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FINDINGS, CONCLUSIONS AND SUGGESTIONS

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CHAPTER VI

FINDINGS, CONCLUSIONS AND SUGGESTIONS

6.1 Study in Retrospect

The present study has been designed to determine the effectiveness of certain Information Processing Models on Achievement in English of students at Secondary level. This chapter deals with the major findings that emerged from the study and its implications, an overview of the procedure followed in the study, a summary of important findings, recommendations for further improvement and some suggestions for further research are presented herewith.

6.1.1 Restatement of the Problem

The present study was undertaken with the objective of testing the effectiveness of certain Information Processing Models on Achievement in English of students at Secondary level. Therefore the topic of the study is entitled “EFFECTIVENESS OF CERTAIN INFORMATION PROCESSING MODELS ON ACHIEVEMENT IN ENGLISH OF STUDENTS AT SECONDARY LEVEL”.

6.1.2 Hypotheses of the study

The following hypotheses were formulated in the present study.

1. There will be significant difference between student’s Achievement in English at Secondary level taught through the selected Information Processing Models (individual and combined) with Activity Oriented Method for the total sample and the relevant sub-samples.

2. There will be significant difference between students’ Achievement in English at Secondary level taught through each of the select Information Processing Models when compared with the other for the total sample and relevant sub-samples.
3. There will be significant difference between students’ Achievement in English at Secondary level taught through the combination of the select Information Processing Models and those through each of the Information Processing Models as far as the total sample and relevant sub samples are concerned.

4. There will be significant difference between student’s Achievement in English at Secondary level taught through selected Information Processing Models (individual and combined) with Activity -Oriented Method under the categories of objectives such as knowledge, comprehension, application, analysis, synthesis and evaluation for the total sample.

5. There will be significant difference between student’s Achievements in English at Secondary level taught through each of the Information Processing Models selected with the other under the categories of objectives such as knowledge, comprehension, application, analysis, synthesis and evaluation for the total sample.

6. There will be significant difference between student’s Achievement in English at Secondary level taught through the Information Processing Models (combined) and through each of the Information Processing Models selected under the categories of objectives such as knowledge, comprehension, application, analysis, synthesis and evaluation for the total sample.

7. There will be significant difference between creativity in the English Language of students at Secondary level taught through selected Information Processing Models (individual and combined) with Activity Oriented Method for the total sample.

8. There will be significant difference in creativity in the English Language of students at Secondary level when taught through the Information Processing Models separately as for the total sample.

9. There will be significant difference in creativity in the English Language of students at Secondary level taught through the Information Processing
Models (combined) and the models separately so far as the total sample is concerned.

10. There will be significant difference in interest in the English of students at Secondary level when taught through the select Information Processing Models (individual and combined) and when taught through Activity Oriented Method for the total sample.

11. There will be significant difference in students’ interest in English at Secondary level when taught through the Information Processing Models (individual and combined) as for the total sample.

12. There will be significant difference in student’s Interest in English at Secondary level when taught through the Information Processing Models combined and when taught through the same individually as for the total sample.

6.1.3 Objectives of the study

The major objectives of the study are:-

1. To find the effectiveness of selected Information Processing Models (individual and combined) when compared with Activity Oriented Method on student’s Achievement in English at Secondary level for the total sample and relevant sub samples.

2. To find the comparative effectiveness of each of the Information Processing Models on student’s Achievement in English at Secondary level for the total sample and relevant sub samples.

3. To find the comparative effectiveness of Information Processing Models (combined) with each of the Information Processing Models separately on student’s Achievement in English at Secondary level for the total sample and relevant sub samples.

4. To find the comparative effectiveness of selected Information Processing Models (individual and combined) over Activity Oriented Method on Achievement in English of students at Secondary level with respect to the
5. To find the comparative effectiveness of each of the Information Processing Models over the other on student’s Achievement in English at Secondary level with respect to the categories of objectives such as knowledge, comprehension, application, analysis, synthesis and evaluation for the total sample.

6. To find the comparative effectiveness of Information Processing Models (combined) and that of the same separately on student’s Achievement in English at Secondary level with respect to the categories of objectives such as knowledge, comprehension, application, analysis, synthesis and evaluation for the total sample.

7. To find the comparative effectiveness of select Information Processing Models (individual and combined) over the Activity Oriented Method on language Creativity in the English language of students at Secondary level as for the total sample.

8. To find the comparative effectiveness of each of the Information Processing Models selected on Language Creativity in the English language of students at Secondary level for the total sample.

9. To find the comparative effectiveness of Information Processing Models (combined) with that of the models individually on Creativity in the English language of students at Secondary level for the total sample.

10. To find the comparative effectiveness of selected Information Processing Models (individual and combined) over the Activity Oriented Method on Interest in English language of students at Secondary level for the total sample.

11. To find the comparative effectiveness of each of the Information Processing Models with the other on interest in English language of students at Secondary level for the total sample.
12. To find the comparative effectiveness of Information Processing Models (combined) with each of the Information Processing Models separately on Interest in English language of students at secondary level for the total sample.

6.1.4 Methodology in Brief

The investigator adopted Experimental method to conduct the present study. The design selected was pre-test – post-test non – equivalent group design (Best & Kahn, 2007). For experiment, the investigator selected five groups each consisting of 80 students – four experimental groups and one control group. Out of the four experimental groups, first three were taught through the selected Information Processing Models such as Advance Organiser Model, Synectics Model and Inductive Thinking Model respectively and the fourth one was taught using all the three selected Models combined. The control group was taught through Activity Oriented Method. The investigator used different tools such as Lesson Transcripts based on Advance Organiser Model, Synectics Model, Inductive Thinking Model and Activity Oriented Method, Achievement Test in English for standard IX, Language Creativity Test, and Language Interest Inventory. All the tools are used as pre-test and post-test. The scores obtained were clearly edited, classified, tabulated and analyzed using relevant statistical techniques, so as to have a clear picture of the obtained data and interpretations were made accordingly. The data collected for the present study was analyzed to throw light on the objectives of the study.

6.2 Major Findings of the Study

The major findings that have been emerged from the analysis are presented below.

The effectiveness of certain Information Processing Models (individual and combined) with Activity Oriented Method on Achievement in English of students at Secondary level for total sample and relevant sub samples

6.2.1 The analysis of Variance of the pre-test and post-test scores showed that there was no significant difference between the means of pre-test scores of the
experimental and control groups, \((F_x = 0.36, p>0.01 \text{ df (4,395)})\). But there was significant difference between the means of the post-test scores of the groups \((F_y = 74.03, p< 0.01 \text{ df (4,395)})\), which is significant at 0.01 level of significance. This indicates that the groups under study differ significantly in their post-test achievement scores.

6.2.2 The analysis of covariance of the pre-test and post-test scores showed that the difference between the means of the post-test scores of the groups differ significantly after they have been adjusted the initial differences of the pre-test \((F_{yx} = 77.37, p<.01)\).

6.2.3 When comparing the effectiveness of selected Information Processing Models (individual) with Activity Oriented Method, it was found that all the selected Information Processing Models were, comparatively more effective than Activity Oriented Method on Achievement in English of students at Secondary level except Advance Organiser Model. There was no significant difference existing between the adjusted post-test scores of Achievement in English of students treated with Advance Organiser Model and Activity Oriented Method. (The F value obtained was 1.36 with degrees of freedom (4, 395) for AOM and AM, 28.44 with degrees of freedom (4, 395) for SM and AM, and 3.71 with degrees of freedom (4, 395) for ITM and AM). The adjusted mean of post-test scores of Achievement in English of students treated with AOM is 16.60, SM is 25.71, ITM is 18.26 and AM is 14.05. Hence it was found that the students who learned through Information Processing Models have better Achievement than those studied through Activity Oriented Method.

6.2.4 The calculated F value between AM and IPM-c is 55.65 with degrees of freedom (4, 395), which is significant at 0.01 level of significance as it exceeds the table value of F (2.4 at 0.05 level and 3.37 at 0.01 level) with degrees of freedom (4, 395). Thus it was concluded that the difference between the adjusted post-test scores on Achievement in English of students treated with AM and IPM-c is significant. The adjusted means of post-test scores of Achievement in English of students treated with AM is 14.05 and that of IPM-c is 30.36 and so it is concluded
that the IPM-c is comparatively superior to AM in enhancing the Achievement in English of students at Secondary level.

6.2.5 The boys and girls differ significantly on the effectiveness of certain Information Processing Models over Activity Oriented Method in enhancing Achievement in English of students at Secondary level except Inductive Thinking Model. (The obtained F value for the interaction of gender of students and effectiveness of each Information Processing Models over AM for the post-test scores of Achievement in English were 5.78 and 10.48 with degrees of freedom (1, 156) respectively for AOM and SM over AM). Since the obtained F value was 0.48 with degrees of freedom (1, 156), the interactive effect of gender and effectiveness of ITM over AM on Achievement in English were not significant.

6.2.6 The boys who were treated with AOM is reliably superior to the boys and girls treated with AM, as the mean Achievement in English of boys treated with AOM is 17.63. But the mean difference between the Achievement of boys treated with AOM did not show any significant difference with that of girls treated with AOM in enhancing Achievement in English as the mean Achievement of girls treated with AOM is 15.78. The mean Achievement of boys and girls treated with AM are 13.08 and 14.83. Hence the boys and girls treated with AM did not show any significant difference in the Achievement in English. The girls treated with AOM is reliably superior to the boys treated with AM. But this group is reliably differing with the Achievement treated with AM.

6.2.7 The mean score of Achievement in English of boys treated with SM is 28.85 and that with AM is 13.08. Also the mean score of Achievement in English of girls treated with SM is 22.65 and that with AM is 14.83. It shows that the boys treated with SM is reliably superior to the boys, and girls, treated with AM and girls treated with SM in Achievement in English. The girls treated with SM is reliably superior to the boys and girls treated with AM.

6.2.8 The calculated F ratio of Achievement in English of students for the interaction of gender of students and effectiveness of IPM-c over AM is 4.53 with
degrees of freedom (1, 156) and hence the effect of gender difference on the effectiveness of IPM-c over AM is significant.

6.2.9 The mean score of Achievement in English of boys treated with IPM-c is 31.725 and that with AM is 13.08. Also the mean score of Achievement in English of girls treated with IPM-c is 28.8 and that with AM is 14.83. Hence the boys treated with IPM-c is reliably superior to the boys and girls treated with AM and the girls treated with IPM-c on enhancing the Achievement in English. The girl treated with IPM-c is reliably superior to the boys and girls treated with AM in Achievement in English. Also the boys and girls treated with AM did not show any significant difference in the Achievement in English.

6.2.10 The obtained F value for the interaction of management of school and effectiveness of each selected Information Processing Model for the post-test scores of Achievement in English were 23.91 with degrees of freedom (1, 156) and 19.56 with degrees of freedom (1, 156) respectively for SM and ITM over AM. The Government and Aided school students differ significantly on the effectiveness of certain selected Information Processing Models such as SM and ITM over AM on enhancing Achievement in English of students at Secondary level except AOM. Since the obtained F value for the interaction of management of school and the effectiveness of AOM over AM is 0.6 with degrees of freedom (1, 156), the interactive effect of management of school and effectiveness of AOM over AM on post-test scores of Achievement in English is not significant.

6.2.11 The mean of Achievement in English of Government school students treated with SM is 21.73 and that with AM is 14.70. Also the mean score of Achievement in English of Aided school students treated with SM is 29.78 and that with AM is 13.20. It shows that the Aided school students treated with SM is reliably superior to the Government and Aided school students treated with AM and the Government school students treated with SM and The Government school students treated with SM is reliably superior to the Government and Aided school students treated with AM on enhancing the Achievement in English. Also the Government and Aided school students treated with AM did not show any significant difference in the Achievement in English.
6.2.12 The mean of post-test scores on Achievement in English of Government school students treated with ITM is 15.23 and that with AM is 14.70. Also the mean of post-test scores on Achievement in English of Aided school students treated with ITM is 21.43 and that with AM is 13.20. It shows that the Aided school students treated, with ITM is reliably superior to the Government and Aided school students treated with AM. The Government school students treated with ITM did not show any significant difference in the Achievement in English with the Government and Aided school students treated with AM. Also the Government and Aided school students treated with AM did not show any significant difference in the Achievement in English.

6.2.13 The calculated F ratio of Achievement in English of students for the interaction of management of school and the effectiveness of IPM-c over AM is 4.53 with degrees of freedom (1, 156) and hence the effect of management difference on the effectiveness of IPM-c over AM is significant.

6.2.14 The mean of Achievement in English of Government school students treated with IPM-c is 23.30 and that with AM is 14.70. Also the mean of Achievement in English of Aided school students treated with IPM-c is 37.23 and that with AM is 13.20. Hence the Aided school students treated with IPM-c is reliably superior to the Government and Aided school students treated with AM and the Government school students treated with IPM-c in Achievement in English. The Government school students treated with IPM-c is reliably superior to the Government and Aided school students treated with AM in Achievement in English. Also the Government and Aided school students treated with AM did not show any significant difference in the Achievements in English.

6.2.15 The rural and urban school students differ significantly on the effectiveness of selected Information Processing Models over AM on enhancing Achievement in English of students at Secondary level except AOM. The obtained F value for the interaction of locality of school and each Model of teaching for the post-test scores of Achievement in English were 23.91 with degrees of freedom (1,156) and 19.56 with degrees of freedom (1,156) respectively for SM and ITM over AM. Since the obtained F value for the interaction of locality of school and the effectiveness of
AOM over AM is 0.6 with degrees of freedom (1,156), the interactive effect of locality of school and effectiveness of AOM over AM on post-test scores of Achievement in English is not significant.

6.2.16 The mean of Achievement in English of rural school students treated with SM is 21.73 and that with AM is 14.70. Also the mean of Achievement in English of urban school students treated with SM is 29.78 and that with AM is 13.20. It shows that the urban school students treated with SM is reliably superior to the rural and urban school students treated with AM and the rural school students treated with SM and the rural school students treated with AM in Achievement in English. Also the rural and urban school students treated with AM did not show any significant difference in Achievement in English.

6.2.17 The mean of post-test scores of Achievement in English of rural school students treated with ITM is 15.23 and that with AM is 14.70. Also the mean of post-test scores of Achievement in English of urban school students treated with ITM is 21.43 and that with AM is 13.20. It shows that the urban school students treated with ITM is reliably superior to the rural and urban school students treated with AM and the rural school students treated with ITM in Achievement in English. The rural school students treated with ITM did not show any significant difference in Achievement in English with the rural and urban school students treated with AM. Also the rural and urban school students treated with AM did not show any significant difference in Achievement in English.

6.2.18 The calculated F ratio of Achievement in English of students for the interaction of locality of school and the effectiveness of IPM-c over AM is 4.53 with degrees of freedom (1,156) and hence the effect of locality difference on the effectiveness of IPM-c over AM is significant.

6.2.19 The mean of Achievement in English of rural school students treated with IPM-c is 23.30 and that with AM is 14.70. Also the mean of Achievement in English of urban school students treated with IPM-c is 37.23 and that with AM is 13.20. Hence the urban school students treated with IPM-c is reliably superior to
the rural and urban school students treated with AM and the rural school students treated with IPM-c and the rural school students treated with IPM-c is reliably superior to the rural and urban school students treated with AM in Achievement in English. Also the rural and urban school students treated with AM did not show any significant difference in Achievement in English.

Comparison of the effectiveness of selected Information Processing Models with each others on Achievement in English of students at secondary level for total sample and relevant sub samples

6.2.20 It is revealed that the AOM is equally effective with ITM, whereas SM is more effective than AOM in enhancing the Achievement in English of students at Secondary level. (The obtained F value was 17.36 with degrees of freedom (4,395) for AOM and SM, 0.58 with degrees of freedom (4, 395) for AOM and ITM and the adjusted post-test scores of Achievement in English with AOM is 16.60, SM is 25.71 and ITM is 18.26).

6.2.21 The calculated F value between SM and ITM is 11.6 with degrees of freedom (4,395), which is significant at 0.01 level as it exceeds the table value of F (2.4 at 0.05 level and 3.37 at 0.01 level). Thus it was concluded that the difference between the adjusted post-test scores of Achievement in English of students treated with SM and ITM is significant. The adjusted means of post-test scores of Achievement in English of students treated SM is 25.71 and that of ITM is 18.26 and so it is concluded that the SM is comparatively superior to ITM in enhancing the Achievement in English of students at Secondary level. Thus it can be concluded that SM is superior to AOM and ITM on enhancing the Achievement in English of students at Secondary level.

6.2.22 When comparing the effectiveness of ITM with other selected Information Processing Models such as AOM and SM, it was concluded from the result that SM is found to be superior to ITM in enhancing Achievement in English of students at Secondary level. (The obtained F ratio was 11.60 with degrees of freedom (4,395) and the adjusted post-test scores of students treated with SM is 25.71 and that with ITM is 18.26). It was also concluded that ITM is equally
effective with AOM in enhancing the Achievement in English of students at secondary level as the obtained F value is 0.58 with degrees of freedom (4,395).

6.2.23 When comparing the Achievement in English of boys and girls at Secondary level treated with AOM and with other selected Information Processing Models such as SM and ITM, it can be concluded that the difference in the effectiveness of AOM with SM on enhancing the Achievement in English based on gender of students is significant and that with ITM is not significant. (The obtained F ratios of Achievement in English of students for the interaction of gender of students and effectiveness of each information processing models each other are 4.21 with degrees of freedom (1,156) and 1.371 with degrees of freedom (1,156) respectively for SM and ITM).

6.2.24 The mean of Achievement in English of boys treated with AOM is 17.63 and that with SM is 28.85. Also the mean score of Achievement in English of girls treated with AOM is 15.78 and that with SM is 22.65. Hence the boys treated with SM is reliably superior to the boys and girls treated with AOM and the girls treated with SM is reliably superior to the boys and girls treated with AOM in Achievement in English. Also the boys and girls treated with AOM did not show any significant difference in Achievement in English.

6.2.25 Since the calculated F ratio of post-test scores of Achievement in English of students for the interaction of gender of students and the effectiveness of SM over ITM is 7.68 with degrees of freedom (1,156), it can be concluded that the difference in the effectiveness of SM with ITM on enhancing the Achievement in English of students at Secondary level based on gender of students is significant.

6.2.26 The mean of post-test scores of Achievement in English of boys treated with ITM is 18.10 and that with SM is 28.85. Also the mean of post Test scores of Achievement in English of girls treated with ITM is 18.55 and that with SM is 22.65. Hence the boys treated with SM is reliably superior to the boy and girls treated with ITM and the girls treated with SM and the girls treated with SM is reliably superior to the boys and girls treated with ITM in Achievement in English.
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English. Also the boys and girls treated with ITM did not show any significant difference in Achievement in English.

6.2.27 When comparing the Achievement in English of Government and Aided School students at Secondary level treated with AOM and with other selected Information Processing Models such as SM and ITM, it can be concluded that the difference in the effectiveness of AOM over SM and ITM on enhancing the Achievement in English based on management of school is significant. (The obtained interactive effect of management of school and the effectiveness of AOM over SM is 27.88 with degrees of freedom (1,156) and AOM over ITM is 23.58 with degrees of freedom (1,156)).

6.2.28 The mean of post-test scores of Achievement in English of Government school students treated with AOM is 18.03 and that with SM is 21.73. Also the mean of Achievement in English of Aided school students treated with AOM is 15.38 and that with SM is 29.78. Hence it can be concluded that the Government school students treated with SM is reliably superior to the Government and Aided school students treated with AOM and the Aided school students treated with SM and the Aided school students treated with SM is reliably superior to the Government and Aided school students treated with AOM. It also shows that the Government school students treated with AOM is reliably superior to the Aided school students treated with AOM.

6.2.29 The mean of Achievement in English of Government school students treated with AOM is 18.03 and that with ITM is 15.23. Also the mean of Achievement in English of Aided school students treated with AOM is 15.38 and that with ITM is 21.43. So the Aided school students treated with ITM is reliably superior to the Government and Aided school students treated with AOM and the Government school students treated with ITM and the Government school students treated with AOM is reliably superior to the Government school students treated with ITM and Aided school students treated with AOM. Also it can be concluded that the Aided school students treated with AOM do not differ significantly to the Government school students treated with ITM in Achievement in English.
6.2.30 The calculated F ratio of Achievement in English of students for the interaction of management of school and the effectiveness of SM over ITM is 0.69 with degrees of freedom (1,156). Hence it can be concluded that the difference in the effectiveness of SM over ITM on enhancing the Achievement of students based on management of school is not significant.

6.2.31 When comparing the Achievement in English of rural and urban school students at Secondary level treated with AOM and with other selected Information Processing Models such as SM and ITM, it can be concluded that the difference in the effectiveness of AOM over SM and ITM on enhancing the Achievement in English based on locality of school is significant. (The obtained interactive effect of locality of school and the effectiveness of AOM over SM is 27.88 with degrees of freedom (1,156) and AOM over ITM is 23.58 with degrees of freedom (1,156)).

6.2.32 The mean of post-test scores of Achievement in English of rural school students treated with AOM is 18.03 and that with SM is 21.73. Also the mean of Achievement in English of urban school students treated with AOM is 15.38 and that with SM is 29.78. Hence it can be concluded that the urban school students treated with SM is reliably superior to the rural and urban school students treated with AOM and the rural school students treated with SM on enhancing the Achievement in English. The urban school students treated with SM is reliably superior to the rural and urban school students treated with AOM. It also shows that the rural school students treated with AOM is reliably superior to the urban school students treated with AOM in Achievement in English.

6.2.33 The mean of Achievement in English of rural school students treated with AOM is 18.03 and that with ITM is 15.23. Also the mean of Achievement in English of urban school students treated with AOM is 15.38 and that with ITM is 21.43. So the urban school students treated with ITM is reliably superior to the rural and urban school students treated with AOM and the rural school students treated with ITM. The rural school students treated with AOM is reliably superior to the rural school students treated with ITM and urban school students treated with AOM in Achievement in English. Also it can be concluded that the urban
school students treated with AOM do not differ significantly to the rural school students treated with ITM in Achievement in English.

6.2.34 The calculated F ratio of Achievement in English of students for the interaction of locality of school and the effectiveness of SM over ITM is 0.69 with degrees of freedom (1,156). Hence it was concluded that the difference in the effectiveness of SM over ITM on enhancing the Achievement of students based on locality of school is not significant.

Comparison of the effectiveness of Information Processing Model (combined) with other Information Processing Models on Achievement in English of students at secondary level for total sample and relevant sub samples

6.2.35 When comparing the effectiveness of IPM-c on Achievement in English of students at secondary level, it is observed that IPM-c is comparatively superior to all other selected Information Processing Models such as AOM, SM and ITM. (The obtained F value of IPM-c with AOM is 39.61 with degrees of freedom (4,395), with SM is 4.52 with degrees of freedom (4,395) and with ITM is 30.62 with degrees of freedom (4,395)). Also it was concluded that IPM-c is comparatively superior to all other selected Information Processing Models on enhancing the Achievement in English of students at secondary level. (The adjusted post-test scores of AOM is 16.60, SM is 25.71, ITM is 18.26 and IPM-c is 30.36).

6.2.36 The calculated F ratios of post-test scores of Achievement in English of students for the interaction of gender of students and each models of teaching are 0.22 with degrees of freedom (1,156) for IPM-c and AOM, 1.51 with degrees of freedom (1,156) for IPM-c and SM and 1.77 with degrees of freedom (1,156) for IPM-c and ITM. Hence it can be concluded that the effectiveness of IPM-c is not significantly differ from other selected Information Processing Models such as AOM, SM and ITM on enhancing the Achievement in English of boys and girls at Secondary level.

6.2.37 The calculated F ratios of post-test scores of Achievement in English of students for the interaction of management of school and each models of teaching
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are 99.96 with degrees of freedom (1,156) for IPM-c and AOM, 7.92 with degrees of freedom (1,156) for IPM-c and SM and 16.69 with degrees of freedom (1,156) for IPM-c and ITM. Hence it was concluded that the effectiveness of IPM-c over other selected Information Processing Models such as AOM, SM and ITM differ significantly on enhancing the Achievement in English of rural and urban school students at Secondary level.

6.2.38 The mean of Achievement in English of Government school students treated with IPM-c is 23.30 and that with AOM is 18.03. Also the mean of Achievement in English of Aided school of students treated with IPM-c is 37.23 and that with AOM is 15.38. Hence the Government school students treated with IPM-c is reliably superior to the Government and Aided school students treated with AOM and the Aided school students treated with IPM-c in Achievement in English. Also the Aided school students treated with IPM-c reliably superior to the Government and Aided school students treated with AOM. It was also concluded that the Government school students treated with AOM is reliably superior to the Aided school students treated with AOM in Achievement in English.

6.2.39 The mean of post-test scores of Achievement in English of Government school students treated with IPM-c is 23.30 and that with SM is 21.73 and that of Aided school students treated with IPM-c is 37.23 and that with SM is 29.78. Hence it can be concluded that the Aided school students treated with IPM-c is reliably superior to the Government and Aided school students treated with SM and the Government school students treated with IPM-c in Achievement in English. Also the Aided school students treated with SM is reliably superior to the Government school students treated with SM and with IPM-c on enhancing the Achievement in English. It can also be concluded that the Government school students treated with IPM-c do not differ significantly in the means of Achievement in English of the Government school students treated with SM.

6.2.40 The mean of post-test scores of Achievement in English of Government school students treated with IPM-c is 23.30 and that with ITM is 15.23 and that of Aided school students treated with IPM-c is 37.23 and that with ITM is 21.43. Hence it can be concluded that the Aided school students treated with IPM-c is
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reliably superior to the Government and Aided school students treated with ITM and the Government school students treated with IPM-c. Also the Government school students treated with IPM-c is reliably superior to the Government school students treated with ITM on enhancing the Achievement in English. This group did not differ significantly in their Achievement in English with Aided school students treated with ITM in Achievement in English. It was also concluded that the Aided school students treated with ITM is reliably superior to the Government school students treated with ITM.

6.2.41 The calculated F ratios of post-test scores of Achievement in English of students for the interaction of locality of school and each models of teaching are 99.96 with degrees of freedom (1,156) for IPM-c and AOM, 7.92 with degrees of freedom (1,156) for IPM-c and SM and 16.69 with degrees of freedom (1,156) for IPM-c and ITM. Hence it was concluded that the effectiveness of IPM-c over other selected Information Processing Models such as AOM, SM and ITM differ significantly on enhancing the Achievement in English of rural and urban school students at Secondary level.

6.2.42 The mean of Achievement in English of rural school students treated with IPM-c is 23.30 and that with AOM is 18.03. Also the mean of Achievement in English of urban school of students treated with IPM-c is 37.23 and that with AOM is 15.38. Hence the urban school students treated with IPM-c is reliably superior to the rural and urban school students treated with AOM and the rural school students treated with IPM-c and the urban school students treated with IPM-c reliably superior to the rural and urban school students treated with AOM in Achievement in English. It was also concluded that the rural school students treated with AOM is reliably superior to the urban school students treated with AOM.

6.2.43 The mean of post-test scores of Achievement in English of rural school students treated with IPM-c is 23.30 and that with SM is 21.73 and that of urban school students treated with IPM-c is 37.23 and that with SM is 29.78. Hence it can be concluded that the urban school students treated with IPM-c is reliably superior to the rural and urban school students treated with SM and the rural school students treated with IPM-c and the urban school students treated with SM is
reliably superior to the rural school students treated with SM and with IPM-c on enhancing the Achievement in English. It was also concluded that the rural school students treated with IPM do not differ significantly in the means of Achievement in English of the rural school students treated with SM.

6.2.44 The mean of post-test scores of Achievement in English of rural school students treated with IPM-c is 23.30 and that with ITM is 15.23 and that of urban school students treated with IPM-c is 37.23 and that with ITM is 21.43. Hence it is concluded that the urban school students treated with IPM-c is reliably superior to the rural and urban school students treated with ITM and the rural school students treated with IPM-c and the rural school students treated with IPM-c is reliably superior to the rural school students treated with ITM in Achievement in English. This group did not differ significantly in their Achievement in English with urban school students treated with ITM. It was also concluded that the urban school students treated with ITM is reliably superior to the rural school students treated with ITM in Achievement in English.

**Effectiveness of certain Information Processing Models (individual and combined) with Activity Oriented Method on enhancing the Achievement in English of students at Secondary level under the categories of objectives such as Knowledge, Comprehension, application, analysis, synthesis and evaluation for the total sample**

6.2.45 The analysis of variance of the pre-test and post-test scores showed that there was no significant difference between the means of pre-test scores of the experimental groups and control groups, (F_x = 1.3) with degrees of freedom (4,395). But there was significant difference between the means of the post-test scores of the groups (F_y = 53.4) with degrees of freedom (4, 395), which is
significant at 0.01 level of significance. It indicates that the groups under study differ significantly in their post-test achievement scores.

6.2.46 The analysis of Covariance of the pre-test and post-test scores showed that the difference between the means of the post-test scores of the groups differ significantly after they have been adjusted the initial differences of the pre-test \((F_{yx} = 54.13, P<0.01)\).

6.2.47 When comparing the effectiveness of selected Information Processing models with Activity Oriented Method, it can be concluded that all the selected Information Processing Models are more effective than AM on enhancing Achievement in English of students at Secondary level under the category of objective Knowledge except AOM. There exists no significant difference between the adjusted post-test scores of Achievement in English of students at secondary level treated with AOM and AM. (The obtained F value was 0 with degrees of freedom \((4, 395)\) for AOM and AM, 21.75 with degrees of freedom \((4, 395)\) for SM and AM and 3.53 with degrees of freedom \((4, 395)\) for ITM and AM.)

6.2.48 Since the calculated F value between AM and IPM-c is 31.61 with degrees of freedom \((4,395)\), it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective Knowledge of students at Secondary level treated with AM and IPM-c is significant. The adjusted means of post-test scores of pupils with AM is 2.33 and that of IPM-c is 4.98 and so it was concluded that the IPM-c is comparatively superior to AM on enhancing the Achievement in English under the category of objective Knowledge of students at secondary level.

**Effectiveness of certain Information Processing Models (individual and combined) with Activity Oriented Method on enhancing the Achievement in English under the category of objective Comprehension of students at Secondary level for total sample**

6.2.49 The analysis of variance of the pre-test and post-test scores showed that there was significant difference between the means of pre-test scores of the experimental groups and control groups, \((F_x = 2.99)\) with degrees of freedom
But there was significant difference between the means of the post-test scores of the groups \((F_y = 50.73)\) with degrees of freedom \((4,395)\), which is significant at 0.01 level of significant. It indicates that the groups under study differ significantly in their pre-test as well as post-test achievement.

6.2.50 The analysis of covariance of the pre-test and post-test scores showed that the difference between the means of the post-test scores of the groups differ significantly after they have been adjusted the initial differences of the pre-test \((F_{yx} = 51.76, P<0.01)\).

6.2.51 When comparing the effectiveness of selected Information Processing Models with Activity Oriented Method, it was concluded that SM is more effective than AM on enhancing the Achievement in English under the category of objective Comprehension of students at Secondary level. But, AOM and ITM are equally effective with AM on enhancing the Achievement in English under the category of objective Comprehension of students at Secondary level. (The obtained \(F\) value was 0.52 with AOM and AM, 16.46 with SM and AM and 0.57 with ITM and AM with degrees of freedom \((4,395)\)).

6.2.52 Since the calculated \(F\) value between AM and IPM-c is 34.73 with degrees of freedom \((4,395)\), it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective comprehension of students treated with AM and IPM-c is significant. The adjusted means of post-test scores of Achievement in English of students treated with AM is 2.73 and that with IPM-c is 6.07 and so it was concluded that the IPM-c is comparatively superior to AM on enhancing the Achievement in English under the category of objective Comprehension of students at Secondary level.

Effectiveness of certain Information Processing Models (individual and combined) with Activity Oriented method on enhancing the Achievement in English of students at Secondary level under the category of objective Application for total sample

6.2.53 The analysis of variance of the pre-test and post-test scores showed that there was no significant difference between the means of pre-test scores of the
experimental groups and control groups, \((F_x = 0.81)\) with degrees of freedom \((4,395)\). But there was significant difference between the means of the post-test scores of the groups \((F_y = 74.03)\) with degrees of freedom \((4,395)\), which is significant at 0.01 level of significance. It indicates that the groups under study differ significantly in their post-test scores of achievement.

6.2.54 The analysis of covariance of the pre-test and post-test scores showed that the difference between the means of the post-test scores of the groups differ significantly after they have been adjusted the initial differences of the pre-test \((F_{yx} = 36.13, P<0.01)\).

6.2.55 When comparing the effectiveness of selected Information Processing Models with Activity Oriented Method, it was concluded that SM and ITM are more effective than AM on enhancing the Achievement in English under the category of objective Application of students at Secondary level. But, AOM is equally effective with AM on enhancing the Achievement in English under the category of objective Application of students at Secondary level. (The obtained F value was 1.67 with AOM and AM, 21.00 with SM and AM and 2.86 with ITM and AM with degrees of freedom \((4,395)\)).

6.2.56 Since the calculated F value between AM and IPM-c is 23.40 with degrees of freedom \((4,395)\), it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective Application of students treated with AM and that with IPM-c is significant. The adjusted means of post-test scores of Achievement in English of students treated with AM is 3.08 and that with IPM-c is 5.97 and so it was concluded that the IPM-c is comparatively superior to AM on enhancing the Achievement in English under the category of objective Application of students at Secondary level.
Effectiveness of certain Information Processing Models (individual and combined) with Activity Oriented Method on enhancing the Achievement in English of students at Secondary level under the category of objective Analysis for total sample

6.2.57 The analysis of variance of the pre-test and post-test scores showed that there was significant difference between the means of pre-test scores of the experimental groups and control groups, \((F_x = 2.67)\) with degrees of freedom \((4, 395)\). But there was significant difference between the means of the post-test scores of the groups \((F_y = 52.51)\), which is significant at \(0.01\) level of significance. It indicates that the groups under study differ significantly in their pre-test as well as post-test achievement scores.

6.2.58 The analysis of covariance of the pre-test and post-test scores showed that the difference between the means of the post-test scores of the groups differ significantly after they have been adjusted the initial differences of the pre-test \((F_{yx} = 52.53, P<0.01)\).

6.2.59 When comparing the effectiveness of certain selected Information Processing Models with Activity Oriented Method, it was concluded that AOM and ITM have equal effectiveness, whereas SM is superior to AM on enhancing the Achievement in English under the category of objective Analysis of students at Secondary level. (The obtained F value was 1.19 with AOM and AM, 14.05 with SM and AM and 2.12 with ITM and AM with degrees of freedom \((4, 395)\)).

6.2.60 Also the calculated F value between AM and IPM-c is 41.29 with degrees of freedom \((4, 395)\), and so it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective Analysis of students treated with AM and IPM-c is significant. The adjusted means of post-test scores of Achievement in English of students treated with AM is 1.75 and that with IPM-c is 4.93 and so it was concluded that the IPM-c is comparatively superior to AM on enhancing the Achievement in English under the category of objective Analysis of students at Secondary level.
Effectiveness of certain Information Processing Models (individual and combined) with Activity Oriented Method on enhancing the Achievement in English of students at Secondary level under the category of objective Synthesis for total sample

6.2.61 The analysis of variance of the pre-test and post-test scores showed that there was no significant difference between the means of pre-test scores of the experimental groups and control groups (\( F_x = 1.17 \)) with degrees of freedom (4,395). But there was significant difference between the means of the post-test scores of the groups (\( F_y = 36.12 \)) with degrees of freedom (4,395), which is significant at 0.01 level of significance. It indicates that the groups under study differ significantly in their post-test achievement scores.

6.2.62 The analysis of covariance of the pre-test and post-test scores showed that the difference between the means of the post-test scores of the groups differ significantly after they have been adjusted the initial differences of the pre-test (\( F_{yx} = 36.24, P<0.01 \)).

6.2.63 When comparing the effectiveness of selected Information Processing Models with Activity Oriented Method, it was concluded that AOM is equally effective with AM, whereas all other selected Information Processing Models such as SM and ITM are significantly more effective than AM on enhancing the Achievement in English under the category of objective Synthesis of students at Secondary level. (The obtained F value was 0.19 with AOM and AM, 10.4 with SM and AM, and 2.55 with ITM and AM with degrees of freedom (4,395)).

6.2.64 The calculated F value between AM and IPM-c is 26.74 with degrees of freedom (4,395), and so it was concluded that the difference between the adjusted post-test scores of, Achievement in English under the category of objective Synthesis of students treated with AM and IPM-c is significant. The adjusted means of post-test scores of Achievement in English of students treated with AM is 2.26 and that with IPM-c is 4.95 and so it can be concluded that the IPM-c is comparatively more effective than AM on enhancing the Achievement in English under the category of objective Synthesis of students at Secondary level.
Effectiveness of certain Information Processing Models (individual and combined) with Activity Oriented Method on enhancing the Achievement in English of students at Secondary level under the category of objective Evaluation for total sample

6.2.65 The analysis of variance of the pre-test and post-test scores showed that there was no significant difference between the means of pre-test scores of the experimental groups and control groups, \( F_x = 1.24 \) with degrees of freedom \((4,395)\). But there was significant difference between the means of the post-test scores of the groups \( F_y = 19.42 \) with degrees of freedom \((4,395)\), which is significant at 0.01 level of significant. It indicates that the groups under study differ significantly in their post-test achievement scores.

6.2.66 The analysis of covariance of the pre-test and post-test scores showed that the difference between the means of the post-test scores of the groups differ significantly after they have been adjusted the initial differences of the pre-test \( F_{yx} = 19.4, P<0.01 \).

6.2.67 When comparing the effectiveness of selected Information Processing Models with Activity Oriented Method, it can be seen that ITM is equally effective with AM, whereas all other selected Information Processing Models such as SM and AOM are comparatively superior to AM on enhancing the Achievement in English of students under the category of objective Evaluation. (The obtained F value was 3.43 with AOM and AM, 10.4 with SM and AM and 1.76 with ITM and AM with degrees of freedom \((4,395)\)).

6.2.68 The calculated F value between AM and IPM-c is 17.48 with degrees of freedom \((4,395)\) and it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective Evaluation of students treated with AM and IPM-c is significant. The adjusted means of post-test scores of Achievement in English of students treated with AM is 1.83 and that with IPM-c is 3.39 and therefore it can be concluded that the IPM-c is comparatively superior to AM on enhancing the Achievement in English under the category of objective Evaluation of students at Secondary level.
Comparison of the effectiveness of certain Information Processing Models (individual) with each other on enhancing the Achievement in English of students at Secondary level under the category of objectives knowledge, comprehension, application, analysis, synthesis and evaluation for total sample

Comparison of the effectiveness of certain Information Processing Models (individual) with each other on enhancing the Achievement in English of students at Secondary level under the category of objective Knowledge for total sample

6.2.69 Since the obtained F value was 21.32 with degrees of freedom (4,395) for AOM and SM and 3.36 with degrees of freedom (4,395) for AOM and ITM, and the adjusted post-test scores of Achievement in English under the category of objective Knowledge of students treated with AOM is 2.35, with SM 4.53 and with ITM is 3.21, it was concluded that the SM and ITM are more effective than AOM on enhancing the Achievement in English under the category of objective Knowledge of students at secondary level.

6.2.70 The calculated F value between SM and ITM is 7.75 with degrees of freedom (4,395) and hence it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective Knowledge of students treated with SM and ITM is significant. The adjusted means of post-test scores of Achievement in English of students treated with SM is 4.53 and that with ITM is 3.21 and it can be concluded that the SM is comparatively superior to ITM on enhancing the Achievement in English under the category of objective Knowledge of students at Secondary level.

Comparison of the effectiveness of certain Information Processing Models (individual) with each other on enhancing the Achievement in English of students at Secondary level under the category of objective Comprehension for total sample

6.2.71 Since the calculated F value between AOM and SM is 11.15 with degrees of freedom (4,395), it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective
Comprehension of students treated with AOM and SM is significant. The adjusted means of post-test scores of Achievement in English of students treated with AOM is 3.14 and that with SM is 5.03. So it implies that SM is superior to AOM on enhancing the Achievement in English under the category of objective Comprehension of students at Secondary level. Since the calculated F value between AOM and ITM is 0, it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective comprehension of students treated with AOM and with ITM is not significant. Thus it can be concluded that the AOM is equally effective with ITM, whereas SM is more effective than AOM on enhancing the Achievement in English under the category of objective Comprehension of students at Secondary level.

6.2.72 As the calculated F value between SM and ITM is 10.91 with degrees of freedom (4,395), it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective Comprehension of students treated with SM and with ITM is significant. The adjusted means of post-test scores on Achievement in English of students treated with SM is 5.03 and that with ITM is 3.16 and therefore it can be concluded that the SM is comparatively superior to ITM on enhancing the Achievement in English under the category of objective Comprehension of students at Secondary level. Thus it can be concluded that SM is significantly superior to AOM and ITM on enhancing the Achievement in English under the category of objective Comprehension of students at Secondary level.

Comparison of the effectiveness of certain Information Processing Models (individual) with each other on enhancing the Achievement in English of students at Secondary level under the category of objective application for total sample

6.2.73 Since the obtained F value between AOM with SM is 10.83 with degrees of freedom (4,395) and with ITM is 0.16 with degrees of freedom (4,395), it was concluded that the AOM is equally effective with ITM, whereas SM is more effective than AOM on enhancing the Achievement in English under the category of objective Application of students at Secondary level.
6.2.74 Since the calculated F value between SM and ITM is 8.36 with degrees of freedom (4,395), it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective Application of students treated with SM and with ITM is significant. The adjusted means of post-test scores of Achievement in English of students treated with SM is 5.82 and that with ITM is 4.09 and so it can be concluded that the SM is comparatively superior to ITM on enhancing the Achievement in English under the category of objective Application of students at Secondary level. Thus it can be concluded that SM is superior to AOM and ITM on enhancing the Achievement in English under the category of objective Application of students at Secondary level.

Comparison of the effectiveness of certain Information Processing Models (individual) with each other on enhancing the Achievement in English of students at Secondary level under the category of objective Analysis for total sample

6.2.75 The obtained F value between AOM and SM is 7.05 with degrees of freedom (4,395) and between AOM and ITM is 0.13 with degrees of freedom (4,395). Hence it can be concluded that that the AOM is equally effective with ITM, whereas SM is more effective than AOM on enhancing the Achievement in English under the category of objective Analysis of students at Secondary level.

6.2.76 The calculated F value between SM and ITM is 5.26 with degrees of freedom (4,395), and it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective Analysis of students treated with SM and ITM is significant. The adjusted means of post-test scores of Achievement in English of students treated with SM is 3.60 and that with ITM is 2.47 and therefore it can be concluded that the SM is comparatively superior to ITM on enhancing the Achievement in English under the category of objective Analysis of students at Secondary level. Thus it can be concluded that SM is superior to AOM and ITM on enhancing the Achievement in English under the category of objective Analysis of students at Secondary level.
Comparison of the effectiveness of certain Information Processing Models (individual) with each other on enhancing the Achievement in English of students at Secondary level under the category of objective Synthesis for total sample

6.2.77 The calculated F value between AOM and SM is 7.79 with degrees of freedom (4,395), and it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective Synthesis of students at Secondary level treated with AOM and SM is significant. The adjusted means of post-test scores of Achievement in English of students treated with AOM is 2.487 and that with SM is 3.94. So it implies that SM is superior to AOM on enhancing the Achievement in English under the category of objective Synthesis of students at Secondary level. Since the calculated F value between AOM and ITM is 1.35 with degrees of freedom (4,395), it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective Synthesis of students treated with AOM and ITM is not significant. The adjusted means of post-test scores of Achievement in English of students treated with AOM is 2.487 and that with ITM is 3.09 and it can be concluded that AOM and ITM are equally effective in enhancing the Achievement in English under the category of objective Synthesis of students at Secondary level. Thus it is revealed from the result that the AOM is equally effective with ITM, whereas SM is more effective than AOM on enhancing the Achievement in English under the category of objective Synthesis of students at Secondary level.

6.2.78 Since the calculated F value between SM and ITM is 2.65 with degrees of freedom (4,395), it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective Synthesis of students treated with SM and ITM is significant. The adjusted means of post-test scores of pupils with SM is 3.94 and that with ITM is 3.09 and it can be concluded that the SM is comparatively superior to ITM in enhancing the Achievement in English under the category of objective Synthesis of students at Secondary level.
Comparison of the effectiveness of certain Information Processing Models (individual) with each other on enhancing the Achievement in English of students at Secondary level under the category of objective Evaluation for total sample

6.2.79 Since the obtained F value was 0.72 with degrees of freedom (4,395) for AOM and SM, 0.27 with degrees of freedom (4,395) with AOM and ITM and since it is not significant at 0.01 level of significance, it is concluded that the AOM is equally effective with SM and ITM in enhancing the Achievement in English under the category of objective Evaluation of students at Secondary level.

6.2.80 The calculated F value between SM and ITM is 1.88 with degrees of freedom (4,395) and it was concluded that the difference between the adjusted post-test scores of Achievement in English under the category of objective Evaluation of students treated with SM and ITM is not significant. Also it is concluded that the SM and ITM are equally effective in enhancing the Achievement in English under the category of objective Evaluation of students at Secondary level. Thus it can be concluded that SM is equally effective with AOM and ITM on enhancing the Achievement in English under the category of objective Evaluation of students at Secondary level.

Comparison of the effectiveness of Information Processing Model (combined) with other selected Information Processing Models on enhancing the Achievement in English of students at Secondary level under the category of objectives Knowledge, Comprehension, application, analysis, synthesis and Evaluation for total sample

6.2.81 Since the calculated F value of IPM-c with AOM is 31.09 with degrees of freedom (4,395), with SM is 0.92 with degrees of freedom (4,395) and with ITM is 14.01 with degrees of freedom (4,395), it can be concluded that the IPM-c is
superior to AOM and ITM on enhancing the Achievement in English of students under the category of objective Knowledge. SM is equally effective with IPM-c on enhancing the Achievement in English under the category of objective Knowledge of students at Secondary level. Also, the obtained adjusted post-test scores on Achievement in English under the category of objective knowledge of students treated with AOM is 2.35, with SM is 4.53, with ITM is 3.21 and with IPM-c is 4.98. Thus it can be concluded that IPM-c is highly effective than all other selected Information Processing Models except SM on enhancing the Achievement in English under the category of objective Knowledge of students at Secondary level.

Comparison of the effectiveness of Information Processing Model (combined) with other selected Information Processing Models on enhancing the Achievement in English of students at Secondary level under the category of objective Comprehension for the total sample

6.2.82 When comparing the effectiveness of IPM-c on enhancing the Achievement in English under the category of objective Comprehension of students at Secondary level, it can be observed that IPM-c is comparatively superior to all other selected Information Processing Models such as AOM, ITM and SM on enhancing the Achievement in English under the category of objective Comprehension of students at Secondary level. (The obtained F value between IPM-c with AOM is 26.78, with SM is 3.37 and with ITM is 26.41 with degrees of freedom (4,395)). The adjusted post-test scores on Achievement in English under the category of objective Comprehension of students treated with AOM is 3.14, with SM is 5.03, with ITM is 3.16 and with IPM-c is 6.07. So it can be concluded that IPM-c is superior to all other selected Information Processing models on enhancing the Achievement in English under the category of objective Comprehension of students at Secondary level.
Comparison of the effectiveness of Information Processing Model (combined) with other selected Information Processing Models on enhancing the Achievement in English of students at Secondary level under the category of objective Application for total sample

6.2.83 When comparing the effectiveness of IPM-c on enhancing the Achievement in English under the category of objective Application of students, it can be observed that IPM-c is comparatively superior to all other selected Information Processing Models such as AOM and ITM. SM is equally effective with IPM-c in enhancing the Achievement in English under the category of objective Application of students at Secondary level. (The obtained F value of IPM-c with AOM is 12.57, with SM is 0.06 and with ITM is 9.09 with degrees of freedom (4,395)). Also the adjusted post-test scores of Achievement in English of students treated with AOM is 3.85, with SM is 5.82, with ITM is 4.09 and with IPM-c is 5.97. So it can be concluded that IPM-c is highly effective than all other selected Information Processing Models except SM on enhancing the Achievement in English under the category of objective Application of students at Secondary level.

Comparison of the effectiveness of Information Processing Model (combined) with other selected Information Processing Models on enhancing the Achievement in English of students at Secondary level under the category of objective Analysis for total sample

6.2.84 When comparing the effectiveness of IPM-c on enhancing the Achievement in English under the category of objective Analysis of students, it can be observed that the IPM-c is comparatively superior to all other selected Information Processing Models such as AOM, SM and ITM as the obtained F value of IPM-c with AOM is 28.44, with SM is 7.17 and with ITM is 24.72 with degrees of freedom (4,395). Also the adjusted post-test scores of Achievement in English under the category of objective Analysis of students treated with AOM is 2.28, with SM is 3.6, with ITM is 2.47 and with IPM-c is 4.93. Hence it can be concluded that IPM-c is highly effective than all other selected Information Processing Models on enhancing the Achievement in English under the category of objective Analysis of students at Secondary level.
Comparison of the effectiveness of Information Processing Model (combined) with other selected Information Processing Models on enhancing the Achievement in English of students at Secondary level under the category of objective Synthesis for total sample

6.2.85 Since the obtained F value of IPM-c with AOM is 22.44, with SM is 3.79 and with ITM is 12.78 with degrees of freedom (4,395) and the obtained adjusted post-test scores of Achievement in English under the category of objective Synthesis of students treated with AOM is 2.487, with SM is 3.94, with ITM is 3.09 and with IPM-c is 4.95, it can be concluded that IPM-c is comparatively superior to all other selected Information Processing Models such as AOM, SM and ITM in enhancing the Achievement in English under the category of objective Synthesis of students at Secondary level.

Comparison of the effectiveness of Information Processing Model (combined) with other selected Information Processing Models on enhancing the Achievement in English of students at Secondary level under the category of objective Evaluation for total sample

6.2.86 When comparing the effectiveness of IPM-c on enhancing the Achievement in English under the category of objective Evaluation of students, it can be observed that it is effective than all other selected Information Processing Models such as AOM and ITM, but it is equally effective with SM on enhancing the Achievement in English under the category of objective Evaluation of students at Secondary level. (The obtained F value was 5.43 with AOM and IPM-c, 2.2 with SM and IPM-c and 8.14 with ITM and IPM-c with degrees of freedom (4,395)). Also the adjusted post-test scores of Achievement in English under the category of objective Evaluation of students treated with AOM is 2.52, with SM is 2.84, with ITM is 2.33 and with IPM-c is 3.39. So it can be concluded that IPM-c is highly effective than all other selected Information Processing Models, except SM on enhancing the Achievement in English under the category of objective Evaluation of students at Secondary level.
Effectiveness of certain Information Processing Models (individual and combined) on Language Creativity in English of students at Secondary level for the total sample

6.2.87 The analysis of variance of the pre-test and post-test scores showed that there was no significant difference between the means of pre-test scores of the experimental groups and control groups, (Fx = 0.08) with degrees of freedom (4,395). But there was significant difference between the means of the post-test scores of the groups (Fy = 24.87) with degrees of freedom (4,395), which is significant at 0.01 level of significance. It indicates that the groups under study differ significantly in their post-test scores of Language Creativity.

6.2.88 The analysis of Covariance of the pre-test and post-test scores showed that the difference between the means of the post-test scores of the groups differ significantly after they have been adjusted for the initial differences of the pre-test (Fyx = 25.18, P<0.01).

6.2.89 When comparing the effectiveness of certain selected Information Processing Model (individual) with Activity Oriented Method, it can be seen that all the Information Processing Models are comparatively superior to AM on enhancing the Language Creativity of students at secondary level except SM. SM is equally effective with AM in enhancing the Language Creativity of students at Secondary level. (The obtained F value between selected Information Processing Models such as AOM, SM and ITM with AM were 8.3, 0.62 and 9.29 with degrees of freedom (4,395) respectively).

6.2.90 Also the calculated F value between AM and IPM-c is 0.96 with degrees of freedom (4,395) and it was concluded that the difference between the adjusted post-test scores of Language Creativity of students treated with AM and IPM-c is not significant. The adjusted means of post-test scores of students treated with AM is 34.18 and that of IPM-c is 37.16 and so it was concluded that AM and IPM-c are equally effective on enhancing the Language Creativity of pupils in English.
Comparison of the effectiveness of select Information Processing Models (individual) with each other on Language Creativity in English of students at Secondary level for total sample

6.2.91 Since the obtained F value between AOM with SM is 4.39 with degrees of freedom (4,395) and with ITM is 0.03 with degrees of freedom (4,395), it revealed that the AOM is equally effective with ITM, whereas SM is superior to AOM on enhancing the Language Creativity of students at Secondary level.

6.2.92 The calculated F value between SM and ITM is 5.12 with degrees of freedom (4,395) and it was concluded that the difference between the adjusted post-test scores of Language Creativity of students treated with SM and ITM is significant. The adjusted means of post-test scores of Language Creativity of students treated with SM is 31.79 and that with ITM is 24.90 and it was concluded that the SM is comparatively superior to ITM on enhancing the Language Creativity of students at Secondary level. Thus it can be concluded that the SM is comparatively superior to AOM and ITM on enhancing the Language Creativity of students at secondary level.

Comparison of the effectiveness of Information Processing Model (combined) with other selected Information Processing Models on Language Creativity in English of students at Secondary level for total sample

6.2.93 When comparing the effectiveness of IPM-c on enhancing Language Creativity of students at Secondary level, it can be observed that IPM-c is superior to all other selected Information Processing Models such as AOM, SM and ITM. (The obtained F value between IPM-c with AOM is 14.9, with SM is 3.12 and with ITM is 16.22 with degrees of freedom (4,395)). The adjusted post-test scores of Language Creativity of students treated with AOM is 25.41, with SM is 31.79, with ITM is 24.9 and with IPM-c is 37.16 and so it can be concluded that IPM-c is highly effective than all other selected Information Processing Models such as AOM, SM and ITM on enhancing the Language Creativity of students at Secondary level.
Effectiveness of certain Information Processing Models (individual and combined) on Language Interest in English of students at Secondary level for total sample

**6.2.94** The analysis of variance of the pre-test and post-test scores showed that there was significant difference between the means of pre-test scores of the experimental groups and control groups, ($F_x = 2.4$) with degrees of freedom (4,395). Also there was significant difference between the means of the post-test scores of the groups ($F_y = 22.58$) with degrees of freedom (4,395), which is significant at 0.01 level of significant. It indicates that the groups under study differ significantly in their pre-test as well as post-test Language Interest.

**6.2.95** The analysis of Covariance of the pre-test and post-test scores showed that the difference between the means of the post-test scores of the groups differ significantly after they have been adjusted for the initial differences of the pre-test ($F_{yx} = 21.8$, $P<0.01$).

**6.2.96** When comparing the effectiveness of certain select Information Processing Models with Activity Oriented Method, it can be seen that AOM, SM and ITM are equally effective with AM on enhancing Language Interest of students at Secondary level. (The obtained $F$ value was 0.77 with AOM and AM, 2.28 with SM and AM and 0.42 with ITM and AM with degrees of freedom (4,395)).

**6.2.97** Also the calculated $F$ value between AM and IPM-c is 18.28 with degrees of freedom (4,395) and hence it was concluded that the difference between the adjusted post-test scores of Language Interest of students treated with AM and IPM-c is significant. The adjusted means of post-test scores of pupils with AM is 7.84 and that of IPM-c is 13.60 and so it can be concluded that the IPM-c is comparatively superior to AM on enhancing the Language Interest of students at Secondary level.
Comparison of the effectiveness of select Information Processing Models (individual) with each other on Language Interest in English of students at Secondary level for total sample

6.2.98 Since the obtained F value of AOM with SM is 0.40 with degrees of freedom (4,395) and with ITM is 0.05 with degrees of freedom (4,395), it was revealed that the AOM is equally effective with all other selected Information Processing Model such as SM and ITM on enhancing the Language Interest of students at Secondary level.

6.2.99 The calculated F value between SM and ITM is 0.75 with degrees of freedom (4,395) and hence it was concluded that the difference between the adjusted post-test scores of Language Interest of students treated with SM and ITM is not significant. It can be concluded that the SM is equally effective with ITM in enhancing the Language Interest of students at Secondary level. Thus it can be concluded that SM is equally effective with all other selected Information Processing Models such as AOM and ITM on enhancing the Language Interest of students at Secondary level.

Comparison of the effectiveness of Information Processing Model (combined) with other selected Information Processing Models on Language Interest in English of students at Secondary level for total sample

6.2.100 When comparing the effectiveness of IPM-c on enhancing Language Interest of students at Secondary level, it can be observed that IPM-c is significantly superior to all other selected Information Processing Models such as AOM, SM, and ITM on enhancing the Language Interest in English of students at Secondary level. (The obtained F value was 11.55 for AOM and IPM-c, 7.65 for SM and IPM-c, and 13.18 for ITM and IPM-c with degrees of freedom (4,395)). Also the adjusted post-test scores of Language Interest of students treated with AOM is 9.02, with SM is 9.87, with ITM is 8.7 and with IPM-c is 13.6. Hence it can be concluded that IPM-c is superior to all other selected Information Processing Models such as AOM, SM and ITM on enhancing the Language Interest of students at Secondary level.
6.3 Conclusions Based on Findings

6.3.1 All the selected Information Processing Models such as Advance Organiser Model, Synectics Model and Inductive Thinking Model and all the three Information Processing Models combined are more effective than Activity Oriented Method on enhancing Achievement in English of students at Secondary level for total sample and relevant sub samples.

6.3.2 Synectics model is found as the best model and is superior to Advance Organiser Model and Inductive Thinking Model on enhancing the Achievement in English of students at Secondary level for total sample and relevant sub samples. The effectiveness of Advance Organiser Model and Inductive Thinking Model on Achievement in English of students is same for total sample. But Advance Organiser Model is superior to Inductive Thinking Model on enhancing the Achievement in English of students at Secondary level for the relevant sub samples.

6.3.3 The Information Processing Model (combined) is the best Model among the Models selected and is superior to all other selected Information Processing Models such as Advance Organiser Model, Synectics Model and Inductive Thinking Model on enhancing Achievement in English of students at Secondary level for total sample. The Information Processing Model (combined) is superior to Advance Organiser Model and Inductive Thinking Model on enhancing Achievement in English of students at Secondary level for the relevant sub samples. Synectics Model is equally effective with the Information Processing Model (combined) on enhancing the Achievement in English of students at Secondary level for relevant sub samples.

6.3.4 All the selected Information Processing Models such as Advance Organiser Model, Synectics Model and Inductive Thinking Model and all the three Information Processing Models combined are more effective than the Activity Oriented Method on enhancing Achievement in English under the category of objectives knowledge, comprehension, application, analysis, synthesis and evaluation of students at Secondary level for total sample.
6.3.5 Synectics Model is found to be superior to Advance Organiser Model and Inductive Thinking Model on enhancing the Achievement in English of students at Secondary level for all the objectives other than Evaluation. For Evaluation, all the selected Information Processing Models such as Advance Organiser Model, Synectics Model and Inductive Thinking Model are equally effective for enhancing the Achievement in English for total sample. The Advance Organiser Model is equally effective with Inductive Thinking Model on enhancing Achievement in English for objectives Knowledge, Comprehension, Application and Analysis. But Inductive Thinking Model is comparatively superior to Advance Organiser Model on enhancing the Achievement in English for the objective Synthesis of students at Secondary level for total sample.

6.3.6 The Information Processing Model (combined) is the best Model among the Models selected and is superior to all other selected Information Processing Models such as Advance Organiser Model, Synectics Model and Inductive Thinking Model on enhancing the Achievement in English of students at Secondary level for total sample under the categories of objectives Comprehension, Analysis and Synthesis. For other objectives such as Knowledge, Application and Evaluation, the Information Processing Model (combined) is superior to Advance Organiser Model and Inductive Thinking Model, but is equally effective with Synectics Model.

6.3.7 All the Information Processing Models such as Advance Organiser Model, Synectics Model and Inductive Thinking Model and the Information Processing Model (combined) are more effective than the Activity Oriented Method on enhancing Language Creativity of students at secondary level for total sample.

6.3.8 Synectics Model is superior to other selected Information Processing Models such as Advance Organiser Model and Inductive Thinking Model on enhancing Language Creativity of students at Secondary level for total sample. Advance Organiser Model and Inductive Thinking Model are equally effective on enhancing Language Creativity of students for total sample.
6.3.9 The Information Processing Model (combined) is the best Model among the Models selected and is superior to all other selected Information Processing Models such as Advance Organiser Model, Synectics Model and Inductive Thinking Model on enhancing Language Creativity of students at Secondary level for total sample.

6.3.10 All the Information Processing Models such as Advance Organiser Model, Synectics Model and Inductive Thinking Model are equally effective with the Activity Oriented Method on enhancing Language Interest of students at secondary level for total sample. The information processing model (combined) is more effective than Activity Oriented Method on enhancing the Language Interest of the students at secondary level for total sample.

6.3.11 All the selected Information Processing Models such as Advance Organiser Model, Synectics Model and Inductive Thinking Model are equally effective on enhancing the secondary school student’s Interest in the English Language for total sample.

6.3.12 The Information Processing Model (combined) is the best Model among the Models selected and is superior to all other selected Information Processing Models such as Advance Organiser Model, Synectics Model and Inductive Thinking Model on enhancing Language Interest of students at Secondary level for total sample.

Thus it can be concluded that the selected Information Processing Models (individual and combined) are more effective than the Activity Oriented Method on total Achievement and achievement under the category of objectives Knowledge, Comprehension, application, analysis, synthesis and evaluation of students at Secondary level. The analysis of data with regard to Language Creativity in English also revealed the superiority of Information Processing Models (combined) over the Activity Oriented Method of teaching. But in the case of Interest in the English Language, all the selected information processing models are equally effective with Activity Oriented Method except the combined application of all the three selected models. The findings of the study can be
summarized in such a way that the Information Processing Model combined is the best Model among the Models selected and is superior to all other selected Information Processing Models such as Advance Organiser Model, Synectics Model and Inductive Thinking Model on Achievement in English, Language Creativity and Language Interest. Synectics Model is found as the next best model and is superior to other selected Information Processing Models on Achievement in English, language creativity and Language Interest of students at secondary level.

6.4 Tenability of Hypotheses

6.4.1 The first hypothesis states that there will be significant difference between student’s Achievement in English at Secondary level taught through the selected Information Processing Models (individual and combined) with Activity Oriented Method for the total sample and the relevant sub-samples. The conclusion 6.3.1 substantiates this hypothesis and so the first hypothesis is accepted.

6.4.2 The second hypothesis states that there will be significant difference between students’ Achievement in English at Secondary level taught through each of the select Information Processing Models when compared with the other for the total sample and relevant sub-samples. The conclusion 6.3.2 partially substantiates the hypothesis and so the second hypothesis is partially accepted.

6.4.3 The third hypothesis states that there will be significant difference between students’ Achievement in English at Secondary level taught through the combination of the select Information Processing Models and taught through each of the Information Processing Models as far as the total sample and relevant sub samples are concerned. The conclusion 6.3.3 partially substantiates the hypothesis and so the third hypothesis is partially accepted.

6.4.4 The fourth hypothesis states that there will be significant difference between student’s Achievement in English at Secondary level taught through selected Information Processing Models (individual and combined)
with Activity-Oriented Method under the categories of objectives such as knowledge, comprehension, application, analysis, synthesis and evaluation for the total sample. The conclusion 6.3.4 substantiates the hypothesis and so the fourth hypothesis is accepted.

6.4.5 The fifth hypothesis states that there will be significant difference between student’s Achievement in English at Secondary level taught through each of the Information Processing Models selected with the other under the categories of objectives such as knowledge, comprehension, application, analysis, Synthesis and Evaluation for the total sample. The conclusion 6.3.5 partially substantiates the hypothesis and so the fifth hypothesis is partially accepted.

6.4.6 The sixth hypothesis states that there will be significant difference between student’s Achievement in English at Secondary level taught through the Information Processing Models (combined) and through each of the Information Processing Models selected under the categories of objectives such as knowledge, comprehension, application, analysis, synthesis and evaluation for the total sample. The conclusion 6.3.6 partially substantiates the hypothesis and so the sixth hypothesis is partially accepted.

6.4.7 The seventh hypothesis states that there will be significant difference between creativity in the English Language of students at Secondary level taught through selected Information Processing Models (individual and combined) with Activity Oriented Method for the total sample. The conclusion 6.3.7 substantiates the hypothesis and so the seventh hypothesis is accepted.

6.4.8 The eighth hypothesis states that there will be significant difference in creativity in the English Language of students at Secondary level when taught through the Information Processing Models separately for the total sample. The conclusion 6.3.8 partially substantiates the hypothesis and so the eighth hypothesis is partially accepted.
6.4.9 The ninth hypothesis states that there will be significant difference in creativity in the English Language of students at Secondary level taught through the Information Processing Models (combined) and the same separately so far as the total sample is concerned. The conclusion 6.3.9 substantiates the hypothesis and so the ninth hypothesis is accepted.

6.4.10 The tenth hypothesis states that there will be significant difference in interest in English of students at Secondary level when taught through the select Information Processing Models (both individual and combined) and when taught through Activity Oriented Method as for the total sample. The conclusion 6.3.10 substantiates the hypothesis and so the tenth hypothesis is partially accepted.

6.4.11 The eleventh hypothesis states that there will be significant difference in students’ interest in English at Secondary level when taught through the Information Processing Models (individual and combined), as for the total sample. The conclusion 6.3.11 does not substantiate the hypothesis and hence the hypothesis is rejected.

6.4.12 The twelfth hypothesis states that there will be significant difference in student’s Interest in English at Secondary level when taught through the Information Processing Models combined and when taught through the same individually as for the total sample. The conclusion 6.3.12 substantiates the hypothesis and so the twelfth hypothesis is accepted.

6.5 Suggestions for Improving the Educational Practices

The findings emerged out of the present study have wide implications for the development of teaching strategies in English at secondary level. It was emphatically proved that the application of Information Processing Model was far superior to the Activity Oriented Method in teaching English at secondary level.

It is noteworthy phenomenon that the Information Processing Models is far better than Activity Oriented Method in general. The effectiveness of certain Models as same as the Activity Oriented Method. Certain others are far superior to Activity Oriented Method. At the same time, the Information Processing Models
combined stands as the outstanding one. Selection of models in accordance with the nature and content of the learning material is very important. One model can not be suit to all types of lessons. Teaching strategies or models must be chosen in accordance with the nature and content of the learning material. Hence the following suggestions are put forward based on the findings of the present study.

- Model lesson transcripts based on different models of teaching on selected units may be developed by an expert team, and those should be made available to teachers.

- Model lesson transcripts based on such type of innovative models should also be made available for teachers’ training institutions. Such institutions should be equipped with suitable reference facilities including reading materials and supplementary materials as Models of teaching.

- Overcrowded classrooms is a hindrance to the active implementation of Information Processing Models, hence the existing teacher pupils’ ratio should be reviewed by minimizing the strength of pupils.

- Sufficient reference books such as handbooks and books containing model lesson transcripts based on these popular models and their combined form of application should be published for the ready reference of the existing teacher society.

- Since optimum achievement can be obtained through the combined application of different models together, such innovative type of tasks should be incorporated in to the secondary school syllabus.

- The innovative strategies can be employed for the effective work out of seminars, debate, discussion, symposium, refresher courses and even-Orientation classes effectively. For the fulfillment of this purpose, small books can be published.

- For the effective development of communication skills among the learners as well as teachers, this teaching strategy – certain Information Processing Models individually and in combined form–can be employed. Because
communication largely depends on a child’s stock vocabulary. The most prominent hindrance to the way to open up one’s mouth to speak fluently in English is that he usually finds himself in short of words when he speaks. Informal explanatory language can play a major role in meeting the pupils towards understanding and appreciation of the ideas presented in curriculum.

- Hundreds of research findings have shown that Indian students of secondary classes feel hindrance in fluency at the cost of accuracy for communication in English due to insufficient exposure in the classroom. This problem can be overcome by the implementation of certain Information Processing Models. Because ample opportunities are provided there.

- Normal shyness to imitate a piece of conversation in English for Indian pupils of secondary classes can be avoided with the application of Information Processing Models. Kindle up the motivation process within the classroom, the students will take more interest to come forward and participate the communication process.

- Curriculum for English at secondary level should be revised in such a way as to include more Information Processing Models-Oriented and necessary materials-Oriented that will develop communication skills to a great extent.

- Inculcation of interest is the basic necessity for motivation. Motivated organism can only be evaluated. This study has definitely shown that Information Processing Models of teaching tried out is far superior to the Activity Oriented Method in bring about better attainment in English Language Interest Inventory.

- This study emphatically proved that the combined application of these three Information Processing Models resulted in the highest scores in achievement, Language Creativity and Language Interest. Hence variety form of teaching strategy is highly effective than all other strategies which
in turn variety forms of strategies recommended for secondary school students for learning English.

6.6 Suggestions for Further Research

The investigator is of the view that the present study opens up many new areas for conducting more studies in future in the field of education. In the light of the present study, the investigator made the following suggestions for further researches.

- Similar studies can be conducted for different age groups, subjects of study and medium of instruction.
- Studies at other levels of education like lower primary, upper primary, secondary and university may be conducted.
- This study can be repeated for a large sample for longer duration representing all districts in the state to ensure the validity of the result.
- The effect of combined application of Information Processing Models on other variables can be tested.
- Exploratory studies on the attitude of teachers towards employing combined application of models for classroom instruction have to be undertaken.
- Similar study can be conducted to find out the effectiveness of combined application of Information Processing Model on fast learners, under achievers, slow learners, gifted children, sensitive learners, learners of short concentration span and learners with learning disability.
- Similar study can be carried out with other Models of Teaching.
- A survey can be done to find out the problems behind implementing the novel methods of teaching in schools.
- Similar study can be conducted using different combination of Models from different families of Models.
• The relative effectiveness of combined application of models can be explored in various other localities like slums, costal or hilly areas, scheduled caste and tribe areas and even schools that follow different educational syllabi.

• Teaching materials to-Orient English curriculum to adopt novel techniques of teaching can be prepared and tested.