CHAPTER III: METHODOLOGY

METHOD IN BRIEF

The present study entitled “INFLUENCE OF CERTAIN VARIABLES ON THE ACHIEVEMENT OF PRIMARY SCHOOLS IN MADURAI DISTRICT” was intended to find out the effect of certain variables on the quality of primary school students’ achievement. This study was basically designed as a normative method of research with survey as the technique employed for data collection. It involved scientific ways of selection of sample, construction of tools for collecting data from the sample selected, validation of the tools, construction and validation of an achievement test for V standard pupils in their subjects, collection of data, interviewing parents, etc. Each of the above procedures is described briefly. The following pages present them.
SAMPLE

The study area was Madurai District which included Madurai, Melur and Usilampatti Educational districts. Madurai is one of the largest and important Districts in the State of Tamil Nadu, having vast diversity in linguistic, religious, socio-economic, communal, occupational and other aspects of culture. In the state of Tamil Nadu, Madurai District or a part of it constitutes a representative sample for many research studies.

In the case of the present study, Madurai city is the District headquarters, where the university to which the investigator belongs, is located. Hence the district was handy and convenient and became an automatic choice of study area. The district included three Educational Districts- Madurai, Melur and Usilampatti. Sample for the study, was selected at random from among the primary schools within the jurisdiction of all the three educational districts. Parents, who formed the sample were selected differently

SELECTION OF SAMPLE PRIMARY SCHOOLS

The complete list, of primary schools in each educational district, was obtained from the concerned District Education Office. The number of schools selected from each Educational District was in proportion to the total
The number of schools each district had. The schools were selected by the lottery method.

There are different kinds of primary schools in Tamil Nadu

1. Government schools under the control of Panchayat union (most primary schools belong to this category)

2. Corporation schools (only in Madurai city)

3. Municipal schools (in Melur and Usilampatti Towns)

4. Aided schools

5. Private schools (as in Matriculation schools)

At the primary level all are mixed schools. Care was taken to provide due representation to the various categories.

All the primary teachers, teaching V standard in all the schools, selected in each educational district constituted the sample. All children studying V standard in all schools selected also constituted the sample.

Parents of all the V standard children selected, formed a major part of the sample under “parents”. However, it also included some parents whose children were not studying V standard and some others who did not have any child. It also included members of the Parent-Teachers Association (PTA). Thus the sample selected included
(i) Primary Teachers form select schools teaching V standard

(ii) V standard children from those schools

(iii) Parents including PTA members

The details of the sample are given in Table 3.1

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Educational District</th>
<th>Type of Primary school</th>
<th>No. of Schools</th>
<th>No. of Teachers selected</th>
<th>No. of Pupils</th>
<th>No. of Parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Madurai</td>
<td>Corporation</td>
<td>6</td>
<td>19</td>
<td>79</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Govt. Aided</td>
<td>9</td>
<td>31</td>
<td>121</td>
<td>121</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
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<td><strong>50</strong></td>
<td><strong>200</strong></td>
<td><strong>200</strong></td>
</tr>
<tr>
<td>2</td>
<td>Melur</td>
<td>Panchayat Union</td>
<td>11</td>
<td>34</td>
<td>141</td>
<td>141</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Govt. Aided</td>
<td>5</td>
<td>16</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>50</strong></td>
<td><strong>200</strong></td>
<td><strong>200</strong></td>
</tr>
<tr>
<td>3</td>
<td>Usilampatti</td>
<td>Panchayat Union</td>
<td>17</td>
<td>34</td>
<td>107</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Govt. Kallar Reclamation</td>
<td>4</td>
<td>8</td>
<td>57</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Govt. Aided</td>
<td>3</td>
<td>8</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>24</strong></td>
<td><strong>50</strong></td>
<td><strong>200</strong></td>
<td><strong>200</strong></td>
</tr>
</tbody>
</table>
INSTRUMENTATION

Five tools were used to collect data from the three different samples, regarding the quality of Primary Education. They were

6. Primary Education Status Scale (PESS) for Teachers

7. Primary Education Status Scale (PESS) for Parents

8. Primary Education Status Scale (PESS) for V standard pupils

9. Achievement Test for V Standard Pupils (an integrated Achievement Test for V standard pupils involving Tamil, English, mathematics, Social Science and Environmental Science subjects)

10. Primary Schools’ Achievement Checklist.

All the five tools were constructed by the investigator and validated by tryouts.

CONSTRUCTION OF PESS FOR TEACHERS

It was thought that primary school teachers teaching V standard would be able to provide reliable information regarding the status of quality of primary education and hence the investigator decided to collect information from primary school teachers who had been teaching V standard. A Primary Education Status Scale (PESS) for Teachers was constructed and used for collecting information about Primary Education. Further a checklist for
Achievement of Primary Schools, to be checked by Primary School teachers teaching V standard, was constructed.

Major and important facilitators of Primary Education were identified by discussion with primary school teachers, Headmasters and Professors of Education. Textbooks and Journals were also referred to the facilitators identified were the following seven:

1. Curriculum (Primary)
2. Teacher and Teaching
3. School Environment
4. Management
5. Parents of children
6. Physical Health
7. Attitude

Under each facilitator, a number of pertinent items, each one contributing to the overall quality of Primary Education, were generated. Each item was expressed as a statement. These statements, under each of the seven facilitators were drafted and redrafted several times. They were modified reworded or changed. The seven facilitators did not have the same number
of items under each heading, Curriculum and Teacher and Teaching consisted of 20 items each, School Environment included 14 items and the remaining facilitators viz., Management, Parents, Physical Health and Attitude included 10 items each.

VALIDATION OF PESS FOR TEACHERS

Copies of the draft tool were obtained. They were given to a few primary headmasters/ headmistresses and the items under each aspect were discussed. The headmasters/ headmistresses felt that the items under each facilitator or factor covered the aspect fully. Two Professors of Education also expressed the same view, after going through the items under each of the seven facilitators of Primary Education.

A try-out was made. Copies of the draft tool were given to fifty primary school teachers in the Madurai area. They were requested to read the items carefully and give their responses for each item in any one of the columns provided. At this stage there was no separate response sheet.

After a lapse of 15 days, copies of the tool were given to the same teachers and they were requested to give their responses to each item. Instructions were the same and the teachers were familiar to the task as they did it 15 days earlier. Actually 60 teachers were fixed for the try-out. But on the day fixed for the purpose, only 58 teachers were available. For the
second administration the date was not given in advance. When the investigator went to the schools for the 2\textsuperscript{nd} administration, only of the 58 who filled the tool earlier, was not available. But the two teachers, who were on leave at the time of first administration, were present. Thus the second time, it was 57 teachers. As the urban teachers were more in number the PESS filled by urban teachers were dropped to make it 50 and to establish evenness between rural and urban teachers.

The responses were quantified. The correlation between scores for the two administration was found. It was found to be 0.79. Thus the PESS for teachers was highly reliable.

The comprehensive Bio-data sheet was prepared and attached to the tool. Instructions were given at the beginning of the sheet. The investigator visited the schools identified and personally distributed the tools to the teachers, maximum three or four in a school, no letter of request was attached to the tool. The bio-data sheet was very comprehensive and obtained data on about 30 bio-demographic variables. The PESS for Teachers is appended (Appendix I)

**CONSTRUCTION OF PESS FOR PARENTS**

The quality of Primary Education as revealed through the achievement of V standard pupils, in the study area viz., Madurai, Melur and
Usilampatti Educational Districts was assessed from the opinions of parents too. A Primary Education Status Scale (PESS) for parents was constructed and validated by the investigator. The tool was similar to the one constructed for teachers, with very slight changes which were made to suit parents. The facilitators of Primary Education identified were the same. Home Environment was included as a facilitator as parents would be able to provide correct information on that. The total number of items included was less compared to the PESS for Teachers. For item generation, drafting and finalization, the same procedure, as adopted for the PESS for teachers, was adopted. The facilitators of Primary Education and the number of items included under each facilitator were as given below.

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Facilitator/Factor</th>
<th>No. of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Curriculum</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>Teacher and Teaching</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>School Environment</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>Management</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>Parents</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>Home Environment</td>
<td>10</td>
</tr>
<tr>
<td>7</td>
<td>Physical Health of Pupils</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>Mentality of Parents</td>
<td>10</td>
</tr>
</tbody>
</table>
These eight facilitators were thought of as essential factors contributing to the quality of education. Professors of Education were consulted regarding the content of the factors contributing to the quality of Primary Education. Items were generated and they were drafted several times to suit the level of parents in terms of the language used. Many parents, who had not completed even primary education, could just read the statements in the simplest language. For illiterate parents, the investigator had to read and explain the points in local language.

The relevance of the items under each facilitator was discussed. The experts consulted also expressed that the items included under each factor were appropriate. In-toto, the items covered the whole content of Primary Education. Thus the content validity of the PESS for parents was obvious.

**VALIDATION OF PESS FOR PARENTS**

The content validity of the PESS for parents was established and accepted by a panel of experts, who went through the statements under each factor.

Reliability of the tool was established in terms of clarity of the statements to respondents. Each item meant the same to every parent who could read. The items did not mean differently to different respondents. A try-out was made with the draft tool. Copies were obtained and they were
distributed to 100 parents including six women, in the Madurai area, who could read. They were requested to give their responses, by ticking against each item, in any one of the three columns, according to their opinion. The filled-in tools were obtained and scored. After the lapse of nine days, the same parents were given the same tool and they were asked to give their responses. The responses were scored. The correlation between the scores in the two administrations was found to be 0.70. Thus the PESS for parents was validated. In the case of the tool for the final study, response sheets were prepared separately.

A bio-data sheet was prepared to collect information based on certain bio, demographical variables of the parents, and it was attached to the tool. Instructions were given as to how to fill in the bio-data required. The PESS for parents is appended (Appendix II)

**CONSTRUCTION OF PESS FOR V STANDARD PUPILS**

The quality of Primary Education as it obtained at the V standard in the primary schools of Madurai, Melur and Usilampatti Educational Districts was assessed. The status was appraised by V standard pupils also. The tool used was the Primary Education Status Scale (PESS) for V standard pupils which included seven factors contributing to healthy Primary Education: they are
1. Curriculum
2. Teacher and Teaching
3. School Environment
4. Management
5. Parents
6. Home Environment
7. Physical Health

The factors were established as essential for assessing the quality of education at this level. Pertinent items were generated. Drafting was repeated several times, modifying or changing the words, cutting short the length of the statements, adding an item to or dropping one from a component.

Copies of the draft tool were obtained. They were shown to primary teachers having a good length of experience, and Professors of Education and the relevance of the items was discussed, under each factor. The experts consulted expressed a unanimous view of their acceptance regarding the appropriateness of the items for V standard pupils. However the factors of PESS for V standard pupils did not include the same number of statements under each factor.

VALIDATION OF PESS FOR V STANDARD PUPILS
Copies of the draft-tool were given to V standard teachers and one Professor of Education. They were requested to read the items under each factor of Primary Education included in the tool --- Curriculum, Teacher and Teaching, etc., and express their views as to whether the items under each aspect covered that aspect fully at that level. The teachers and the Professors of Education expressed their views that all the seven aspects included in the tool were fully covered by the statements given under each aspect. Thus the validity of the tool was established.

The reliability was established by try-out by the test-retest method. Copies of the draft tool were given to 100 V standard pupils selected from four schools in the Madurai Educational District. They were given elaborate instruction regarding what they had to do. Their responses were collected and scored. The draft tools were also collected. After exactly a week the same tool was given to the same students and they were requested to give their responses. The filled-in tools were collected and scored. The scores of the 100 pupils in the first administration and re-administration of the draft tool were used for computing the reliability of the PESS.

The PESS for V standard pupils also had a bio-data blank. The bio variables were used to compare their scores in the achievement test. It was felt that children should not be disturbed prior to or immediately after the
achievement test by asking them to furnish the bio data required. Hence the sheet was attached to the PESS for V standard pupils. Hence the Bio Data Blanc was attached to the PESS for V standard pupils. The tool is appended (Appendix III)

CONSTRUCTION OF PRIMARY SCHOOLS’ ACHIEVEMENT CHECKLIST (PSAC)

A Primary Schools’ Achievement Checklist (PSAC) was prepared to find out the achievements of primary schools in the study area according to the opinion of Teachers as well as Parents.

Fifteen items, regarded as achievements of Primary Schools, were listed and shown to a panel of experienced teachers, Elementary Education Officers and to two Professors of Education. They were requested to go through the items and give their opinion as to whether the 15 items would be considered achievements of primary schools. The personnel consulted generally agreed that the items referred to ‘achievements’ of primary schools. Only the two professors suggested some modifications of the statements. The statements included concerned the following aspects, as achievements of Primary Schools.

1. Retaining pupils in the school in the afternoon also, as pupils tend to go home after mid-day meals
2. Retaining pupils in the school throughout the year without dropping out

3. Retaining pupils admitted in standard one in the school at least for five years till they complete standard V

4. Treating all children alike (though this appears to be quite natural, in the Indian context children in villages are subjected to so much of discrimination and differentiation. In schools a child of the village headman and one from the slum are not treated alike. There are other factors also)

5. Devoting individual care and attention to every child

6. Developing in all children skills of Primary Education – listening, speaking, reading and writing – appropriate to that level

7. Enabling every child acquire minimum level of learning

8. Inculcating in the minds of children that they should have good education and become ‘great’ people

9. Taking extra effort in the education of girl children

10. Bringing all children below poverty line to school
11. Making parents to come to school at least once in two months to enquire about the education of their children

12. Compelling parents to send their children to high/higher secondary schools

13. Developing the school involving parents, through Parent-Teachers Association

14. Making the people appreciate the school as ‘good’

15. Making government officers label the school as ‘good/model’

The primary school achievement checklist, though listed only fifteen items as achievement of primary schools, was a comprehensive checklist to find out the achievements of primary schools in the context prevailing in villages. It became essential to find out one or few or all of these achievements in primary schools, if they were there, as per the opinion of primary school teachers who are the best judges to indicate them, and the factors which influenced them, which could be determined by high scores made by the factors in the PESS.

The PSAC is appended (Appendix IV)
CONSTRUCTION OF ACHIEVEMENT TEST

A comprehensive, Integrated Achievement Test was constructed for V standard pupils. The achievement of V standard pupils was used as an indicator of the effect of certain factors influencing Primary Education. After categorizing pupils of standard V based on their dominant factor, the influence of those factors on the achievement of children was found out with reference to each factor. Thus achievement was designed to be measured.

The lessons taught up to the half-yearly examination (long-term) were primarily considered. Out of that portion, two important lessons were taken from each subject for setting the one-all integrated question paper comprising the five subjects: Tamil, English, Mathematics, Social Science and Environmental Science.

In each subject 30 very short answer type questions at the comprehension level were set. The questions were typewritten and copies obtained subject-wise separately. Copies were given to select teachers, 10 in each subject, who had 10 or more years of experience. Only one subject question was given at a time. Each of the ten teachers had been teaching the subject for V standard for more than three years. The teachers were requested to go through the questions carefully and select ten questions
which could test the knowledge and achievement of the pupils comprehensively in the two lessons of that subject, according to their view. The 10 questions selected in each subject were based on their choice by most teachers. The teachers’ choice was not uniform in all subjects. The minimum agreement was found among the teachers in terms of four questions each in Tamil and Environmental Science. The maximum agreement among the teachers was found in terms of seven questions in Social Science. In the case of Mathematics, only three teachers used very few problems found in the textbooks. All the teachers set similar questions except for change in numbers of the problems. In the case of English subject, there was exactly 50% agreement among the teachers as they had 5 questions set by all of them.

VALIDATION OF ACHIEVEMENT TEST

After modifying and re-wording certain questions, the fifty questions were numbered serially from 1 to 50 from Tamil to Environmental Science, English, Mathematics and Social Science coming in between and in the order. Computer print-outs were obtained and copies of the question paper were given to a small sample of 30 V standard pupils, 15 boys and 15 girls, from different schools, two each from the three Educational Districts. Each pupil was given the question paper separately and asked to read the
questions carefully. Each one was asked to express freely, as to what was specifically asked irrespective of whether he/she knew the answer or not. Almost all the pupils expressed clarity of the question and could understand what was asked. The questions did not mean differently to different children. Thus the test was reliable in terms of clarity.

Further, the reliability co-efficient of the test was mathematically computed by the Split-half method. Copies of the question paper were obtained and the test given to 100 pupils in five primary schools in Madurai Educational District. These five schools were precluded for the purpose of selection of sample for the final study.

The test papers were scored and arranged top to bottom. The top 27% and Bottom 27% were treated as the high and low group respectively and the reliability for each half test was computed from which the reliability of the whole test was found. The test had reliability co-efficient of 0.84.

The content validity of the tool was already established by the view expressed by a panel of teachers who had been teaching the subject over a period, that the questions covered the lessons included in each subject.

The test had a data blanc which was initiated to collect data on certain demographic variables of the pupils. This bio-data blanc was the same in
the questionnaire which was used to collect data from pupils on certain aspects of Primary Education.

The test is appended (Appendix V)

COLLECTION OF DATA

The investigator obtained permission from the Chief Education Officer concerned for visiting a number of primary schools in the three Education Districts, viz., Madurai, Melur and Usilampatti. The schools form where data were to be collected, from V standard pupils and teachers, were identified in each educational district. A time schedule was prepared which showed the probable dates and places of visit. As a number of villages were interior and remote in the educational districts, and as scores of them were not having this facilities, the investigator had to change the dates of visit to given schools even four times. However, with the help and guidance of some bus conductors and postmen, the investigator reached certain schools listed after much difficulty, riding a bicycle for about twenty kilometers. The rainy season threatened the investigator to suspend data collection from a few schools, as the minibus service, the only mode of transport was suspended. But keeping in mind the uniform length of time interval that school be allowed to all V standard children taking the test, the investigator braved all odds to visit schools to collect data from V standard pupils using
the achievement test, to find out the quality of primary education as it obtained.

**ADMINISTERING ACHIEVEMENT TEST TO V STANDARD PUPILS**

The investigator met the teachers of standard V, who constituted the sample, in each Educational District, explained to them the purpose of his research and the types and mode of collection data. He requested the teachers to teach the children of standard V the two lessons identified in each of the five subjects in which their children’s achievement would be tested with the integrated Achievement Test constructed for the purpose. In consultation with the teachers and several Headmistress/Headmasters, the investigator fixed a common date for each Education District for the administration of the achievement test to the 200 V standard children selected in each District. The question papers were handed over to the heads of primary schools at least two days prior to the date scheduled for the test. The date and time were noted on the cover. With the help of the Heads and teachers, the test was conducted in each educational district as scheduled. The answer sheets were collected from the heads of schools and scored.

**ADMINISTERING PESS TO PUPILS AND TEACHERS**
At the time of the same visit, he distributed copies of the PESS for V standard pupils and that which is meant for teachers. Teachers were also supplied copies of Primary Schools’ Achievement Checklist. The investigator spoke to children personally and explained them how to fill in their responses to the items in the PESS for V standard pupils, in the Response Sheets. Many Headmasters/Headmistresses were kind enough to make arrangements for the investigator to meet all children in a place—classroom hall verandah—to explain things in a detailed manner to enable them to understand their responses on their own as it occurred to them. In spite of all efforts to make things easy for them, the investigator had to visit each school several times to collect their responses.

**INTERVIEWING PARENTS**

The investigator met select parents in different schools in the three Education Districts to cross check the data furnished by them. From illiterate parents data were collected, with the help of the heads of schools selected, in the tool meant for the purpose. Regarding achievement of primary schools, parents clarified several points, before furnishing data.

**STATISTICAL TREATMENT**