, items with ‘t’ value equal to or greater than 1.75 were selected as the value of ‘t’ is a measure of the extent to which a given statement differentiates between the high and low groups. “As a crude and
approximate rule of thumb, we may regard any ‘t’ value equal to or greater than 1.75 as indicating that the average response of the high and low groups to a statement differs significantly, provided we have 25 or more subjects in the high group and also in the low group” (Edwards, 1957). Thus, a final form of the inventory consisting of 30 items was prepared for final administration. The ‘t’ values of the items in the draft inventory are given in Table 3.2.

Table 3.2

<table>
<thead>
<tr>
<th>Statement No.</th>
<th>t-value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.58</td>
<td>Rejected</td>
</tr>
<tr>
<td>2</td>
<td>0.16</td>
<td>Rejected</td>
</tr>
<tr>
<td>3</td>
<td>4.63</td>
<td>Accepted</td>
</tr>
<tr>
<td>4</td>
<td>2.46</td>
<td>Accepted</td>
</tr>
<tr>
<td>5</td>
<td>1.96</td>
<td>Accepted</td>
</tr>
<tr>
<td>6</td>
<td>0.26</td>
<td>Rejected</td>
</tr>
<tr>
<td>7</td>
<td>0.167</td>
<td>Rejected</td>
</tr>
<tr>
<td>8</td>
<td>0.95</td>
<td>Rejected</td>
</tr>
<tr>
<td>9</td>
<td>3.59</td>
<td>Accepted</td>
</tr>
<tr>
<td>10</td>
<td>3.09</td>
<td>Accepted</td>
</tr>
<tr>
<td>11</td>
<td>2.02</td>
<td>Accepted</td>
</tr>
<tr>
<td>12</td>
<td>1.97</td>
<td>Accepted</td>
</tr>
<tr>
<td>13</td>
<td>2.43</td>
<td>Accepted</td>
</tr>
<tr>
<td>14</td>
<td>0.11</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>15</td>
<td>0.89</td>
<td>Rejected</td>
</tr>
<tr>
<td>16</td>
<td>0.32</td>
<td>Rejected</td>
</tr>
<tr>
<td>17</td>
<td>0.73</td>
<td>Rejected</td>
</tr>
<tr>
<td>18</td>
<td>3.35</td>
<td>Accepted</td>
</tr>
<tr>
<td>19</td>
<td>1.98</td>
<td>Accepted</td>
</tr>
<tr>
<td>20</td>
<td>6.15</td>
<td>Accepted</td>
</tr>
<tr>
<td>21</td>
<td>1.99</td>
<td>Accepted</td>
</tr>
<tr>
<td>22</td>
<td>1.98</td>
<td>Accepted</td>
</tr>
<tr>
<td>23</td>
<td>1.3</td>
<td>Rejected</td>
</tr>
<tr>
<td>24</td>
<td>0.75</td>
<td>Rejected</td>
</tr>
<tr>
<td>25</td>
<td>1.13</td>
<td>Rejected</td>
</tr>
<tr>
<td>26</td>
<td>0.83</td>
<td>Rejected</td>
</tr>
<tr>
<td>27</td>
<td>3.62</td>
<td>Accepted</td>
</tr>
<tr>
<td>28</td>
<td>1.97</td>
<td>Accepted</td>
</tr>
<tr>
<td>29</td>
<td>1.97</td>
<td>Accepted</td>
</tr>
<tr>
<td>30</td>
<td>4.01</td>
<td>Accepted</td>
</tr>
<tr>
<td>31</td>
<td>2.85</td>
<td>Accepted</td>
</tr>
<tr>
<td>32</td>
<td>3.25</td>
<td>Accepted</td>
</tr>
<tr>
<td>33</td>
<td>0.34</td>
<td>Rejected</td>
</tr>
<tr>
<td>34</td>
<td>2.31</td>
<td>Accepted</td>
</tr>
<tr>
<td>35</td>
<td>1.35</td>
<td>Rejected</td>
</tr>
<tr>
<td>36</td>
<td>0.63</td>
<td>Rejected</td>
</tr>
<tr>
<td>37</td>
<td>1.98</td>
<td>Accepted</td>
</tr>
<tr>
<td>38</td>
<td>2.51</td>
<td>Accepted</td>
</tr>
</tbody>
</table>
Validity of the Inventory

Validity implies truthfulness. Evidence regarding the validity of an inventory lies mainly in the procedure adopted for developing the inventory. The items in the inventory were modified according to the cultural setting of the targeted population. The language used in the inventory was made simple and precise to the maximum extent possible, so that it is comprehensible to all the respondents, thereby adding to the validity of the tool. The face validity of the inventory was ascertained by showing the prepared inventory to experts for their assessment. Necessary modifications were done as per their suggestions.

Reliability

The reliability of a measure is commonly defined as “the degree to which it measures consistently or accurately whatever it does measure” (Travers, 1959). In

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>2.29</td>
<td>Accepted</td>
</tr>
<tr>
<td>40</td>
<td>2.28</td>
<td>Accepted</td>
</tr>
<tr>
<td>41</td>
<td>1.58</td>
<td>Rejected</td>
</tr>
<tr>
<td>42</td>
<td>0.49</td>
<td>Accepted</td>
</tr>
<tr>
<td>43</td>
<td>2.64</td>
<td>Accepted</td>
</tr>
<tr>
<td>44</td>
<td>5.38</td>
<td>Accepted</td>
</tr>
<tr>
<td>45</td>
<td>2.34</td>
<td>Accepted</td>
</tr>
<tr>
<td>46</td>
<td>0.87</td>
<td>Rejected</td>
</tr>
<tr>
<td>47</td>
<td>2.83</td>
<td>Accepted</td>
</tr>
<tr>
<td>48</td>
<td>3.49</td>
<td>Accepted</td>
</tr>
</tbody>
</table>
this study, the reliability coefficient of the inventory was calculated using test-retest method. The emotional intelligence inventory was administered to 75 students at the secondary level. Then a retest was conducted after an interval of four weeks after conducting the first test. The two sets of scores (in the two administrations) were used for calculating the coefficient of correlation ‘r’. The reliability coefficient of the inventory was found to be 0.74. This shows that the emotional intelligence inventory is a reasonably reliable tool for measuring the Emotional Intelligence of secondary level students.

**Scoring of Emotional Intelligence Inventory (EII)**

The Emotional Intelligence Inventory (EII) is a five point scale in which the respondents are asked to give their responses for 30 items. They are requested to select the appropriate answer for each statement from the given choices, Strongly Agree, Agree, Undecided, Disagree, Strongly disagree.

The respondents scored the inventory as given in the Table 3.3.

**Table 3.3**

<table>
<thead>
<tr>
<th>Response</th>
<th>Score Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>5</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
</tr>
<tr>
<td>Undecided</td>
<td>3</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>1</td>
</tr>
</tbody>
</table>
The score of each respondent is calculated by adding the score values of responses given against the statements in the scale. The highest possible total score of a student is 150 (30×5) and the minimum total score is 30 (30×1). The EII consists of six components such as Self Awareness, Self Confidence, Self Control, Empathy, Motivation and Social Competency. There are five statements corresponding to each component. Thus the highest possible score of a student in each component of emotional intelligence is 25 (5×5) and minimum score is 5 (5×1).

MATERIAL USED IN THE STUDY

3.4.2 Instructional Package in Yoga (YEIAA)

In the present study, the investigator has prepared an Instructional Package in Yoga for teaching yoga at the secondary school students. The Instructional Package in Yoga used in the present study is based on Ashtanga Yoga of Maharshi Pathanjali. The package is christened as YOGA FOR IMPROVING EMOTIONAL INTELLIGENCE AND ACADEMIC ACHIEVEMENT (YEIAA). The package was prepared in consultation with well known yoga experts (The Evaluation Scheduled for experts and list of the experts are given as Appendix IV and Appendix V).

Experts’ Evaluation of the Instructional Package in Yoga

In this section, an attempt is made to assess the suitability of the Instructional Package in Yoga named as “Yoga for improving Emotional Intelligence and Academic Achievement” (YEIAA), for improving the Emotional Intelligence and Academic Achievement of Secondary school students in Kerala. An Evaluation Schedule prepared for this purpose was subjected to expert opinion (N=10) and the details of the analysis done in this context are presented in Table 3.4.
Table 3.4
Suitability of the Instructional Package in Yoga for improving the Emotional Intelligence and Academic Achievement of Secondary school students in Kerala

<table>
<thead>
<tr>
<th>Aspects of evaluation</th>
<th>Responses of expert</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. YEIAA package is suitable in relation to the secondary students’ developmental stage.</td>
<td>GE 8 (80%) SE 2 (20%) NA 0</td>
</tr>
<tr>
<td>2. YEIAA package is practicable for the secondary students.</td>
<td>GE 7 (70%) SE 3 (30%) NA 0</td>
</tr>
<tr>
<td>3. YEIAA package is suitable to the academic standard achieved normally by the target group.</td>
<td>GE 8 (80%) SE 2 (20%) NA 0</td>
</tr>
<tr>
<td>4. The duration of the package is adequate for attaining significant desired changes in participants.</td>
<td>GE 6 (60%) SE 4 (40%) NA 0</td>
</tr>
<tr>
<td>5. There is suitability in timing of package transaction.</td>
<td>GE 7 (70%) SE 3 (30%) NA 0</td>
</tr>
<tr>
<td>6. Practice of simple asanas and breathing in the midst of class room teaching is advisable for refreshing or preventing fatigue.</td>
<td>GE 9 (90%) SE 1 (10%) NA 0</td>
</tr>
<tr>
<td>7. The package has the potential for sustaining the interest of the participants.</td>
<td>GE 7 (70%) SE (3) (30%) NA 0</td>
</tr>
<tr>
<td>8. The suggested transactional strategies / techniques for the modules are appropriate.</td>
<td>GE 7 (70%) SE 3 (30%) NA 0</td>
</tr>
<tr>
<td>9. The sequence of the items such as asanas, pranayama and mudras is in right order.</td>
<td>GE 9 (90%) SE 3 (30%) NA 0</td>
</tr>
<tr>
<td>10. Contents of the package are adequate.</td>
<td>GE 7 (70%) SE 3 (30%) NA 0</td>
</tr>
<tr>
<td>11. Each yoga item has adequate time for transaction.</td>
<td>GE 8 (70%) SE 2 (30%) NA 0</td>
</tr>
<tr>
<td>12. The package is potential enough to cater to its objectives.</td>
<td>GE 8 (80%) SE 2 (20%) NA 0</td>
</tr>
<tr>
<td>13. Package is well illustrated with pictures and description.</td>
<td>GE 7 (70%) SE 3 (30%) NA 0</td>
</tr>
<tr>
<td>14. The resource materials included in the package are sufficient.</td>
<td>GE 7 (70%) SE 3 (30%) NA 0</td>
</tr>
<tr>
<td>15. The package has relevance in the present scenario of paradigm shift in education.</td>
<td>GE 8 (80%) SE 2 (20%) NA 0</td>
</tr>
</tbody>
</table>

GE-To a great extent; SE- to some extent NA- Not at all
Chapter III

Methodology

Discussion of results of the expert evaluation

The Yoga experts under study have expressed their satisfaction regarding the suitability of the Instructional Package in Yoga (YEIAA) for improving the Emotional Intelligence and Academic Achievement of Secondary school students in Kerala. (Vide Table 3.4). With respect to the suitability in relation to the secondary students’ developmental stage, majority of the experts under study have rated its suitability as ‘to a great extent’ (80%) and 20 % of the experts rated it as suitable ‘to some extent’. In the case of practicability of the package for the Secondary students, 70 % of the experts under study have rated its suitability as ‘to a great extent’ while 30 % rated it as ‘to some extent’. With respect to the suitability of the package to the academic standard achieved normally by the target group, 80% of the experts have rated its suitability as ‘to a great extent’ while 20 % rated it as ‘to some extent’. Regarding the duration of the package, 60% have rated its suitability as ‘to a great extent’ while 40 % rated it as ‘to some extent’. With respect to the timing of package transaction, 70 % of the experts under study have rated its suitability as ‘to a great extent’ while 30 % rated it as ‘to some extent’. Regarding the practice of simple asanas and breathing in the midst of class room teaching for refreshing or preventing fatigue, 90% of the experts have rated its suitability as ‘to a great extent’ while 10 % rated it as ‘to some extent’. 70 % of the expert rated it as suitable ‘to a great extent’ with respect to the potential for sustaining the interest of the participants. Similarly with respect to the appropriateness of suggested transactional strategies / techniques of the modules, 70 % of the experts under study have rated its suitability as ‘to a great extent’ while 30 % rated it as ‘to some extent’. The table also shows that 90% of the
experts are satisfied ‘to a great extent’ in the sequence of the items in the package. 70% are satisfied ‘to a great extent’ in the content of the package. Regarding the adequacy of the time of transaction of the package, 70% of the experts are satisfied ‘to a great extent’. 80% of the experts under study have rated its suitability as ‘to a great extent’ with respect to the potential of the package to attain the objectives. 70% of the experts are satisfied in the package ‘to a great extent’ while 30% ‘to some extent’. Regarding the resource materials included in the package, 70% of the experts under study have rated its suitability as ‘to a great extent’ while 30% rated it as ‘to some extent’. Regarding the relevance of the package in the present scenario of paradigm shift in education, 80% of the experts have rated its suitability as ‘to a great extent’ while 20% rated it as ‘to some extent’.

The package was mainly meant for the secondary school students. So, the asanas and pranayama adopted for the package were in consonance with their age and developmental stage. The package comprises five modules which deal with yama, niyama, asana, pranayama and meditation. **Module 1** includes Yama and Niyama which imparts moral and value education. **Modules** from **II** to **V** are meant for training Asanas and Pranayama. The duration of transaction of each module except the first one was 5 hours and the total time required for administering the package was 23 hours in 23 days. The first module is designed only for 3 days. This package was designed as four phases and each phase is designed for one week to teach. After completing the first four phases, one month regular follow up immediately after teaching and after that weekly follow up was conducted in the full academic year for the same experimental group to ensure the regular yoga practice among them. The
students in the experimental group are requested to practice the yoga at home regularly and the weekly follow up helped to ensure their regular practice.

3.5 PROCEDURE OF THE INTERVENTION

The study was carried out in different stages such as

1. The investigator secured permission from the authorities of St. Thomas Higher Secondary School, Thiruvalla, Kerala to administer the proposed interventional package for the present research study;

2. Assessed the Emotional Intelligence and Academic Achievement before giving the Instructional Package;

3. Administered the Instructional Package in Yoga for the Experimental group for a particular period of one academic year;

4. Assessed the Emotional Intelligence and Academic Achievement of both the groups after the experiment;

5. The data thus collected was statistically analyzed to find out the effectiveness of the package.

Implementation of the Package

The process of administering the package started at the beginning of the academic year, 2011-12 in Standard IX after having measured their present Emotional Intelligence and Academic Achievement in the previous annual examination in Standard VIII. The schedule for the day to day implementation of the package was formed on the basis of the modules.
In Day 1, the package was introduced to the Experimental group. Yama and Niyama were presented on Day 2 and Day 3. From Day 4 onwards, the training of yogasanas and pranayamas continues as per the schedules. The time selected for yoga class was from 8 a.m. to 9 a.m. before the breakfast. The very spacious school auditorium was the venue of the class and each participant was given a mat. As the researcher is an experienced yoga trainer, he himself took the responsibility to conduct the training and follow-up programme in person for the full experiment period of one academic year.

In the mean time, parents and teachers of the students in the sample were given awareness class on yoga. Moreover, the teachers concerned were provided training on certain asanas which could be implemented in the class room while teaching, with a view to refresh students by removing their boredom, torpor and tiredness.

Each day started with a silent prayer. Training was imparted through the presentation of slides using PowerPoint (CD of PowerPoint presentation of various yogasanas is given as Appendix VI). The instructor demonstrated and explained each step of asanas and pranayama. It was ensured that the participants in the Experimental group regularly practised the asanas they were taught by contacting their parents. The style of training was modified while being implemented on the basis of the feedback collected from the participants and their parents. Having administered the package for 23 consecutive days (23 hours), immediate follow up was carried out for one week. After that, follow up programme continued once a week for the remaining period of the academic year. Monitoring of the package implementation was also effectively
done by the investigator. Individual attention was given to each participant in the Experimental group by rectifying their mistakes in postures during the time of follow up. (DVD of the follow up programme is Appendix VII.)

Complete set of modules and schedules of the package was appended in the end of this chapter (Appendix III).

**Procedure**

In the beginning of the academic year, before starting the experiment, the Emotional Intelligence Inventory prepared by the investigator was administered for both Control group and Experimental group as Pre-test. In addition to the existing method of class room teaching, the Experimental group was given training in yoga as per the Instructional Package prepared by the investigator. The investigator ensured that the Experimental group of students practised Yoga regularly throughout the academic year. After the completion of the academic year, both the groups were administered the post-test to measure Emotional Intelligence. The same test which was administered as pre-test was given as post test.

To compare the Academic Achievement of these two groups, the annual examination marks from the school records were taken as pre-test and Post-test results. The annual examination marks in the Standard VIII was taken as the Pre-test score and the annual examination marks of Standard IX was taken as the Post-test score. Since the period of experiment is one full academic year, the experimental result may be influenced by the age factor. Therefore the result is compared with that of the Control group based on pre-test and post-test results. They are also in the same age group and class.
To compare the effectiveness the instructional package in yoga in the academic achievement on different subjects, the subjects were divided into four groups as 1. Language (English, Hindi and Malayalam) 2. Social Science 3. Science (Physics, Chemistry and Biology) and 4. Mathematics.

The difference between the means of the Pre-test and Post-test scores of each group was tested for statistical significance. Since it is a Non-equivalent group design, statistical significance of the difference between means was tested using Analysis of Covariance (ANOVA).

### 3.6 STATISTICAL TECHNIQUES USED

For the purpose of statistical analysis the following statistical methods were applied in the present study.

1. Arithmetic mean
2. Standard deviation,
3. t-test
4. ANOVA
5. ANCOVA
6. Scheffé test of Post hoc comparison