RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with the methodology employed in order to achieve different objectives and test the hypotheses formulated in the study. It deals with the methodology adopted to collect data about factors that affect the achievement motivation level of adolescents in different schools in Chennai and Thiruvallur districts.

Details regarding nature and selection of sample, brief description of tools of the investigation, scoring and administration of test and methods of analysis of data are described. This chapter gives an insight of the complete design of the study.

3.2 Statement of the Problem

The problem selected for the present investigation is stated as follows: “Achievement motivation of adolescent learners in relation to Self-acceptance, Study skills and Intellectual performance responsibility”.

3.3 Operational definitions of the terms

The variables of the study are to be clearly and unambiguously defined in operational terms. Hence the major variables are defined operationally as follows:

3.3.1 Achievement Motivation

Achievement motivation is defined as “the motivation to accomplish valued goals and to avoid failure”. Everyone has a desire to achieve but it varies from person to person. The primary interest in this study of achievement motivation is to identify and to understand the effects of the entire important concomitant influences which determine the direction of action, its vigour, and its determination among adolescent learners.

3.3.2 Self-Acceptance
Self-acceptance refers to the recognition of our abilities and achievements, together with acknowledgement and acceptance of our limitations.

3.3.3 Study Skills

Study skills are the plan of study, the habit of concentration, notes taking, and mental review, the obstacles for effective study and so on.

3.3.4 Intellectual Performance Responsibility

Intellectual performance responsibility may be defined as “an intense and persevering involvement which is manifested by the active pursuing and preference for intellectual activities”. Thus it refers to active involvement of the students with intellectual activities for the satisfaction of their achievement need and when they consider participation in intellectual activities important for their strength.

3.3.5 Adolescent Learners

Adolescent learners in this study refer to the students belonging to the age group 14 to 16 years studying in 9th, 10th and 11th standard of some selected government, government-aided and matriculation higher secondary schools.

3.4 Variables selected for the study

The following variables were selected for the present study.

3.4.1 Dependent Variable

1. Achievement motivation

3.4.2 Independent Variables

1. Self-acceptance
2. Study skills
3. Intellectual performance responsibility

3.4.3 Associated variables
1. Age
2. Gender
3. Type of school management
4. Parents’ educational status
5. Parents’ occupational status
6. Parents’ monthly income
7. Number of children in the family
8. Type of family
9. Locality

3.5 Objectives of the study

The following objectives have been formulated for the present study.

1. To find the level of achievement motivation, self-acceptance, study skills and intellectual performance responsibility of adolescent learners.
2. To study the difference between achievement motivation, self-acceptance, study skills and intellectual performance responsibility scores with respect to the associated variables (demographic) variables such as age, gender, type of school management, parent's educational status, parent’s occupational status, monthly income of the family, number of children in the family, type of family, locality.
3. To study the relationship between self-acceptance and achievement motivation.
4. To study the relationship between study skills and achievement motivation.
5. To study the relationship between intellectual performance responsibility and achievement motivation.
6. To study the prediction potential of each of the three independent variables.
7. To study the collective prediction potential of all the three independent variables put together.

8. To study the association between achievement motivation self-acceptance, study skills and intellectual performance responsibility scores and the associated (demographic) variables such as age, gender, type of school management, parent’s educational status, parent’s occupational status, monthly income of the family, number of children in the family, type of family, locality.

To meet the above objectives, the following major hypotheses were formulated to enable the research to collect and analyse the data.

3.6 Hypotheses of the study

In the pursuance of the objectives of the study stated above, null hypotheses were formulated as follows.

1. There is no significant difference between achievement motivation, self-acceptance, study skills and intellectual performance responsibility scores with respect to the associated variables such as age, gender, type of school management, parent’s educational status, parent’s occupational status, monthly income of the family, number of children in the family, type of family, locality

2. There is no significant relationship between self-acceptance and achievement motivation.

3. There is no significant relationship between study skills and achievement motivation.

4. There is no significant relationship between intellectual performance responsibility and achievement motivation.

5. There is no significant association between achievement motivation, self-acceptance, study skills and intellectual performance responsibility scores with respect to the associated variables such as age, gender, type of school management, parent’s educational status, parent’s occupational status.
status, monthly income of the family, number of children in the family, type of family, locality.

3.7 Method of study

Normative survey method was used to collect data. The present study aims to find out the relationship between achievement motivation, study skills, self-acceptance and intellectual performance responsibility of adolescent learners. Hence normative survey method was selected for this study.

3.8 Tools used in this study

To test the hypotheses framed for the present study, four data gathering instruments have been used to collect data. Each item of the tools were examined and discussed thoroughly with experts and finally selected on the basis of its relevance and suitability for the study. The applicability of the tool selected for the sample is tested by means of a pilot study.

3.8.1 Achievement Motivation Inventory

Achievement motivation inventory developed and standardised by P. Mehta in 1969 was used to study the achievement motivation of adolescent learners. It was used to elicit information regarding the adolescent learners’ level of achievement oriented behaviour.

3.8.1.1 Rationale and Description of the Tool

The Achievement motivation inventory consists of 22 statements which are descriptive statements of situations depicted in pictures which were tried out for the development of a thematic apperception measure followed by six responses. These responses are also based on the stories written to TAT type pictures. Respondents have to check two responses to each item. The achievement related motivation items have been mixed with task related motivation and unrelated motivation statements that served as buffer items.
Mehta’s tool has been widely used in India for measuring achievement motivation. Bhargava (1972) showed Mehta’s cards to be better measure of achievement than Mukherjee’s sentence completion test. Susan Jacob (2002) used this tool to find out the mother-child perceptual correlates on child’s achievement motivation and emotional stability. Mallick (2005) used this to find the achievement motivation of orthopaedic and visually impaired children in New Delhi. Further the dimensions of this tool or the statements of this tool depict the characteristics of achievement motivation. That is why this tool was selected by the researcher for the use of the present study. A copy of achievement motivation inventory is appended (Appendix-I).

3.8.1.2 Administration of the tool

The Achievement motivation inventory was administered after highlighting the purpose of the inventory and also providing clear cut directions as to have the Achievement motivation inventory should be responded.

The following instructions were given to the students at the outset. “There are 22 statements with six options describes your achievement motivation. To do this put a tick (✓) mark again at the option of your choice”. Students were encouraged to respond all 22 statements without leaving out any question. A time limit of 30 minutes was set for the completion of this survey.

3.8.1.3 Scoring procedure

Scoring was done as per the guidelines given in the scoring key of the test manual. The achievement motivation inventory consisted of 22 items. Each item is followed by six responses of which two are task related (TR), two are Achievement related (AR) and the rest are unrelated to achievement (UR). The number of the alternative for each item under TR, AR, and UR is given in the scoring key. For example, under item one, there are six alternatives out of which 2 and 5 are achievement related (AR), 1 and 4 are task related (TR) and 3 and 6 are unrelated responses. The subjects responses to each item can be achievement related, task
related or unrelated. For the purpose of this study, only the achievement related scores were taken which would then yield a maximum score of 44.

3.8.1.4 Reliability and Validity of the tool

The reliability of the achievement motivation inventory was found using Kuder Richardson-20 and the coefficient of correlation is found to be 0.67 indicating that the inventory is reliable.

Theoretical validation of the achievement motivation inventory had already been established by the author. However in the present study the validity measures are computed in terms of index of reliability. The obtained validity measure 0.81 suggests that the tool used in this study is highly valid.

3.8.2 Self-Acceptance Inventory

The self-acceptance inventory constructed and standardised by S.B. Kakkar (1984) was used in this study to assess the ability to accept the self-disparaging statements of adolescent learners.

3.8.2.1 Rationale and Description of the Tool

The self-acceptance inventory consists of 34 statements. Out of which 16 are positive and 18 are negative. The original inventory with two options (yes, no) for each statement has been modified into statement with three options viz., (agree, neutral, disagree) by the investigator as per experts’ opinion. Kakkar deals with self-acceptance measuring the extent to which the individual can accept self-disparaging statements. The techniques used in these inventories seem to be either semantic differential type or simple checking of the statements & adjectives. It measures sense of personal worth and satisfaction with self. That is why this tool was selected by the researcher for the use of the present study. A copy of self-acceptance inventory is appended (Appendix-II). The nature of self-acceptance inventory has been presented below.
Table 3.2 showing the nature of self-acceptance inventory

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Item numbers</th>
<th>Nature of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3,6,9,11,13,15,16,19,22,23,24,25,28,30,33,34</td>
<td>Positive</td>
</tr>
<tr>
<td>2</td>
<td>1,2,4,5,7,8,10,12,14,17,18,20,21,26,27,29,31,32</td>
<td>Negative</td>
</tr>
</tbody>
</table>

3.8.2.2 Administration of the tool

Before administering the tool the following instruction and directions were given to the students to know how the test items should be responded. “The aim of the questionnaire is to know your feelings about yourself and your adjustment level with others. There are 34 statements with 3 options. You put a √ in any of the option”. A time limit of 30 minutes was set for the completion of this inventory.

3.9.2.3 Scoring procedure

As the questionnaire consists of both positive and negative items scoring was done by the following guidelines given in the table 3.3.

Table 3.3 Showing Score for Self-Acceptance Inventory

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Options</th>
<th>Score for positive items</th>
<th>Score for negative items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agree</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Neutral</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Disagree</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

The individual’s total score may range from 34 to 102. High score indicates high self-acceptance and low score indicates poor self-acceptance.

3.9.2.4 Reliability and Validity

The reliability of the tool was found using split-half (odd-even) method. The coefficient of correlation so obtained is 0.65 indicating that tool is reliable.
The validity of the tool had been computed in terms of the index of reliability (Square root of reliability coefficient) the obtained validity measure 0.81 is highly significant.

3.8.3 Study Skills Inventory

Study skills inventory developed and standardised by Kanchana. M (1986) was used to collect data from the sample. Study skills inventory is a self-reporting three point scale. Items of this inventory are in question form demanding information for each in any of the three options as follows: “Yes, Sometimes, No”.

3.8.3.1 Description of the Tool

The study skills inventory consists of 52 items to evaluate the different aspects of study skills possessed by the adolescent learners. Out of which 18 are negative and 33 are positive and the first item is neutral. Each item with two options has been modified by the investigator and research supervisor into three point scale as per the experts’ opinion by adding “sometimes” as the third alternative. The subjects have to indicate their choice by putting a tick mark (√) under one of the three columns against each item. A copy of study skills inventory is appended (Appendix-III).

Table 3.4 Showing the Dimensions of Study Skills Inventory

<table>
<thead>
<tr>
<th>Dimensions of study skills</th>
<th>Total number of items</th>
<th>S. No. of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Study method</td>
<td>32</td>
<td>01-32</td>
</tr>
<tr>
<td>2. In the class room</td>
<td>04</td>
<td>33-36</td>
</tr>
<tr>
<td>3. Home work</td>
<td>03</td>
<td>37-39</td>
</tr>
<tr>
<td>4. Regarding examination</td>
<td>08</td>
<td>40-47</td>
</tr>
<tr>
<td>5. Obstacles for effective study</td>
<td>05</td>
<td>48-52</td>
</tr>
</tbody>
</table>
Table 3.5 Showing the Nature of Study Skills Inventory

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Study skills inventory</th>
<th>Item number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Positive items</td>
<td>2,3,4,6,7,8,9,11,12,13,14,15,17,19,20,21,23,25,26,27,28,31,33,34,36,37,38,39,40,42,45,46,47</td>
</tr>
<tr>
<td>2</td>
<td>Negative items</td>
<td>5,10,16,18,22,24,29,30,32,35,41,43,44,48,49,50,51,52</td>
</tr>
</tbody>
</table>

3.8.3.2 Administration of the Tool

The study skills inventory was administered after giving the following instructions, “There are 52 statements in this inventory with 3 options. You read the statements and respond frankly by putting tick (✓) in any one of the options without omitting any one. Try to finish within 30 minutes”.

3.8.3.3 Scoring Procedure

The scoring pattern given in the manual goes as:

Item number 1 was scored in the following manner. (There can be only one sub item 1 to be scored). 1(a) - if marked yes 2; 1(b) - if marked yes 2; 1(c) - if marked yes 3; 1(d) - if marked yes 1. All other items from 2 to 52 are scored as given in the following table 3.6.

Table 3.6 Showing Score for Study Skills Inventory

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Options</th>
<th>Score for positive items</th>
<th>Score for negative items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Sometimes</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>No</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>
The individual’s total score may range from 52 to 156. A high score of 156 indicates good study skills and a low score of 52 indicates poor study skills.

3.8.3.4 Reliability and Validity

The Cronbach Alpha reliability coefficient of the tool is found to be 0.86. Face validity is established. The obtained reliability coefficient 0.86 reveals that the tool is highly reliable.

The validity of the tool has been assessed by computing the reliability index. In the present study it has been computed as 0.92 which indicates that the tool is highly valid.

3.8.4 Intellectual Achievement Responsibility Scale

The intellectual performance responsibility of adolescent learners is assessed with the help of the intellectual achievement responsibility scale constructed and standardised by Crandall C.J. and Chambells D.L. (1986). It was the adaption of IAR questionnaire version designed by Crandall (1974), Katkovsky and Crandall (1967). A copy of the IAR questionnaire is appended (Appendix-IV).

3.8.4.1 Rationale and Description of the Tool

The intellectual achievement responsibility scale consists of 34 forced choice items describing a positive or negative achievement experience followed by two alternatives. Each item is followed by one alternative stating that the event was caused by the respondent and another stating that the event occurred because of the behaviour of someone else, either a parent, teacher, or peer in the child’s environment. This measure taps a belief in one’s own control over, and responsibility for intellectual academic success and failures.

To obtain two groups that were divergent on the intellectual performance responsibility selecting 16 or fewer internal responses for success events were considered to be having positive intellectual performance responsibility (I+) and
students selecting 17 or more internal responses for failure events are considered to be having negative intellectual performance responsibility (I-).

**Table 3.7 Showing Dimensions of Intellectual Achievement Responsibility Scale**

<table>
<thead>
<tr>
<th>Dimensions of Intellectual Achievement Responsibility Scale</th>
<th>Item numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Positive intellectual performance responsibility</td>
<td>1,2,5,6,8,9,12,13,17,20,21,24,25,28,29,31,32</td>
</tr>
<tr>
<td>2. Negative intellectual performance responsibility</td>
<td>3,4,7,10,11,14,15,16,18,19,22,23,26,27,30,33,34</td>
</tr>
</tbody>
</table>

**3.8.4.3 Administration of the Tool**

The students were instructed to choose one response to each question by circling either answer “a” or “b”. The students were told that they were to answer every question on their own and that there were no correct or incorrect answers. The students were motivated to raise their hand if they encountered any difficulty in understanding the questions.

**3.8.4.3 Scoring Procedure**

A score is obtained by adding all positive events (2 marks) for which she/he takes credit and all negative events (2 marks) for which she/he takes blame. The total of these two sub-scores gives the student’s “I” score.

One half of the items measure the adolescent learners’ acceptance of responsibility for success events, the other half deal with responsibility for failure events. A total internality (I total), and separate sub scores for beliefs in internal responsibility for success (I+) and for failure (I-) are obtained from the items dealing with positive and negative outcomes respectively. The I+ and I- scores can be summed to give a general index of the extent to which the subject assumes responsibility for intellectual – academic outcomes.
3.8.4.4 Reliability and Validity

The split-half reliability coefficients of the intellectual performance responsibility scale were found to be 0.71 for total I and 0.69 for I+ and 0.68 for I- which is found to be significant. The validity of the tool has already been established by the author. However, in the present study the validity measures are computed in terms of square root of reliability. The obtained validity of the tool is found to be 0.84 indicating that the tool used in the study is highly valid.

3.9 Pilot Study

A Pilot study has been conducted on 60 adolescent learners representing the population from 9th, 10th, and 11th grade consisting of 30 boys and 30 girls to establish the reliability and validity of the research tools used in this study, to streamline the instructions to be given for each test, to modify phrases or sentences that were ambiguous and to determine the optimum time duration of each test. All the four tools viz., achievement motivation inventory, self-acceptance inventory, study skills inventory, and intellectual achievement responsibility scale were administered to the same set of adolescent learners.

3.10 Sample

The selection of sample is the next important step in any research study, after choosing the tools of the study. The total sample consists of 1000 adolescent learners studying in 9th, 10th, and 11th standards of age group (14 years, 15 years, and 16 years) from 6 different schools in Chennai and Thiruvallur districts in Tamil Nadu during the academic years 2009-2010. 1000 samples were collected by adopting stratified sampling technique to collect the data. Stratification of schools has been done on the basis of three types of school management belonging to rural and urban areas of Chennai and Thiruvallur districts. The sample includes 502 boys and 498 girls. The distribution of the sample is given in Table-3.8 and Table-3.9.
Table 3.8 Distribution of the Sample Based on Type of School Management

<table>
<thead>
<tr>
<th>Type of school management</th>
<th>Number of school</th>
<th>Sample size (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. AVM Rajeswari Matriculation Hr. Sec. School, Chennai.</td>
<td>2</td>
<td>222</td>
</tr>
<tr>
<td>2. St. John’s Matriculation Hr. Sec. School, Thiruvallur.</td>
<td>2</td>
<td>452</td>
</tr>
<tr>
<td>3. Government Hr. Sec. School, Ponneri, Chennai</td>
<td>2</td>
<td>326</td>
</tr>
<tr>
<td>4. Government Boys Hr. Sec. School, Porur, Chennai</td>
<td>2</td>
<td>326</td>
</tr>
<tr>
<td>5. Avichi Government- Aided Hr. Sec. School, Chennai.</td>
<td>2</td>
<td>326</td>
</tr>
<tr>
<td>6. Government- Aided Hr. Sec. School, Thiruvallur.</td>
<td>2</td>
<td>326</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>1000</td>
</tr>
</tbody>
</table>

Table 3.9 showing distribution of the sample

<table>
<thead>
<tr>
<th>District</th>
<th>Age(in years) and standard</th>
<th>Government Boys</th>
<th>Government Aided school Boys</th>
<th>Government Aided school Girls</th>
<th>Matriculation Boys</th>
<th>Matriculation Girls</th>
<th>Total</th>
<th>Grand total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chennai</td>
<td>14 (9th std.)</td>
<td>30</td>
<td>40</td>
<td>20</td>
<td>15</td>
<td>38</td>
<td>193</td>
<td>347</td>
</tr>
<tr>
<td>Thiruvallur</td>
<td></td>
<td>21</td>
<td>29</td>
<td>15</td>
<td>07</td>
<td>38</td>
<td>154</td>
<td></td>
</tr>
<tr>
<td>Chennai</td>
<td>15 (10th std.)</td>
<td>60</td>
<td>50</td>
<td>05</td>
<td>10</td>
<td>20</td>
<td>201</td>
<td>366</td>
</tr>
<tr>
<td>Thiruvallur</td>
<td></td>
<td>50</td>
<td>36</td>
<td>10</td>
<td>06</td>
<td>13</td>
<td>165</td>
<td></td>
</tr>
<tr>
<td>Chennai</td>
<td>16 (11th std.)</td>
<td>20</td>
<td>50</td>
<td>10</td>
<td>06</td>
<td>30</td>
<td>146</td>
<td>287</td>
</tr>
<tr>
<td>Thiruvallur</td>
<td></td>
<td>19</td>
<td>45</td>
<td>16</td>
<td>08</td>
<td>31</td>
<td>141</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>200</td>
<td>250</td>
<td>076</td>
<td>052</td>
<td>170</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>452</td>
<td>326</td>
<td>222</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.11 Data Collection Procedure

Data has been collected by using the above mentioned tools from the sample of students belonging to the age group of 14 years, 15 years and 16 years studying in 9th, 10th, and 11th standard classes in Chennai and Thiruvallur districts. The data were
collected in two phases Viz., in the first phase data from urban areas of Chennai and Thiruvallur districts were collected and in the second phase data were collected from rural areas of the same. All the subjects were administered the tools as a group test. They were properly instructed about the intention of the data collection, ways for answering properly prior to the filling in of their choices. All the adolescent learners were given ample time for the completion of the questionnaire and were checked properly before the collection of the tools from the subjects.

3.12 Main Study

A total of 1000 adolescent learners were selected randomly using stratified random sampling technique. The schools were stratified on the basis of types of school management, gender and locality of the adolescent learners. The tools selected for the study were administered and scored to yield the pertinent data. A comprehensive data sheet has been prepared for each student included in this sample distribution.

3.13 Statistical Techniques

The data collected by the investigator from the sample were analysed statistically. In the present study the relevant data collected were scores secured by 9th, 10th and 11th standard adolescent learners (of age group 14-years, 15-years and 16-years) with the achievement motivation inventory, self-acceptance inventory, study skills inventory and the intellectual achievement responsibility scale. Collected data were analysed by employing the following software package SPSS 16 (Statistical Package for Social Science) and Analysis of Moment Structure (AMOS) to arrive at meaningful conclusions. The following statistical methods were applied to analyse the scores on each dimension and each variable.

3.13.1 Descriptive Analysis

In the present investigation mean and standard deviation scores were calculated from the scores in the scales of achievement motivation, self-acceptance,
study skills and intellectual performance responsibility and it is discussed in chapter 4.2.

3.13.2 Differential Analysis

In the present study, ‘t’ value was calculated to test the significant difference between the mean scores of two groups in research variables and chi-square and ‘F’ ratio was calculated to test the significance of mean difference of more than two groups in research and personal demographic variables and it is discussed in chapter 4.2.6.

3.13.3 Relational Analysis

Relational analysis is used to find out the relationship between two variables. The correlation coefficient is valued in the field of education as the measure of relationship between test scores and other measures of performance. Here correlation is used to find out the relationship between the main variables (self-acceptance, study skills and intellectual performance responsibility) with the dependent variable (achievement motivation) and it is discussed in chapter 4.2.22.

3.14 Conclusion

This chapter outlines the design of the present study, the procedure followed and the tools used to measure Achievement motivation, self-acceptance, study skills and intellectual performance responsibility of the sample (adolescent learners) and the technique by which the sample has been selected. Further it describes in detail about the tools used, the method of scoring and the statistical techniques adopted in the study. The analyses and the results obtained have been presented in the succeeding chapter.