CHAPTER-IV

RESULT AND DISCUSSION
CHAPTER-4

RESULT AND DISCUSSION

4.0 Effects of Orientation in theories of Concept Attainment Model and Advance Organizer Model on Experimental Group-I and Experimental Group-II in terms of their gain in Achievement Scores.

4.1 Effects of Orientation in theory of Concept Attainment Model on Experimental Group-I:

As per experimental design the Pre-Test of Experimental Group–I on Theory Check-up of Concept Attainment Model was administered before the Orientation of Concept Attainment Model. After the Orientation phase of Concept Attainment Model, the Post-Test of Experimental Group–I was done by the same Theory Check-up. The results are presented in tabular form as below:

**TABLE 4.1**

Showing the Means, Pooled S.D., S.E_{D}, and ‘t’ value of Experimental Group–I (C.A.M. Group) on Theory Check-up at Pre and Post-Orientation tests:

<table>
<thead>
<tr>
<th>Values → Treatment</th>
<th>N</th>
<th>Mean</th>
<th>Pooled S.D.</th>
<th>S.E_{D}</th>
<th>‘t’</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>8</td>
<td>8.25</td>
<td>2.796</td>
<td>1.398</td>
<td>5.543**</td>
<td>p &lt; 0.01</td>
</tr>
<tr>
<td>Post-test</td>
<td>8</td>
<td>16.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** = Significant at 0.01 level
The above table reveals that the mean scores of Experimental Group-I on Theory Check-up are 8.25 and 16.0 at Pre and Post-test respectively whereas Pooled S.D. value is found to be 2.796. This table also shows that ‘t’ value of Mean scores at Pre and Post level test is 5.543. The table value of ‘t’ with df = 15 is reported to be 2.95 at 0.01 level. It implies that there is significant difference in the mean scores of Experimental Group-I on Theory Check-up of Concept Attainment Model at Pre and Post-test level. It means that after Orientation Experimental Group-I (C.A.M. group) has better achieved the theory of Concept Attainment Model than before.

4.2 Effect of Orientation in theory of Advance Organizer Mode on Experimental Group-II:

Similarly the Theory Check-up of Advance Organizer Model was administered on Experimental Group-II before the Orientation of Advance Organizer Model. After the Orientation phase, the Post-test of Experimental Group-II by the same Theory Check-up was also done. The results are presented in tabular form as below:

| Table 4.2 |
|---|---|---|---|---|
| Values → | N  | Mean | Pooled S.D. | S.E_{D} | ‘t’ | Significance |
| Pre-test  | 8  | 8.125| 2.341 | 1.1705 | 6.407** | p < 0.01 |
| Post-test | 8  | 15.625|  |  |  | |

** = Significant at 0.01 level

141
The above table shows that the mean scores of Experimental Group-II on Theory Check-up at Pre and Post Orientation tests are 8.125 and 15.625 respectively whereas pooled S.D. value is found to be 2.341. The table also shows that the calculated 't' value of scores at Pre and Post level test is 6.407. The table value of 't' with df = 15 is reported to be 2.95 at 0.01 level. It implies that there is significant difference in the mean scores of Experimental Group-II on Theory Check-up of A.O.M. at Pre and Post tests. It means that the Experimental Group-II (A.O.M. Group) has gained significantly much about the content and theory of Advance Organizer Model.

4.3 Effect of Concept Attainment Model (as teaching strategy) on Opinions (Reactions) of Student-Teachers:

Before the treatment phase the researcher has administered the concerning Reaction Scale (prepared by Passi and Sansanwal) on Experimental Group-I to find out the opinion about Concept Attainment Model. After the Pre-Test the Student-Teachers of Experimental Group-I were subjected to treatment. During the Treatment phase, the researcher demonstrated the three lessons of Chemistry subsequently through Concept Attainment Strategy before the Experimental Group-I. After demonstration, all the Student-Teachers were given opportunity to practice ten lessons in peer group follows by feed-back by their peer student-teachers. After the treatment phase (i.e. training of C.A.M.), administration of respective Reaction Scale was done on Experimental Group-I (C.A.M. Group). The mean
scores pooled, S.D., S.E, and 't' value of the scores at Pre and Post levels were computed. The results are given in the following table:

**TABLE 4.3**

Showing Means, Pooled S.D., S.E, and ‘t’ value of Experimental Group-I (C.A.M. Group) on Reaction Scale at Pre and Post-treatment level.

<table>
<thead>
<tr>
<th>Values →</th>
<th>N</th>
<th>Mean</th>
<th>Pooled S.D.</th>
<th>S.E</th>
<th>‘t’</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment level</td>
<td>8</td>
<td>22.0</td>
<td>4.031</td>
<td>2.015</td>
<td>4.094**</td>
<td>p &lt; 0.01</td>
</tr>
<tr>
<td>Post-treatment level</td>
<td>8</td>
<td>30.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** = Significant at 0.01 level

The above table shows that the mean scores of Experimental Group-I on Reaction Scale are 22.0 and 30.25 at Pre and Post level tests respectively. Whereas Pooled S.D. value is found to be 4.031. The table also shows that calculated ‘t’ value is 4.094. The table value with df = 15 is reported to be 2.95 at 0.01 level. It implies that there is significant difference in the mean scores of Experimental Group-I on Reaction Scale at Pre and Post-treatment stage. Hence, the hypothesis No. 1 that the ‘Student-Teachers trained through Concept Attainment Model do not change their opinion towards the model as measured through concerning Reaction Scale is rejected and hence the
alternate hypothesis is established. It means that the Experimented Group-I (C.A.M. Group) have changed their opinion favourably regarding the Concept Attainment Model.

Passi, Singh and Sansanwal (1985) also found that training in Concept Attainment Model did bring significant favourable change in Student-Teacher’s reaction towards Concept Attainment Model and Inquiry Training Model. Thus, the findings of the present experiment has been supported by the research findings of the experiment conducted previously. Hence it has been proved that Concept Attainment Model is an effective teaching strategy which is liked by most of the teachers.

4.4 Effect of Concept Attainment Model (C.A.M.) on Student-Teachers in respect of their Teaching Effectiveness:

To find out the effect of Concept Attainment Model training on Experimental Group-I, the administration of Teacher Rating Scale (R.C. Deva) has been done at Pre and Post-treatment levels. The means of teacher effectiveness scores at both levels were computed. The 't' value was computed to find out the significance of difference between the means of teacher’s effectiveness scores at pre and post-treatment level. The summary of the results is presented as below:

### TABLE 4.4

Showing significance of Difference Between Teacher Effectiveness Scores of Experimental Group-I (C.A.M. Group) at Pre and Post-Treatment Stages:

<table>
<thead>
<tr>
<th>Values → Treatment</th>
<th>N</th>
<th>Mean</th>
<th>Pooled S.D.</th>
<th>S.E.</th>
<th>‘t’</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-treatment level</td>
<td>8</td>
<td>53.0</td>
<td>5.428</td>
<td>2.714</td>
<td>3.0397**</td>
<td>p &lt; 0.01</td>
</tr>
<tr>
<td>Post-treatment level</td>
<td>8</td>
<td>61.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** = Significant at 0.01 level

The Table 4.4 shows that the Mean scores of Experimental Group-I on Teacher Rating Scale are 53.0 and 61.25 at Pre and Post-test levels respectively, whereas pooled S.D. value is found to be 5.428. The table also shows that calculated ‘t’ value is 3.0397. The table value of ‘t’ with df=15 is 2.95 at 0.01 level. Hence, the hypothesis No.2 is rejected and its alternate hypothesis is established. It means that there is significant difference in the mean scores of Experimental Group-I on Teacher Rating Scale at pre and post-treatment stage. In other words, Student-Teachers trained by Concept Attainment Model improve their teaching effectiveness as measured by Teacher Rating Scale. It means that change in teaching
effectiveness of Student-Teachers of Experimental Group-I is due to the training in Concept Attainment Model and not by chance.

Das (1986)\textsuperscript{1} concluded that Concept Attainment Model is an effective strategy in developing the teaching competencies of pre-service Student-Teachers. Thus the results of previous research substantiates the results of present research. Hence, the training in Concept Attainment Model brings the desirable change in teaching effectiveness. In other words, the Concept Attainment Model may be considered as one of the effective training strategy for teachers.

\textbf{4.5 Effect of Advance Organizer Model (a teaching strategy) on Student-Teachers in respect of their Opinions (Reactions):}

Before the treatment phase the researcher has administered the concerning Reaction Scale (self-prepared) or Experimental Group-II to find out the opinion about Advance Organizer Model. After the pre-test the Student-Teachers of Experimental Group-II were subjected to treatment. During the treatment phase the researcher demonstrated the teaching of the three lessons of chemistry one by one using the Advance Organizer Strategy before the experimental Group-II. After demonstration, all the Student-Teachers were given opportunity to practice ten lessons each in peer group followed by feed-back by their counter parts. After the treatment phase (i.e. training of A.O.M.), administration of corresponding Reaction Scale was done on Experimental Group-II (A.O.M. Group).

\textsuperscript{1} Das, B.M. Phil (1986) : op. cit. p. 95.
The mean scores and pooled S.D. value of the scores at pre and post-test levels were computed. The results are given in the following table:

**TABLE 4.5**

Showing Means, Pooled S.D., S.E.D. and ‘t’ value of Experimental Group-II (A.O.M. Group) on Reaction Scale at Pre and Post-treatment levels:

<table>
<thead>
<tr>
<th>Values →</th>
<th>N</th>
<th>Mean</th>
<th>Pooled S.D.</th>
<th>S.E.D.</th>
<th>‘t’</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment level</td>
<td>8</td>
<td>21.25</td>
<td>3.853</td>
<td>1.926</td>
<td>4.737**</td>
<td>p &lt; 0.01</td>
</tr>
<tr>
<td>Post-treatment level</td>
<td>8</td>
<td>30.375</td>
<td>1.926</td>
<td>4.737**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** = Significant at 0.01 level

The Table 4.5 shows that the Mean scores of Experimental Group-II on Reaction Scale are 21.25 and 30.375 at pre and post level tests respectively. Whereas pooled S.D. is found to be 3.853. The table also shows that the ‘t’ value is 4.737. The table with df = 15 is reported to be 2.95 at 0.01 level. It implies that there is significant difference in the mean scores of Experimental Group-II on Reaction Scale at pre and post-treatment stage. Hence, the hypothesis is No. 3, ‘Student-Teachers’ trained through Advance Organizer Model do not change their opinions towards the model as measured through concerning Reaction Scale’ is rejected. It means that the Experimental
Group-II (A.O.M. Group) have changed their opinion favourably regarding the Advance Organizer Model.

4.6 Effect of Advance Organizer Model (a teaching strategy) on Student-Teachers in respect of their Teaching Effectiveness:

To find out the effect of Advance organizer Model training on Experimental Group-II, in respect of Teaching-Effectiveness, the administration of Teacher Rating Scale (R.C. Deva) has been done at pre and post treatment levels. The Means of Teacher Effectiveness scores at both levels were computed. The 't' value was computed to find out the significance of difference between mean scores of Teacher Effectiveness and post treatment level. The summary of the results is presented below:

**TABLE 4.6**

<table>
<thead>
<tr>
<th>Values →</th>
<th>N</th>
<th>Mean</th>
<th>Pooled S.D.</th>
<th>S.E.D.</th>
<th>'t'</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>↓Treatment level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment level</td>
<td>8</td>
<td>50.0</td>
<td>3.995</td>
<td>1.997</td>
<td>5.132*</td>
<td>p &lt; 0.01</td>
</tr>
<tr>
<td>Post-treatment level</td>
<td>8</td>
<td>60.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** = Significant at 0.01 level

The above table shows that the Mean scores of Experimental Group-II on Teacher Rating Scale are 50.0 and 60.25 at
Pre and Post-test level respectively. Whereas pooled S.D. value is found to be 3.995. The table also shows that ‘t’ value is 5.132. The table value of ‘t’ with df=15 is reported to be 2.95 at 0.01 level. Hence, the hypothesis No.4 is rejected and its alternate hypothesis is established. It means that there is significant difference between the Mean scores of Experimental Group-II on Teacher Rating Scale at pre and post treatment stages. In other words, Student-Teachers trained through Advance Organizer Model improve their teaching effectiveness as measured by Teacher Rating Scale. It means that modifications in teaching effectiveness of Student-Teachers of Experimental Group-II is due to the training through Advance Organizer Model and not by chance.

4.7 Difference Between the Achievement Scores of Pupils under the Charge of Experimental Group-I (C.A.M. Group) and Experimental Group-II (A.O.M. Group) at Pre-Coaching Level:

To assess the effect of teaching in terms of achievement, the investigator administered Achievement Test (Self-constructed) on pupils of Class IX A and IX B, who have been taught by Experimental Group-I (C.A.M. Group) and Experimental Group-II (A.O.M. Group) separately.

The Mean achievement scores of both the groups at Pre-test stage were computed. The ‘t’ value was computed to find out the significance of difference between the Achievement scores of pupils of
both the groups at Pre-coaching level. The summary of the results is presented as below:

### TABLE 4.7

**Showing the Means, S.Ds. and 't' value of pupils on Achievement Scores under the charge of Experimental Group-I and Experimental Group-II at Pre-Coaching Stage:**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>'t'</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pupil under the charge of Experimental Group-I [Sec - IXA]</td>
<td>40</td>
<td>2.075</td>
<td>1.331</td>
<td>0.285</td>
<td>N.S.</td>
</tr>
<tr>
<td>Pupil under the charge of Experimental Group-II [Sec - IXB]</td>
<td>40</td>
<td>1.975</td>
<td>1.774</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N.S. = Not Significant.

Table 4.7 reveals that 't' value is 0.285 which is not significant. It means that there is no significant difference between pupils under the charge of Experimental Group-I and Experimental Group-II on Achievement-Test at pre coaching stage. The Mean values of Achievement Scores obtained by pupils of both the groups are 2.075 and 1.975 respectively. It shows that pupils of both groups, here equally good in respect of their achievement when they were evaluated on self-constructed Achievement-Test of Chemistry at pre-coaching stage.
4.8 Difference Between the Achievement Scores of Pupils under the charges of Experimental Group-I (C.A.M. Group) and Experimental Group-II (A.O.M.) at Post-Coaching Stage:

After the treatment phase the Student-Teachers of Experimental Group-I taught 5 lessons of chemistry to the students of IXth class using Concept Attainment approach when the teaching was over students of IXth class were given Achievement Test of Chemistry. The scoring of the answers were also done.

Similarly the Student-Teachers of Experimental Group-I taught the same lessons to another section of IXth class by Advance Organizer Model. The same Achievement test was again administered to the students of Class IX-B which were taught by Experimental Group-II. The results are presented in the following table:

**TABLE 4.8**

Showing the Mean, S.D.s, and 't' value of scores obtained by pupils on Achievement Test (self-constructed) under the charge of Experimental Group-I (C.A.M. Group) and Experimental Group-II (A.O.M. Group) at Post-Coaching Stage:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>'t'</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pupil under the charge of Experimental Group-I (Sec-IXA)</td>
<td>40</td>
<td>27.85</td>
<td>3.539</td>
<td><strong>4.401</strong></td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>Pupil under the charge of Experimental Group-II (Sec-IXB)</td>
<td>40</td>
<td>24.35</td>
<td>3.574</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** = Significant at 0.01 level
The Table No. 4.8 reveals that Mean Achievement scores of two sections of pupils (i.e. IX A and IXB) taught by Experimental Group-I and Experimental Group-II are 27.85 and 24.35 respectively. The ‘t’ value is found to be 4.401, which is significant at .01 level of confidence. Hence, the hypothesis No. 5 is hereby rejected and alternate hypothesis prevails. It means that the Achievement scores of pupils taught by Concept Attainment Model approach and the Achievement scores of pupils taught by Advance Organizer Model approach is significantly different at .01 level. The mean of Achievement scores of pupils taught by Concept Attainment approach is greater than the Mean Achievement Scores of pupils taught by Advance Organizer approach. It signifies that Concept Attainment Model strategy of teaching brings more learning and achievement on the part of pupils as compared to the Advance Organizer Strategy of teaching. Hence C.A.M. is found to be more effective than A.O.M.

The studies of Chitrive (1983)\(^1\), concluded that both Ausubel’s and Bruner’s strategy were superior to traditional strategy for teaching mathematical concept to eleventh grade students. The strategies of Ausubel and Bruner were equally effective in respect to student’s ability to acquire knowledge of mathematical concepts. As related to Concept transfer, Ausubel’s strategy was superior to Bruner’s strategy whereas, Bruner’s strategy was superior to Ausubel strategy in students ability to heuristic transfer.


152
Bhattacharya (1984) found that Concept Attainment Model is significantly better than Traditional Model in terms of mean gain Achievement scores of the student in a very low resource status educational institutions. Sushma (1987) concluded that Concept Attainment Model was more effective in terms of pupil’s achievement in Biological Sciences than Biological Science Inquiry Model (B.S.I.M.). Gangrade (1987) found that combination of Concept Attainment Model with Lecture Method was significantly superior to Traditional method in teaching Chemistry to Class VIII students. Kumar (1992) found that Concept Attainment Model was most effective among all three teaching model (i.e. C.A.M., I.T.M. and Traditional teaching method) in respect of cognitive development with Concept Attainment in Science of IX grade.

The studies cited above concluded that Concept Attainment Model strategy is most effective and superior to other strategies of teaching such as Ausubel’s strategy of Advance Organizer, Inquiry Training Model of Suchman and Traditional approach of teaching. Hence, the findings of the researches conducted earlier also support and substantiate the findings and results of present research.

Conclusively, it can be said that Concept Attainment

Model is most affective and suitable method of teaching as compared to several other teaching strategies.

4.9 Difference Between Pupil’s Attitude Towards Teaching Under the charge of Experimental Group I (C.A.M. Group) and Experimental Group II (A.O.M. Group) at Pre Coaching stage:

Before the coaching phase the researcher had administered the Sodhi’s Attitude Scale on Pupils of Class IX A and Class IXB. The pre-administration of Attitude Scale was done to find out the initial view of both groups in regard to teaching. After pre-administration of Attitude Scale the Student-Teachers of Experimental Group-I and Experimental Group-II took the charge of teaching to class IX-A and IX-B respectively. The Mean scores and S.D. values of the Attitude scores at Pre-test level were computed. The results are given in the following table:

**TABLE 4.9**

<table>
<thead>
<tr>
<th>Values</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>‘t’</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pupil under the charge of Experimental Group-I (Sec-I X A)</td>
<td>40</td>
<td>10.85</td>
<td>1.578</td>
<td>1.067</td>
<td>N.S.</td>
</tr>
<tr>
<td>Pupil under the charge of Experimental Group-II (Sec-I X B)</td>
<td>40</td>
<td>10.475</td>
<td>1.565</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N.S. = Not Significant

154
Table 4.9 reveals that mean values of Attitude scores of the pupils under the charge of Experimental Group I and Experimental Group II are 10.85 and 10.475 respectively. Whereas S.D. values are found to be 1.578 and 1.565 respectively. The table also shows that the calculated ‘t’ value of scores at Pre-coaching stage is 1.067. The table value of ‘t’ with df = 79 is 2.64. It implies that there is no significant difference between pupils under the charge of Experimental Group-I and Experimental Group-II on Attitude scale at pre-coaching stage. It means that pupils of both the groups have same Attitude at Pre-coaching stage.

4.10 Difference between Pupils Attitude Towards Teaching Under the charge of Experimental Group-I (C.A.M. Group* and Experimental Group-II (A.O.M. Group) at Post-coaching stage.

After the treatment phase the Student-Teachers of Experimental Group I taught 5 lessons of chemistry to the students of class IXA using Concept Attainment approach. After teaching of assigned lessons, students of IXth class were given Sodhi’s Attitude Scale. The scoring on Attitude Scale were also done.

Similarly the Student-Teachers of Experimental Group II taught the same 5 lessons to class IXB by Advance Organizer Model. The Attitude scale was again administered to the students of Class IXB which were taught by Experimental Group II. The results are presented in the following table:
TABLE 4.10

Showing the Mean, S.Ds and ‘t’ value of scores obtained by pupils on Sodhi’s Attitude Scale under the charge of Experimental Group-I (C.A.M. Group) and Experimental Group-II (A.O.M. Group) of Student-Teachers at Post-Coaching Level:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>‘t’</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pupil under the charge of Experimental Group-I [Sec-IX A]</td>
<td>40</td>
<td>38.725</td>
<td>2.8606</td>
<td>2.831**</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>Pupil under the charge of Experimental Group-II [Sec-IX B]</td>
<td>40</td>
<td>36.925</td>
<td>2.826</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** = Significant at .01 level.

The above table shows that Mean Attitude scores of two sections of pupils (i.e. IXA and IXB) taught by Experimental Group I and Experimental Group II are 38.725 and 36.925 respectively. The ‘t’ value is found to be 2.831 which is significant at .01 level of confidence. Hence the hypothesis No. 6 is hereby rejected and alternate hypothesis is established. It means that the Attitude of pupils taught by Concept Attainment Model and the attitude of pupils taught by Advance Organizer Model is significantly different at .01 level at Post coaching stage. The mean Attitude of pupils taught by Concept Attainment Model is greater than the mean Attitude value of pupils.
taught by advance Organizer Model. It signifies that Concept Attainment Model strategy of teaching affect the Attitude of pupils more favourably than its alternate strategy of Advance Organizer Model.

Sharma (1986)\(^1\) concluded that the students of IX class (taught in Chemistry through Concept Attainment Model) have responded favourably towards Concept Attainment Model. Sushma (1987)\(^2\) had found that pupils of VIIIth class had more favourable attitude towards Concept Attainment Model than the Biological Science Inquiry Model when taught through both the models.

The studies cited above are similar to the findings of the present study. It proves that students have more favourable Attitude towards Concept Attainment Strategy than Advance Organizer Model and other several Teaching Models as well.

4.11 MAJOR FINDINGS:

1. The Student-Teachers of Experimental Group I, who have received the training in Concept Attainment Model, have significantly favourable opinions towards the Model.

2. The Student-Teachers of Experimental Group I trained by Concept Attainment Model gained significantly in regard to teaching effectiveness as measured through Teacher Rating Scale.

3. The Student-Teachers of Experimental Group II trained by Advance Organizer Model have significantly favourable opinions towards the Model.

4. The Student-Teachers of Experimental Group II trained by Advance Organizer Model gained Teaching Effectiveness significantly.

5. The pupils taught by Student-Teachers (C.A.M. Group) achieved significantly more than the pupils taught by Student-Teachers (A.O.M. Group).

6. The pupils who were taught by Student-Teachers of Experimental Group I show significantly more favourable Attitude towards teaching in comparison to the pupils who were taught by Experimental Group II.

4.12 THE IMPLICATIONS:

The present study has helped to seek the answers to the questions put as objectives of the study. The answers have educational implications to the classroom teaching-learning process. Concept Attainment Model and Advance Organizer Model were found more effective in terms of their effect on pupil’s achievement in Chemistry. The models approach to teaching may be recommended for the teachers in Indian schools to enhance the student’s achievement in the subject.

The pupil’s favourable attitude towards Concept Attainment Model and Advance Organizer Model implies that teaching
models may be used in teaching Chemistry in Indian schools to secure students interest and attention in the classroom.

The model lesson plans given in the Appendices (11 and 13) may suitably be helpful for the teachers desirous of switching over to these teaching models in their classroom situation.

The results indicate that model approach to teaching of Chemistry may be introduced for the benefit of the students. It further, implies that In-service and Pre-Service Teacher’s Training Programme may include training in Models of Teaching also. The models approach may be helpful for the subject teachers to achieve the objectives of teaching. The Model approach to teaching is more interactive, motivating, lively and interesting for the classroom learners.

So far as relative effectiveness in terms of achievement is concerned the Concept Attainment Model of teaching is found to be superior to Advance Organizer Model. Hence, Concept Attainment Model may be preferred to Advance Organizer Model for teaching of Science subjects.

The students show more favourable attitude towards Concept Attainment approach on comparison to Advance Organizer approach in the classroom situation. Hence the teachers should most often adopt the Concept Attainment strategy of teaching to make the class-climate more convenient congenial for the learners.
In the light of results obtained, findings drawn in the course of the present study, some suggestions regarding further researches in the field of ‘Models of Teaching’ are being given below:

1. The study should be replicated for other subjects to test the generality of conclusions regarding the Concept Attainment Model and Advance organizer Model.

2. The study can be replicated on the sample of in-service teachers for the verification of the results and arriving at more generalised and reliable results.

3. The relative effectiveness of Concept Attainment Models and other Information Processing Model may be assessed by undertaking the further researches in future.

4. Similar type of studies may be conducted with other Models of Teaching and other subjects, under the strict experimental control.

5. The other studies may be undertaken to identifying suitability of various Information Processing Models with respect to student’s achievement, and attitudinal change.