Chapter - 7
CHAPTER VII

SUMMARY OF CONCLUSIONS AND SUGGESTIONS

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7.1 Introduction

The present research problem was multi-faceted and multi-dimensional having three phases and each phase had various independent variables. The major question addressed was whether metalinguistic ability had any influence upon the reading comprehension of the first graders. Over and above, this major question, the exploratory studies had been undertaken in first two phases. Now these would be summarized in nutshell.

7.2 Phases of the Research, Variables and Designs

There were three phases of the study, out of which the first two studies were exploratory and corroborative to the third phase which was a major study.

The first phase was concerned with the conservation ability as a dependent variable while the three independent variables were parent's education, SES and sex, each acting at two levels.
The research design appropriate for the above study was invoked and it was 2x2x2 factorial design with 16 pupils in each cell. Thus 128 pupils of Std. 1 were participated in the study.

The instruments employed in this study was the Piagetian tasks for measuring conservation. Four tasks representing number, volume, length and weight were used and each was of six mark. Thus the dependent variable of conservation was of 24 marks.

SES and parent's education were assessed by employing standardized inventory and the data sheet respectively.

These data were collected at the beginning of the year i.e. June, 1991 and they were analyzed. The conclusions would be dealt with at the later stage.

The second phase was carried out to ascertain whether conservation ability was a causative variable for the development of metalinguistic abilities. For this cross-lag correlational technique was employed.

The measurement of conservation and metalinguistic abilities were carried out at the beginning and at the end of the year.
Only 30 children were randomly selected for correlational study. Cross-lag correlations were found out between conservation at first testing and metalinguistic abilities at second testing. Similarly cross-lag correlations were found out between conservation at second testing and metalinguistic abilities at first testing.

The conclusions would be dealt with at the later stage.

The third phase of the research had a major objective. It was carried out to ascertain whether metalinguistic abilities had any effect upon the reading comprehension of the children at the end of the year. Conservation ability and sex were also incorporated into the research design to maximize variation so that the full impact of metalinguistic ability could be ascertained accurately.

The above three independent variables acted at two levels each in 2x2x2 factorial design using 11 subjects per cell.

In both the second and third phases, conservation, metalinguistic abilities and the reading comprehension tests had been employed. The conservation tasks were selected from standard tasks of Piaget and the rest of
the tests had been constructed scientifically by finding out difficulty values and discrimination values by employing Kelley's 27% method.

7.3 **Conclusions of the Research**

Before the conclusions are cited, a quick look at the various F-ratios and correlations would be most appropriate. For this, the data are provided in Table 7.1 as a ready reference. The table is given below.
Table 7.1: End Products of the Research

<table>
<thead>
<tr>
<th>Phase</th>
<th>Independent variable</th>
<th>Dependent variable</th>
<th>Values of F/r</th>
<th>Significance level</th>
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<tbody>
<tr>
<td>I</td>
<td>Parent's SES</td>
<td>A Conservation</td>
<td>113.68</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Parent's Education</td>
<td>B &quot;</td>
<td>35.70</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Sex</td>
<td>C &quot;</td>
<td>18.88</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>A x C</td>
<td>&quot;</td>
<td>7.80</td>
<td>.01</td>
</tr>
<tr>
<td>II</td>
<td>Conservation and PA</td>
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<td>.87</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Conservation and WA</td>
<td></td>
<td>.51</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Conservation and SA</td>
<td></td>
<td>.71</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Conservation and PrA</td>
<td></td>
<td>.73</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Cross-lag r</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conservation and PA</td>
<td>1st and 2nd testing</td>
<td>.92</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Conservation and WA</td>
<td>&quot;</td>
<td>.89</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Conservation and SA</td>
<td>&quot;</td>
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<tr>
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<td>Conservation and PrA</td>
<td>&quot;</td>
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</tr>
<tr>
<td></td>
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<td>2nd and 1st testing</td>
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<td>NS</td>
</tr>
<tr>
<td></td>
<td>Conservation and WA</td>
<td>&quot;</td>
<td>.39</td>
<td>NS</td>
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<td></td>
<td>Conservation and SA</td>
<td>&quot;</td>
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<td>Conservation and PrA</td>
<td>&quot;</td>
<td>.27</td>
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<tr>
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<td>Metalinguistic Ability</td>
<td>A Reading Comprehension</td>
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<tr>
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<td>Conservation Ability</td>
<td>B Comprehension</td>
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<td></td>
<td>Sex</td>
<td>C Scores</td>
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<td>.05</td>
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<tr>
<td></td>
<td>A x B</td>
<td></td>
<td>7.13</td>
<td>.01</td>
</tr>
</tbody>
</table>
7.3.1 Conclusions of the First Phase

(1) The children of High SES achieved better conservation scores than those of Low SES. The significant difference of 4.66 was found at .001 level.

(2) The children having Parent's High Education achieved better conservation scores than their counterparts. The significant difference of 2.41 was found at .01 level.

(3) The girls achieved better conservation scores than boys. The significant difference of 1.75 was found at .01 level.

(4) There was a significant interaction between Parent's SES and sex. Girls of high SES achieved better. Moreover, in the second rank, boys of high SES did better than all the children having low SES.

Thus, conservation was a crucial variable. Component of variance of first phase was also carried out.

(1) Parent's SES contributed to conservation scores to the extent of 37.14 %. This was the highest contribution. Therefore it was considered to be the strong predictor of conservation.
(2) The next in rank was a variable of parent's education which contributed 28.48 percent to the total variance.

(3) Sex contributed 21.95 which was considered no less.

(4) Parent's education X Sex interaction contributed 12.43% to the total variance.

The first phase helped to choose variables for the third phase. Accordingly, conservation and sex were selected in addition to metalinguistic ability for the third phase of the research.

7.3.2 Conclusions of the Second Phase

The second phase was concerned with the correlational studies between conservation and the different scores of metalinguistic abilities. Secondly, it also examined conservation ability as a causative variable for metalinguistic ability. The conclusions are:

(1) There was a significant correlation between CA and PA. The value of \( r \) was .87 which was significant at .01 level.

(2) There was a significant correlation between CA and WA at .01 level. The value of \( r \) was .51 which was significant at .01 level.
(3) There was a significant conservation between CA and SA at .01 level. The value of r was .71 significant at .01 level.

(4) There was a significant correlation between CA and PrA. The value of r was .93 which was significant at .01 level.

The second study related to cross-lag correlation between first testing of conservation and second testings of different metalinguistic scores. The following cross-lag correlations were found which were significant at .01 level. This established that conservation was a causative factor for metalinguistic abilities.

Cross-lag r:

<p>| | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>CA and PA</td>
<td>.92</td>
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<td>.88</td>
</tr>
<tr>
<td>CA and PrA</td>
<td>.90</td>
</tr>
</tbody>
</table>

Theoretically, cross-lag correlations between CA at first testing and metalinguistic abilities at second testing should be more than those correlations between metalinguistic abilities at first testing and conservation at second testing. The investigator confirmed these which can be seen from the above Table 7.1.
7.3.3 Conclusions of the Third Phase

The third phase was basically related with the question whether metalinguistic ability had any impact on the reading comprehension of the first graders. As was seen in the second phase that conservation was the causative factor for metalinguistic ability, she also incorporated the conservation as an independent variable in the third phase. The conclusions are as under:

(1) The pupils having high metalinguistic ability achieved better comprehension scores than their counterparts. The significant difference of 2.57 between high and low metalinguistic ability was significant at .01 level.

Also it contributed 31.56 per cent contribution to the total variance of dependent variable. It was the second strong predictor of reading comprehension after conservation.

(2) The pupils having high conservation achieved better comprehension scores than their counterparts. The significant difference of 6.70 was significant at .001 level.

It contributed 41.98 per cent to the total
variance. It was the strongest predictor of reading comprehension of the first graders.

(3) Boys achieved better than girls. The difference of 1.02 was significant at .05 level. It contributed 10.59 per cent to the total variance of reading comprehension.

It was considered to be a weak predictor of reading comprehension of the first graders.

(4) Metalinguistic ability and conservation interacted in producing significant differences in the interaction cells at .01 level.

It contributed 15.87 per cent to the total variance and it was a third predictor of reading comprehension of the first graders.

7.4 Implications of the Study

The research was a novel one in that both the variables of metalinguistic ability and the conservation of the first graders were taken up for the first time in India. Secondly none would have heard of metalinguistic ability by name, though they may be pursuing them unknowingly.
The aggregate message of the research for the teacher would be that he/she must take the maximum use of conservation and metalinguistic components in teaching reading to the first graders.

Secondly, in preprimary schools, the conservation tasks should be introduced so that the children know something about them. By the time they come to the first grade, they would be equipped with ample skills of metalinguistic ability.

Theoretical considerations of conservation and metalinguistic ability should form the content for training institutions for teachers.

7.5 Suggestions

There are many issues remained to be solved, particularly of the variables of conservation and metalinguistic ability. These may be taken up in future. Some of them which seem most urgent are as under:

(1) An inquiry into the extent and pattern of growth of conservation ability of the children of ages 4, 5, 6 and 7 of the state of Gujarat.
(2) An investigation into the impact of training conservation in children upon their metalinguistic skills.

(3) An experimental study of the impact of metalinguistic skills upon the reading achievement of the first graders.

(4) An "ex post facto" study of the interactions in reading in grades two and three with reference to their conservation and metalinguistic ability.