7 (b) Srivastava, R.P. (1984); An Investigation into the Relationship of Reading Ability with General Mental Ability, Socio-Cultural Status and School Achievement; M.B. Butch, Fourth Survey of Research in Education, 1983-88; Vol. I, p. 852

7 (c) Su-Fu-hsing (1994); The Relationship Between Reading Achievement and Cross Grade Content Area Performance by Elementary Students in Taiwan, Dissertation International Abstracts, Vol. 55, No. 6, December 94, p. 1465-A.
### Chapter IV

**Method and Procedure**

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4.01. INTRODUCTION

Success of any research depends upon the suitability of the method employed. In gathering varied facts, many methods and procedures have been developed to meet the needs of the research. The decision about the method or methods to be employed however always depends upon the nature of the problem selected and the kind of data necessary for its solutions (S.P. Sukia, 1963). Therefore research procedure and techniques are found to vary from study to study.

The investigator has adopted survey method for the successful completion of his research. The survey method of research deals with large number of cases. It has a distinctive form of research methodology that owes much of its recent development to the field of Sociology. The survey research is an organised attempt to analyse, interpret, and report the present status of a social situation or group or areas. It suggests the course of future development. Hence to facilitate the investigation into the problem identified and expressed towards the end of chapter IV it is stated in the form of a topic thus:

4.02. STATEMENT OF THE TOPIC

The topic of the research is worded as given below:

"ACADEMIC PERFORMANCE OF THE STUDENTS OF TENTH STANDARD FAILED IN THE S.S.L.C. EXAMINATION".
4.03. OPERATIONAL DEFINITIONS

ACADEMIC PERFORMANCE:

Operationally the term "ACADEMIC PERFORMANCE" means

i) the average marks scored by the Tenth standard students failed in
the S.S.L.C. examination in the year 1992-93.

ii) the marks obtained in the S.S.L.C. examination in the following
subjects.

a) Tamil

b) English and

c) Mathematics

and

iii) the scores obtained on the following tests prepared and validated
by the investigator:

a) Test of Numerical Ability

b) Test of Reading Comprehension in Tamil and

c) Test of Reading Comprehension in English

TENTH STANDARD:

It is the school final class in Tamilnadu marking the end of
the secondary course of study. After finishing this one can go for higher
studies by joining the higher secondary course or secure a job. In the
present study the investigator has considered the Tenth standard
students of the academic year 1992-93.
S.S.L.C. EXAMINATION:

It is the Secondary School Leaving Certificate examination being conducted by the Directorate of Government Examinations, Chennai-6, Tamilnadu for the Tenth standard students every year in the month of March and October. In the present study the investigator has considered the S.S.L.C. examination conducted in March, 1993.

4.04. SIGNIFICANCE OF THE STUDY

Our present system of examination is rather knowledge oriented than skill based. It is simply an exercise in memorisation skills and the ability to spit out in a two and a half hour period, what was memorised over a span of one year. It does not adequately test the breadth of knowledge gained nor does it test whether the student is capable of applying it. This ill conceived, bureaucratic decision, clearly exemplifies that the emphasis of our school final examination system, unfortunately, is on timing and memorisation, and not on competence. The annual intolerable failure rate of over 40% in S.S.L.C. examination is directly linked to the wasting crores of rupees from the State treasury. With proper guidelines, the failure rate can be decreased. Hence the present research study is aimed at clarifying whether the causative factor is the person himself or herself i.e. the deficiency in cognitive or affective or psychomotor domains, or the environment in which he or she is
brought up. Once the real problem for such large failures is identified, remedial measures can be easily taken. Hence the present study is designed to yield fruitful information to diagnose and remedy the felt crucial academic problem.

4.05. RESEARCH TOOLS

The researcher has made use of the following tools for data collection:

1) A personal data form:

(Designed by the investigator, 1993)

It is designed to get information from the respondents regarding their school and home conditions.

2. Cattell's Culture Fair Test:

(Designed by R.B. Catell and A.K.S. Catell).

It has been chosen for measuring the intelligence of the respondents.

3. Test of Self-concept:

(Developed by Sagar - Sharma, 1970)

It has been selected for assessing the level of self-concept of the respondents.
4. Test of Achievement Motivation:

(Developed by V.S. Shanthamani and Hafeez, A, 1968)

For measuring the level of achievement motivation of the respondents, it has been chosen.

5. Test of Numerical Ability:

(Designed by the Investigator, 1993)

It has been developed for assessing the level of numerical ability of the respondents.

6. Home Climate Questionnaire:

(Designed by the Investigator, 1993)

For studying the home climate of the respondents, it has been designed.

7. School Climate Questionnaire:

(Designed by the Investigator, 1993)

It is meant for studying the nature of school climate available for the respondents.

8. Teacher - Pupil Relationship Questionnaire:

(Designed by the Investigator, 1993)

It is designed for studying the existing nature of teacher - pupil relationship of the respondents.
9. Peer Relationship Questionnaire:

(Designed by the Investigator, 1993)

It is prepared for studying the nature of peer relationship found among the respondents.

10. Test of Reading Comprehension in English:

(Designed by the Investigator, 1993)

It is meant for evaluating the skills of reading comprehension developed by the respondents in English.

11. Test of Reading Comprehension in Tamil:

(Designed by the Investigator, 1993)

For identifying the skills of reading comprehension developed by the respondents in Tamil, it has been developed.

4.06. OBJECTIVES

PART - I

PRIMARY OBJECTIVES

1. To find out the general performance level of the Tenth standard students failed in the S.S.L.C. examination.

2. To find out the performance level of the Tenth standard students failed in the S.S.L.C. examination in
   a. the first language Tamil
   b. the second language English and
3. To find out the level of mastery of the Tenth standard students failed in the S.S.L.C. examination in
   a. Reading Comprehension in Tamil
   b. Reading Comprehension in English and
   c. Numerical ability
4. To find out the Intelligence level of the Tenth standard students failed in the S.S.L.C. examination.
5. To find out the level of
   a. Self-concept and
   b. Achievement motivation of the Tenth standard students failed in the S.S.L.C. examination.
6. To find out the
   a. Educational level of the father
   b. Educational level of the mother
   c. Income level of the parents and
7. To find out the nature of
   a. School climate
   b. Teacher - pupil relationship and
c. Peer relationship of the Tenth standard students failed in the S.S.L.C. examination.

PART II

SECONDARY OBJECTIVES

SECTION - A

1. To find out the relationship between
   b. general performance in the S.S.L.C. examination and performance in English.
   c. general performance in the S.S.L.C. examination and performance in Mathematics.
   d. performance in Tamil and the mastery of the skills of comprehension in Tamil
   e. performance in English and the mastery of the skills of comprehension in English
   f. performance in Mathematics and the mastery of numerical ability

2. To find out the relationship between intelligence and
   a. performance in Tamil
   b. performance in English and
   c. performance in Mathematics
3. To find out the relationship between self-concept and
   a. performance in Tamil
   b. performance in English and
   c. performance in Mathematics

4. To find out the relationship between achievement motivation and
   a. performance in Tamil
   b. performance in English and
   c. performance in Mathematics

SECTION - B

5. To find out the difference in the educational level of the fathers of
   the Tenth standard students failed in the S.S.L.C. examination in
   respect of pupils'
   a. performance in Tamil
   b. performance in English and
   c. performance in Mathematics

6. To find out the difference in the educational level of the mothers in
   respect of pupils'
   a. performance in Tamil
   b. performance in English and
   c. performance in Mathematics
7. To find out the difference in the level of the family income in respect of pupils'
   a. performance in Tamil
   b. performance in English and
   c. performance in Mathematics

8. To find out the difference in the Home climate in respect of pupils'
   a. performance in Tamil
   b. performance in English and
   c. performance in Mathematics

9. To find out the difference in the School climate in respect of pupils'
   a. performance in Tamil
   b. performance in English and
   c. performance in Mathematics

10. To find out the difference in the Teacher-pupil relationship in respect of pupils'
    a. performance in Tamil
    b. performance in English and
    c. performance in Mathematics

11. To find out the difference in the Peer relationship in respect of pupils'
    a. performance in Tamil
b. performance in English and

c. performance in Mathematics

SECTION - C

12. To find out the difference between boys and girls of the Tenth standard students failed in the S.S.L.C. examination with regard to

a. general performance in the S.S.L.C. examination

b. performance in Tamil

c. performance in English and

d. performance in Mathematics

13. To find out the difference between boys and girls with regard to the following skills

a. mastery over skills of comprehension in Tamil

b. mastery over skills of comprehension in English and

c. mastery over numerical ability

14. To find out the difference between boys and girls with regard to the following psychological factors

a. intelligence

b. self-concept and

c. achievement motivation
15. To find out the difference between boys and girls with regard to the following environmental factors
   a. home climate and
   b. school environment

   By school environment the investigator means the combined effect of school climate, teacher-pupil relationship and peer relationship. It is the sum total of all these scores.

16. To find out the difference between Hindu and non-Hindu pupils with regard to
   a. general performance in the S.S.L.C. examination
   b. performance in Tamil
   c. performance in English and
   d. performance in Mathematics

17. To find out the difference between Hindu and non-Hindu pupils with regard to the following skills
   a. mastery over skills of comprehension in Tamil
   b. mastery over skills of comprehension in English and
   c. mastery over numerical ability

18. To find out the difference between Hindu and non-Hindu pupils with regard to the following psychological factors
   a. intelligence
b. self-concept and

c. achievement motivation

19. To find out the difference between Hindu and non-Hindu pupils with regard to the following environmental factors

a. home climate and

b. school environment

20. To find out the difference between the students studied in Private schools and Government schools with regard to

a. general performance in the S.S.L.C. examination

b. performance in Tamil

c. performance in English and

d. performance in Mathematics

21. To find out the difference between the students studied in Private schools and Government schools with regard to the following skills

a. mastery over skills of comprehension in Tamil

b. mastery over skills of comprehension in English and

c. mastery over numerical ability

22. To find out the difference between the students studied in Private schools and Government schools with regard to the following psychological factors
a. intelligence
b. self-concept and
c. achievement motivation

23. To find out the difference between the students studied in Private schools and Government schools with regard to the following environmental factors
   a. home climate and
   b. school environment

24. To find out the difference between the students studied in Single schools and Mixed schools with regard to
   a. general performance in the S.S.L.C. examination
   b. performance in Tamil
   c. performance in English and
   d. performance in Mathematics

25. To find out the difference between the students studied in Single schools and Mixed schools with regard to the following skills
   a. mastery over skills of comprehension in Tamil
   b. mastery over skills of comprehension in English and
   c. mastery over numerical ability
26. To find out the difference between the students studied in Single schools and Mixed schools with regard to the following psychological factors
   a. intelligence
   b. self-concept and
   c. achievement motivation

27. To find out the difference between the students studied in Single schools and Mixed schools with regard to the following environmental factors
   a. home climate and
   b. school environment

28. To find out the difference between the students studied in Rural schools and Urban schools with regard to
   a. general performance in the S.S.L.C. examination
   b. performance in Tamil
   c. performance in English and
   d. performance in Mathematics

29. To find out the difference between the students studied in Rural schools and Urban schools with regard to the following skills
   a. mastery over skills of comprehension in Tamil
   b. mastery over skills of comprehension in English and
c. mastery over numerical ability

30. To find out the difference between the students studied in Rural schools and Urban schools with regard to the following psychological factors
   a. intelligence
   b. self-concept and
   c. achievement motivation

31. To find out the difference between the students studied in Rural schools and Urban schools with regard to the following environmental factors
   a. home climate and
   b. school environment

4.07. HYPOTHESES

PART I

PRIMARY HYPOTHESES

1. The general performance level of the Tenth standard students failed in the S.S.L.C. examination is low.

2. The performance level of the Tenth standard students failed in the S.S.L.C. examination is low in the following;
   a. first language Tamil
   b. second language English and
3. The mastery of the Tenth standard students failed in the S.S.L.C. examination is low in the following;
   a. skills of comprehension in Tamil
   b. skills of comprehension in English and
c. numerical ability

4. The intelligence level of the Tenth standard students failed in the S.S.L.C. examination is low.

5. The level of
   a. self-concept and
   b. achievement motivation of the Tenth standard students failed in the S.S.L.C. examination is low.

6. The Tenth standard students failed in the S.S.L.C. examination are low in the following;
   a. educational level of the fathers
   b. educational level of the mothers
c. income level of the parents and
d. home climate

7. The Tenth standard students failed in the S.S.L.C. examination are low in the following;
   a. school climate
PART II

SECONDARY HYPOTHESES

SECTION - A

1. There is no significant relationship between the following:
   b. general performance in the S.S.L.C. examination and the performance in English.
   c. general performance in the S.S.L.C. examination and the performance in Mathematics.
   d. performance in Tamil and the mastery of the skills of comprehension in Tamil
   e. performance in English and the mastery of the skills of comprehension in English
   f. performance in Mathematics and mastery of the skills of numerical ability

2. There is no significant relationship between the pupils'
   a. intelligence and performance in Tamil
   b. intelligence and performance in English
3. There is no significant relationship between the pupils' 
   a. achievement motivation and performance in Tamil 
   b. achievement motivation and performance in English 
   c. achievement motivation and performance in Mathematics 

SECTION - B 
4. There is no significant difference in the educational levels of the 
   fathers' of the Tenth standard students failed in the S.S.L.C. 
   examination in respect of pupils' 
   a. performance in Tamil 
   b. performance in English and 
   c. performance in Mathematics 

5. There is no significant difference in the educational levels of the 
   mothers of the Tenth standard students failed in the S.S.L.C. 
   examination in respect of pupils' 
   a. performance in Tamil 
   b. performance in English and 
   c. performance in Mathematics 

6. There is no significant difference in the levels of family income of 
   parents in respect of pupils' 
   a. performance in Tamil
b. performance in English and

c. performance in Mathematics

7. There is no significant difference in the levels of home climate in respect of pupils'

a. performance in Tamil

b. performance in English and

c. performance in Mathematics

8. There is no significant difference in the levels of school climate in respect of pupils'

a. performance in Tamil

b. performance in English and

c. performance in Mathematics

9. There is no significant difference in the levels of teacher-pupil relationship in respect of pupils'

a. performance in Tamil

b. performance in English and

c. performance in Mathematics

10. There is no significant difference in the levels of peer relationship in respect of pupils'

a. performance in Tamil

b. performance in English and
11. There is no significant difference between boys and girls of the Tenth standard students failed in the S.S.L.C. examination with regard to the following academic performances:
   a. general performance in the S.S.L.C. examination
   b. performance in the first language Tamil
   c. performance in the second language English and
   d. performance in Mathematics

12. There is no significant difference between boys and girls with regard to the following:
   a. mastery over skills of comprehension in Tamil
   b. mastery over skills of comprehension in English and
   c. mastery over numerical ability

14. There is no significant difference between boys and girls with regard to the following psychological factors:
   a. intelligence
   b. self-concept and
   c. achievement motivation

15. There is no significant difference between boys and girls with regard to the following environmental factors:
16. There is no significant difference between Hindu and non-Hindu pupils with regard to the following:
   a. general performance in the S.S.L.C. examination
   b. performance in Tamil
   c. performance in English and
   d. performance in Mathematics

17. There is no significant difference between Hindu and non-Hindu pupils with regard to the following:
   a. mastery over skills of comprehension in Tamil
   b. mastery over skills of comprehension in English and
   c. mastery over numerical ability

18. There is no significant difference between Hindu and non-Hindu pupils with regard to the following psychological factors:
   a. intelligence
   b. self-concept and
   c. achievement motivation

19. There is no significant difference between Hindu and non-Hindu pupils with regard to the following environmental factors:
   a. home climate and
20. There is no significant difference between the students studied in Private schools and Government schools with regard to the following:
   a. general performance in the S.S.L.C. examination
   b. performance in Tamil
   c. performance in English and
   d. performance in Mathematics

21. There is no significant difference between the students studied in Private schools and Government schools with regard to the following:
   a. mastery over skills of comprehension in Tamil
   b. mastery over skills of comprehension in English and
   c. mastery over numerical ability

22. There is no significant difference between the students studied in Private schools and Government schools with regards to the following psychological factors:
   a. intelligence
   b. self-concept and
   c. achievement motivation
23. There is no significant difference between the students studied in Private schools and Government schools with regard to the following environmental factors:

   a. home climate and
   b. school environment

24. There is no significant difference between the students studied in Single schools and Mixed schools with regard to the following:

   a. general performance in the S.S.L.C. examination
   b. performance in Tamil
   c. performance in English and
   d. performance in Mathematics

25. There is no significant difference between the students studied in Single schools and Mixed schools with regard to the following:

   a. mastery over skills of comprehension in Tamil
   b. mastery over skills of comprehension in English and
   c. mastery over numerical ability

26. There is no significant difference between the students studied in Single schools and Mixed schools with regard to the following psychological factors:

   a. intelligence
   b. self-concept and
c. achievement motivation

27. There is no significant difference between the students studied in Single schools and Mixed schools with regard to the following environmental factors:
   a. home climate and
   b. school environment

28. There is no significant difference between the students studied in Rural schools and Urban schools with regard to the following:
   a. general performance in the S.S.L.C. examination
   b. performance in Tamil
   c. performance in English and
   d. performance in Mathematics

29. There is no significant difference between the students studied in Rural schools and Urban schools with regard to the following:
   a. mastery over skills of comprehension in Tamil
   b. mastery over skills of comprehension in English and
   c. mastery over numerical ability
30. There is no significant difference between the students studied in Rural schools and Urban schools with regard to the following psychological factors:
   a. intelligence
   b. self-concept and
   c. achievement motivation.

31. There is no significant difference between the students studied in Rural schools and Urban schools with regard to the following environmental factors:
   a. home climate and
   b. school environment

4.08. POPULATION AND SAMPLE

The Tenth standard students failed in the March 1993 S.S.L.C. examination, conducted by the Directorate of Government Examinations, Chennai-6, Tamilnadu, forms the population of the study.

Randomly selected candidates numbering 1015 taken from the Tenth standard failed students who were preparing for the supplementary S.S.L.C. examination to be conducted by the Board of Secondary Education, forms the sample of study. The respondents studied in various State aided High and Higher Secondary Schools of
Kanyakumari District and failed in the S.S.L.C. examination in one or more subjects.

4.09. BREAK UP OF THE SAMPLE OF FAILED PUPILS

Table 4 (a) gives the break up of the respondents.

Table 4 (a)

Break up of the sample of failed pupils

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Category</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Boys studied in Private schools</td>
<td>171</td>
</tr>
<tr>
<td>2</td>
<td>Girls studied in Private schools</td>
<td>257</td>
</tr>
<tr>
<td>3</td>
<td>Boys studied in Government schools</td>
<td>287</td>
</tr>
<tr>
<td>4</td>
<td>Girls studied in Government schools</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>Total number of respondents</td>
<td>= 1015</td>
</tr>
</tbody>
</table>

In order to interpret clearly in which area the problem lies for the Tenth standard failed students, a comparative study has been made with the Tenth standard passed students who continued their studies in Eleventh standard in the Higher Secondary schools during 1993-94. Table 4 (b) gives the break up of the sample for passed pupils.
Table 4 (b)

Break up of the sample of passed pupils

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of the Institution</th>
<th>Private/ Govt.</th>
<th>Boys/Girls</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Carmel H.S. School, Nagercoil</td>
<td>Private</td>
<td>Boys</td>
<td>55</td>
</tr>
<tr>
<td>2</td>
<td>SMRV H.S. School, Vadasery</td>
<td>Private</td>
<td>Boys</td>
<td>50</td>
</tr>
<tr>
<td>3</td>
<td>LMS Girls H.S. School, Neyyoor</td>
<td>Private</td>
<td>Girls</td>
<td>55</td>
</tr>
<tr>
<td>4</td>
<td>Govt. H.S. and Training School, Kottar</td>
<td>Govt.</td>
<td>Girls</td>
<td>40</td>
</tr>
<tr>
<td>5</td>
<td>Govt. H.S. School, Thuckalay</td>
<td>Govt.</td>
<td>Boys</td>
<td>50</td>
</tr>
<tr>
<td>6</td>
<td>Govt. H.S. School, Thuckalay</td>
<td>Govt.</td>
<td>Girls</td>
<td>20</td>
</tr>
<tr>
<td>7</td>
<td>S.L.B. Govt. H.S. School, Nagercoil</td>
<td>Govt.</td>
<td>Boys</td>
<td>30</td>
</tr>
</tbody>
</table>

Total number of respondents = 300

4.10. DATA COLLECTION

There are three Educational Districts in Kanyakumari District. The various high schools, both private and government, are distributed almost equally among the three Educational Districts. The investigator made a survey of the private coaching centres for the Tenth standard failed students in Kanyakumari District and the approximate number of students enrolled in them during June 1993. Majority of these
students join the private coaching centres located in Nagercoil, Thuckalay, Monday Market, Karungal and Marthandam. Among these centres, Titus Tutorial, Nagercoil; Sahaya Matha Tutorial, Nagercoil; National Tutorial, Monday Market; Lyceum Tutorial, Thuckalay; Unique Tuition Centre, Karungal and Vijaya Tutorial, Martandam are the prominent ones. Totally there are more than 50 private coaching centres spreading throughout the district.

The investigator has approached the principals of these private coaching centres in advance to conduct the investigation and asked them to arrange 20 to 30 students in one group.

It required two sessions to administer the various research tools. On the first day the test of intelligence, self-concept and achievement motivation were administered. The next day for the same set of students the test of numerical ability, questionnaires for home climate, school climate, teacher-pupil relationship and peer relationship; and tests of comprehension in English and Tamil were administered. It took three months (June, July and August, 1993) to collect data from the randomly selected 1015 respondents.

The Headmasters of the higher secondary schools were contacted in person and permission sought in advance to conduct the investigation on the randomly selected 300 Tenth standard passed
students, but studying in Eleventh standard. This investigation was conducted during the months October and November, 1993. After collecting the data, the research tools were scored and the data analysed.

4.11. PROPOSED STATISTICAL TECHNIQUES

The following statistical techniques are used to test the proposed null hypotheses:

i. Percentage

ii. Product moment co-efficient of correlation.

To measure to what extent two variables are related and to what extent variations in one variable go with variations in the other.

\[
\begin{align*}
r & = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} \\
& \text{where}
\end{align*}
\]

\[\begin{align*}
\Sigma X & = \text{sum of the X scores} \\
\Sigma Y & = \text{sum of the Y scores} \\
\Sigma X^2 & = \text{sum of the squared X scores} \\
\Sigma Y^2 & = \text{sum of the squared Y scores} \\
\Sigma XY & = \text{sum of the products of paired X and Y scores} \\
N & = \text{number of paired scores}
\end{align*}\]

(John W. Best, July 1995, page 391)

iii. Analysis of variance (ANOVA)

To test the significance of the difference among means of a number of different groups
The ratio between two estimates of the population variance

\[ F = \frac{\sigma^2_{\text{Between groups}}}{\sigma^2_{\text{Within groups}}} \]

(Y.P. Aggarwal, 1988, page 240)

iv. **t-test:** To find the significance of difference between two means

Critical ratio \[ t = \frac{M_1 - M_2}{SE_d} \]

\( M_1 \) and \( M_2 \) are the means to be compared.

\( SE_d \) = Standard error of mean difference.

(Y.P. Aggarwal, 1988, p.184)

### 4.12. CONCLUSION

After scoring, the data had been tabulated and subjected to suitable statistical analysis for testing the proposed null hypotheses.