CHAPTER-II

REVIEW OF RELATED LITERATURE

*Man is the only animal that does not have to begin a new in every generation but can take advantage of knowledge which he has accumulated through the centuries.*

- Mouley

The review of the earlier research findings provides an empirical framework to carry out further researches in a particular area. Thus, the survey of the related literature is a crucial in the planning of any research study. This chapter presents a brief review of the researches pertaining to the effectiveness of Advance Organizer Model (AOM) and Biological Science Inquiry Model (BSIM) and Traditional Method (TM), attitude of the students as well as the teachers towards AOM, BSIM and Traditional Method and Intelligence and SES as a correlates of achievements were taught through there Methods of instruction. The present review can hardly be expected to provide the comprehensive picture of all the researches related to present study. However the best efforts have been made by the researchers to review and synthesize the available literature related directly or indirectly with theme of the present study.

The researcher made an attempt to review the related literature available in India as well as in Abroad as given below-

1. Studies in India
2. Studies in Abroad
II.1. STUDIES IN INDIA:-

The Researcher has search out the studies related to the variables of the title as given below -

1. Chandrakala (1976) organized a study entitled “An Experimental Study of different Methods of Teaching Sanskrit Grammar to High School Classes” and concluded that the three treatments Advanced Organizer Model (AOM) and Concept Attainment Model (CAM) were more effective than Traditional Method (T.M.) in terms of students’ performance. High and Low achievers learnt equally well through AOM and CAM than Traditional Method.

2. Patel, A.D. (1977) organized a study entitled “Development and Tryout of Biological Science Inquiry Model (BSIM) in Units of Geometry for Class VIII and its Effectiveness in the Context of Different Variables” and concluded that the BSIM was found to be effective for the pupil who had good study habits as well as those who had poor study habits, when compared to Traditional Methods.

3. Panday, R.K. (1980) reported “Advance Organizer Model and others Models to be Significantly Superior to Traditional Methods in terms of Educational Achievement” while they were found equally effective in terms of attitude towards social Sciences.

4. Pandey, I.D. (1980) organized an experimental study entitled “Use of Biological Science Inquiry Model (BSIM) on teaching Mathematics at primary level” and concluded that the group following the BSIM text differed significantly and delayed achievement. The group following the BSIM text was significantly superior in retention to the subjects following the Traditional Method without home assignment and the Traditional Method with some assignment and grading.
5. **Suthar, K.S. (1981)** conducted an experimental study entitled “A Study of Performance on Biological Science Inquiry Model (BSIM) Material in relation to some Psychological Characteristics” and concluded that the BSIM was superior to the Traditional Method was of teaching, irrespective of different variables.

6. **Sharma, M.M. (1981)** organized an experimental study entitled “A Comparative Study of Effectiveness of Advanced Organizer Method (AOM) and Traditional Method (TM) in Teaching Mathematics at Secondary level Students” and concluded that AOM syntax was a more effective than Conventional Teaching not only in relation to achievement but also in relation to retention at Secondary level. Intelligence had a significant effect on achievement and no significant effect on retention of achievement. It did not show any differential effect on achievement and its retention through the two methods of teaching employed at Secondary level Students.

7. **Inamdar, J.A. (1981)** organized a research entitled “A Study of Effectiveness of the AOM Strategy in the subject of Mathematics for VII Standard in relation to some Psychological Correlates” and concluded that the thesis aimed at studying the effectiveness of the AOM syntax in the subject of mathematic in standard VII. The performance of the group was studied in relation to some psychological correlates such as general ability, reasoning ability and motivation towards school. Analysis and interpretation of the date was dove to find out the relation between general ability and performance in achievement in AOM and the relation between motivation towards schools and performance in achievement in AOM. It was found that the AOM technique was superior to the Traditional Method.
8. **Kumar, A. (1981)** conducted a study entitled “An Experimental Study of Relative Effectiveness of Exposition Method, Advanced Organizer Method and Multimedia Method in Science Education” and concluded that the Multimedia Method was more effective in science education than either the AOM or Expository Method. Retention in learning by Multimedia Method was higher than by the other two methods. There was no interaction between these Method of Instruction (Exposition Method, AOM and Multimedia Method) and Level of Intelligence.

9. **Man, B.S. (1981)** organized an experimental study entitled “An Experimental Study of the Effect of Unit tests on Retention of AOM Syntax in a segment of Physics” and concluded that the one week retention of the group using AOM phases with unit test was not significantly different from its six week retention. On the other hand, the one week retention of the group using Programmed Instruction material without unit test was significantly superior to its six week retention implying that there was no further significant loss in the retention of the group using AOM with unit test whereas there was a significant loss with retention of the group using AOM without such tests during the said interval.

10. **Malik & Meena (1982)** studied the “Effectiveness of Advance Organizer Model (AOM) in higher learning” and found that AOM is more effective in facilitating significantly higher learning in comparison to Traditional Methods. The effects of general and specific, visual and verbal organizers on facilitated learning and retention.
11. Tamthai (1982) investigated the “Effect of Advance Organizer Model on Science Learning of VIII grade Thai School Students with Average Academic Ability”. The study revealed that Advance Organizer had no facilitating effect on male students who were either field dependent or field independent. However, the Advance Organizer Model (AOM) did have a facilitating effect on female students who were field independent while it inhibited the Science Learning of field dependent female students.

12. Sharma, Y.K. (1982) organized a research entitled “A Study of the Effect of Knowledge of Behavioral Objectives on the Performance in Pollution in Angiosperms in relation to BSIM at Secondary Level”, and concluded that BSIM programme with prior knowledge of behavioral objective was the most effective while the BSIM without knowledge of behavioral objective was less effective. The performance of the students who had undertaken the BSIM with prior knowledge of behavioral objectives was significantly better than the performance of those without prior knowledge.

13. Bhattacharya, S.P. (1984) attempted to study the concept of “Effectiveness of different types of Models of Teaching Approach in Geography in terms of Institutional Resources”, and found that models of teaching approach resulted in better achievement in geography.

14. Bhandwal, S.C. (1984) conducted a study entitled “Effects of Interim Tests on the Performance and Test Anxiety of High School Students following AOM Instructional Material in a Segment of General Science” and concluded that the use of Interim Tests during the course of Instruction enhanced immediate as well delayed performance of students on the summative test irrespective of the fact whether they
were taught through AOM of the Conventional Method of Teaching. Immediate as well as delayed performance of the students was better on the summative test when the student were taught with Interim Tests along with the knowledge of results about there tests in comparison to – (a). Those who were taught the content matter with interim tests but with no knowledge of results and, (b).Those who were taught the content matter without using the interim tests, irrespective of the fact whether the students were taught through AOM or the conventional method of teaching.

15. Shah, S.H. (1984) conducted a study entitled “Development and Tryout of BSIM on Population Education for the Students of class IX” and concluded that – Study of the programme could bring tangible changes on students knowledge. The BSIM approach adopted a promise for the successful use of educational technology in the area of population education. Opinion of the participants regarding to the quality of the programme were positive. They found the programme very interesting and useful.

16. Ghosh, A.K. (1985) attempted “To Make an Appraisal of the Relative Effectiveness of Two Different Types of Advance Organizers on the Criteria of Immediate Learning in Life Science by having Learners of Different Cognitive Styles and Different Levels of Readiness of Learning”. The major findings of the study were the cognitive sub-assumption of the concept in life science was facilitated by the advance introduction of relevant sub-suming concepts Pictorial type of Advance organizer enhanced learning and retention in Life Science.
17. **Lewis (1986)** studied “The Comparative effects of an Advance Organizers and Simplified Readability of Science Material on Science Achievement in the Biology Laboratory”. The results indicated that either the Advance Organizers or Simplified Reading Material is significantly better than no treatment but the two together are significantly better than either alone.

18. **Rajoria, R.K. (1986)** studied on the topic “A Comparative Study of Effectiveness of Advance Organizer Model & Traditional Method for Teaching Class VIII Sciences Students belonging to different Residential Backgrounds”. In their study he investigated the effects of expository and comparative organizer on Science and Mathematics achievement.

19. **Pandey, S.K. (1986)** conducted a study entitled “A Comparative Study of Effect of Advanced Organizer Model (AOM) & Inquiry Training Model (ITM) in relation to Attitude towards Social Science” and reported that Advanced Organizer Model is more significantly superior to Traditional Methods in terms of educational achievement while they were found equally effective in terms of attitude towards Social Sciences.

20. **Ghosh, J. (1986)** found in their studies entitled “Relative Efficacy of Prose & Pictorial Type of Advance Organizer on immediate learning & retention of IX class students using Witkin’s Embedded Figure Test”, that both type of organizers facilitated retention of subject matter. For disciplines like Science pictorial type of Advance Organizer has been assess superior in enhancing learning & retention.

21. **Chaudhary & Vaidya (1986)** reported Mastery Learning Model to be superior to Concept Attainment Model and Traditional Method in language learning especially Hindi grammar, whereas Budhisagar
(1987) found Advance Organizer and Operant Conditioning Model to be significantly superior to Traditional Method in terms of achievement of B.Ed. students in Educational Psychology. Interactive effects of the variables have also been studied indicating that Intelligence is an important contributory factor besides teaching strategies.

22. **Pandey, R.L. (1986)** compared the “*Effectiveness of Inquiry Training Model (ITM) with Advance Organizer Model (AOM) in relation to Attitudes towards Social Studies*”. The treatments given to the students had different effects on the pupils’ achievement. The difference in means of gain scores in achievement due to Advanced Organizer Model (AOM) and Conventional Teaching (CT) was significant at 0.05 levels. Difference due to Inquiry Training Model (ITM) and Conventional Teaching (CT) was significant at 0.01 levels and the difference due to AOM and ITM was not significant. There was no significant difference between AOM and ITM, AOM and conventional Teaching (CT) in terms of students’ Attitude towards Social Studies.

23. **Sushma (1987)** studied the effect of “*Biological Science Inquiry Model, Concept Attainment Model and Traditional Method on students’ achievement*”. Beside this effect of Biological Science Inquiry Model and Concept Attainment Model based on students attitude towards Biological Science, was also determined.

24. **Kalacherry, K.A. (1987)** organized an experimental study entitled “*Preparation and Experimental try-out of Biological Science Inquiry Model Syntax in the Syllabus of Chemistry prescribed for class VIII (SSC) in Maharastra State*” and concluded that- About 53% learners were able to respond correctly to 83% of the phases
though 90% standard could not be reached, the attainment was considered to be satisfactory. The value of measure of density (T.T.R.) for the whole syntax was found to that a few students who scored usually below 50% is the Traditional System, scored above through the use of AOM syntax.

25. **Desai, R.M. (1988)** organized a study entitled “A Study of Effectiveness of Biological Science Inquiry Model strategy in Teaching of Physics in the IX grade classes” and concluded that – Pupils took active interest in reading and learning through BSIM technique. They found the BSIM approach easy and interesting as each pupil had and opportunity to learn at his/her own speed and capacity. It was found that the pupils score high on the intelligence test also scored high in the post test and pre test and those having low score on the intelligence test score low on the post test. The results quite consistent with the concept of Intelligence and Achievement.

26. **Passi (1986), Singh (1987) and Sansanwal (1988)** tried to establish the effect of differential variation in components of models of teaching in terms of competence, understanding reaction and willingness to implement. The models included in the study were Advance Organizer Model and Traditional Models included in the study were Advance Organizer Model and Traditional Method. The two methods were studied at a time. The training in models of teaching in the form of lecture, discussion and peer group practice were willing to implement the Models in their classrooms.

27. **Agarwal and Mishra (1988)** studied the “Effectiveness of the Reception Strategy in enhancing the attainment of Science Concepts” and found it to be very effective by using in the field of Teaching and Learning in any subject.
28. **Bhaveja, S. (1989)** organized a Study entitled “*Comparative Study of Effectiveness of Concept Attainment Model (CAM) and Hilda Taba’s Inductive Thinking Model (HTITM) with regards to the learning concepts in Biology*”, and analysed the thinking strategies used by the learners. The two studies differed in their sample population and elaboration. The findings were quite similar in the two supporting studies and the role of Inductive Thinking Models’ process in the process of conceptualization and generalization was also similar.

29. **Malik, S.K. (1989)** tried to find out of students willingness for being taught by Advance Organizer Model. The students were found to be more willing to be taught by Advance Organizer Model than Traditional Method.

30. **Debi, M.K. (1989)** developing and testing the effectiveness of AOM material in the syllabus of principles of education in the B.T. Course of Guhavti University and concluded that the Advanced Organizer Model (AOM) was found more effective compare to the Traditional Method (T.M.) of teaching in achievement in Principles of Education. There was a significant difference between the post test score of the experimental group and of the control group.

31. **Sharma, A.K. (1989)** conducted a study entitled “*Effects of BSIM Strategies on the Performance in Social Studies of Tribal High School Students’ of Himachal Pradesh in relation to Academic Motivation and Test Anxiety*” and concluded that - the Tribal High School students exhibited equal performance in Social Studied irrespective of the fact whether they were taught through the BSIM strategy.
32. **Rao, Bhaskara D. (1990)** analysed comparatively the Scientific Attitude, Scientific Aptitude and Achievement in Biology at Secondary School Level students. The major findings of the study were that the Scientific Attitude was observed in average in Secondary School Students. There was no influence of sex on Scientific Attitude. Scientific Aptitude in Secondary School Students was found of average level. English medium urban schools have bit higher Scientific Aptitude. The achievement in Biology was also of average level. There was highly significant and positive association among Scientific Attitude, Aptitude and Achievement of the students in Biology.

33. **Sharma, A.K. (1992)** reported in this study entitled “*Effects of Advanced Organizer Model (AOM) & Inquiry Training Model (ITM) on the performance in Social Studies of Tribal High Schools’ Students of Himanchal Pradesh in relation to Academic Motivation and Test of Anxiety*” that the tribal high schools students exhibited equal performance in social studies irrespective of the fact whether they taught through the both Instructional Strategy i.e. Advanced Organizer Model (AOM) & Inquiry Training Model (ITM).

34. **Mahajan, S.K. (1992)** compared Bruner's Concept Attainment Model and Ausubel's Advance Organizer Model, on teaching abilities of student-teachers and an achievement of students in various schools. On the basis of scores on the teaching competence scale and the uniform criterion for evaluation of teaching practices, three groups were formed, namely High (H), Middle (M) and Low (L). Each group consisted to 15 student-teachers. Three treatments were assigned to 9 sub-groups of H, M and L groups. All other factors were controlled. The group taught by C.A.M. was found superior to the group taught
by A.O.M. The achievement of the students who were taught by C.A.M. was found to be better than those students taught by A.O.M.

35. **Bhatia, Kusum (1992)** conducted a study entitled “Identification and Remedy of Difficulties in Learning Fractions with Advance Organizer Model Syntax and conducted that Teaching and Learning through AOM” could identify help both students and teachers. Students receiving the AOM syntax did better in post-test as compared to the other group. The AOM material worked effectively as a remedial tool. AOM material not only helped the students to learn better but also help the teacher to know how the students learn better.

36. **Prabha, R. (1992)** has found in their studies entitled “Effectiveness of Advanced Organizer Model (AOM) and Conventional Method in Mathematics at Secondary Level students with reference to their Interest and Attitude”, that the Advanced Organizer Model (AOM) is more effective than Conventional Method in Mathematics Teaching. Interest in relation to subject and Attitude towards the subject has also been developed in the students whenever the AOM teaching methods has been used by the subject-teacher.

37. **Agarwal, R. (1994)** reported in her study conducted on the conceptual understanding by Advanced Organizer Model and Concept Attainment Model that both the methods taken under study (AOM & CAM) were quite effective for teaching the Biological concept to class IX students. All the students irrespective of their sea level of intelligence and SES took almost equal time in understanding the concept presented before through Advance Organizer Model (AOM).

in teaching of Physics at senior secondary level” and reported that students took active interest in reading and learning through Advance Organizer Model. It was found that the pupils’ scoring high on the Intelligence test also scoring high in the post-test and pre-test and those having low score on the Intelligence test score low on the post test. The result was quite consistent with the concept of Intelligence and Achievement.

39. Nagappa, A. (2004) compared the “Effectiveness of Inquiry Training Model (ITM) and Biological Science Inquiry Model (BSIM) on Scientific Aptitude and Achievement in Biological Science of Saink School Students” and concluded that Biological Science Inquiry Model and Inquiry Training Model are more effective than Traditional Method of Teaching Biology. Inquiry Training Model is significantly more effective than Biological Science Inquiry Model in terms of CBSE scores. Inquiry training model is significantly more effective than conventional teaching method in terms of mental Ability test score.

40. Rao, C. Rama (2004) conducted a broad study on the topic “Effectiveness of Biological Science Inquiry Model and Traditional Method on scientific aptitude and achievements in Biological science of smile school students” and reported that Biological Science Inquiry Model was found effective than Traditional Method in the view of Scientific Aptitude and Achievements of smile school’s students.

41. Saxena, S. (2005) Studied on “Effectiveness of Inquiry Training Model & Biological Science Inquiry Model over Traditional Method for teaching Biology”, She reported, on the basis of pre-test & post–
test score of achievement, that Inquiry Training Model (ITM) & Biological Science Inquiry Model (BSIM) is more effective than Traditional Method (TM).

42. **Singh, R.K. (2009)** compared “Relative Efficacy of Advance Organizer Model and Inductive Thinking Model of teaching in Economics”. He concluded that there was significant gain in the achievement test scores in Economics of class eleven students who were taught Economics through Advance Organizer Model (AOM) of teaching. As far as the Inductive Thinking Model was concerned, there was a significant gain in the pre-test, post-test mean scores of achievement in Economics of class eleven students. It could, thus, be concluded that ITM was an effective strategy of teaching for enhancing the achievement of students in Economics. The attitude scores of the sampled students also registered a significant increase when the Advance Organizer Model of teaching was used. There was a significant gain in the attitude scores of class eleven students when they were taught Economics through ITM.

43. **Raghav, R.P.S. (2009)** organized an experimental Research entitled “A Comparative Study of Effectiveness of Programmed Instruction and Traditional Methods in Teaching Biology” and concluded that Methods of Teaching, Intelligence, Socio-Economic Status and Delayed Intervals had a significant effect on the Academic Achievement in Biology. Programmed Instruction Method (PI) exhibited more scholastic achievement than the Traditional Method (TM) of teaching. The students of High Intelligence group showed more scholastic achievement than those of Low Intelligence group. The progressions in the level of SES of students demonstrate increase in the scholastic achievement. The scholastic achievement scores were
observed to have a decreasing trend from next day testing to final testing.

44. Upadhyaya, A (2011) conducted an experimental research entitled “Effectiveness of Concept Attainment Model and Inquiry Training Model on Scientific Aptitude and Achievement in Science of Secondary School Students” and concluded that CAI & ITM both are effective in comparison to Traditional Method in reference to achievement and scientific aptitude.

II.1. STUDIES IN ABROAD:-

1. Torens (1965) conducted a research entitled “The effect of BSIM on highly creative students”. The findings of the study were highly creative students do not prefer BSIM syntax to read. Convergent thinking students prefer BSIM material.

2. Leith and Shadbolt (1967) conducted a research entitled “Effect of Biological Science Inquiry Model on Extrovert and Introvert Students”. The findings of the research were there is no significant difference among the achievement of Extrovert and Introvert Students. The retaining power of Extrovert students is found more than Introvert students. Introvert students prefer more to BSIM syntax in comparison to Extrovert students.

3. Richmond (1975) conducted a study entitled “A Scale in Eight Schools Britannicas’ Syntax on First Year Algebra Course (TEMAC) for one full Academic Session”. The result of this study showed that ‘expect’ in two schools attainment of the TEMAC group was significantly lower than that of the control group.

4. Barnes and Clawson (1975) reviewed about 32 studies on Advance Organizers to see their effect on learning. Hunt (1972), O.Dunnel
(1979), Soyle (1981) and others is some notable among those who studied Advance Organizer Model using different variables and concluded that this is the most popular teaching Model.

5. **Leganzer (1975)** developed procedures and programmes for Inquiry Training to improve reading and learning skills of VII starded students. The study revealed that experimental group students attained higher scores on the vocabulary and questioning than control students.

6. **Jack, Adler (1976)** conducted a research to find out the effectiveness of AOM in teaching a complex perception motor skill. The prepared an intrinsic programme for the iron sting in gold and compared its effectiveness to conventional method for teaching. He some skill, 58 male under graduate were the controlled had not.

7. **Eckerling (1982)** investigated usefulness of Advance Organizer Model under a variety of conditions. Other trends available Advance Oraganizer Models are use of quasi experimental design with small to moderate sample of students of pupil teachers. Studying variation of this Model of teaching on achievement using purposive sample with a wide variation in sample size and Methodology. Some of there studies have also been conducted in ohase.

8. **Lenz (1983)** studies the Advance Oranizer Model in relation to learning and retention of secondary grade students using base live research design. He had been assigned a small physics class of sixteen serious minded pupil. He was also giving them money responsibilities. He might not have given to more typical class. Pupil formulated a number of problems related the work. Thet divided into groups for discussion and began working on the topic. Thus, devising experiments to help with their understanding.

9. **Dennis (1984)** studied of Inquiry Oriented Teaching and Inquiry Based Programmes have been generally supportive of inquiry
approach. Inquiry based programs at the middle school grades have been found generally enhance student performance particularly as it relates to laboratory skills and skill of graphing and interpreting data. Evidence has also been reported that shows inquiry related teaching effective in fostering scientific literacy and understanding of science processes vocabulary knowledge and conceptual understanding creative thinking, positive attitudes towards science and higher achievement on tests of procedural knowledge.

10. **Dennis (1984)** studied the effects of Advance organizers and repetition, on achievement in a high school Biology class. The four groups were compared on two dependent variables – lower level cognitive skills and higher level cognitive skills. The independent variables were used: a) Advance organizer b) repetition and c) The combination of Advance organizer and repetition. The major findings were 1) All the independent Variables produced equally effective results on both dependent variables 2) students performance in the control group was as productive as students performance in the experimental groups. Results also indicated significant gains in achievement by students in all groups from pre-test to post-test.

11. **Morgan (1985)** assessed the effects of two types of pre-laboratory exercises when used as Advance Organizers on Students’ Achievement and Attitude in an introductory Biology laboratory courses. Analysis of results led to the Pre-laboratory exercises facilitated the Achievement of Students. Pre-laboratory exercises facilitated the development of more positive Attitudes towards Biology. The two types of pre-laboratory exercises used as Advance Organizers were equally effective in enhancing student’s Achievement.
12. Harley (1986) conducted a research entitled “An analysis of Effectiveness of Biological Sciences Inquiry Model and Traditional Method” and concluded that teaching through Biological Science Inquiry Model was more effective than Traditional Method.

13. Pamela E. James (1986) reported Advance organizer Model & Inquiry Training Model to be significantly superior to Traditional Methods in terms of Educational Achievements will they were found equally effective in terms of Attitude towards Social Sciences.

14. Levis (1987) studied AOM to compare the readability of simplified Science material along with science achievement. These studied have comp-up, sometimes, with contradictory results due to differential treatment and objectives.

15. Watson (1989) assigned a small physics class of sixteen serious minded pupils. He was also to give them money responsibilities, he might not have given to more typical class pupils formulates a number of problems related to work. They divided into group for discussion and began working on the topics. Thus, devising experiments help the students to increase their understanding level.

16. Eigen and Margulies (1989) investigating the effects of Biological Science Inquiry Model and response mode as a function of high and low information material found that with unusual material of high information level overt responders served significantly better than covert responders while with the material of low level of information, there was no significant difference. Turin a pupil teacher treed to conduct a discussion on safe driving practical for last twenty five minutes of the class period. He found that for fifteen minutes discussion seemed to be proceeding smoothly but actually six pupils contributed significantly. Rests were busy in either their own work or reading comics or in alter activities. Ten minutes before the end of the
period pupil began to talk loudly and another boy should quest authoritative tone.

17. **Lock and Wolf (1990)** investigated approaches to science teaching and teaching styles and the effects of direct inquiry on students’ performance may vary by level of cognitive development. There seems also a possible conflict of goals when attempting to balance the needs of underachieving gifted students to develop more positive self-concepts with the desire to develop skills of inquiry and problem solving.

18. **Hall & Mc Curdy (1990)** studied that emphasis on Inquiry Oriented Teaching does not necessarily preclude the use of text books or other instructional materials. The Biological Science Curriculum Study materials are examples of those that include an Inquiry Orientation other materials accommodating an Inquiry approach to teaching have been identified by (Haury (1992). Several elementary schools text books have been compared and a content analysis scheme for identifying inquiry-friendly textbooks has been described how textbooks can be used to support Inquiry Oriented Science Teaching.

19. **Peter Pollman And Siron Levin (1999)** catalyzing Inquiry at the interface of computing and Biology “Workshop on Modeling of Biological Systems” challenging issues that & pan all areas of Modeling systems integrating date and developing Models of complex systems across multiple spatial and temporal scales relations and coupling temporal complexity and coding parameter estimation and treatment of uncertainty statistical and date mining simulation Modeling and predication structure function relationships large and small nucleic.

20. **David Searls (2000)** points out the rapid advance in Biology increasing bioethical issues, and how students need to make rational
decisions. Introduces a value inquiry model development that includes identifying and classifying value problems understanding Biological knowledge related to conflict situations, considering selecting and evaluating each alternative and final value judgment.

II.3. CONCLUSION:-

Research innovations and inventions are the effective tools bring desirables progress and improvement in all walks of human life. Research in education serves the same purpose. However, carry out research as to invent something new is not an essay-nut to crack. The rigorous and sophisticated kind of research known as fundamental research neither serves useful purpose nor it is feasible by the practioners like teachers and headmasters within their meager resources and working conditions.

The new field of Teaching Technology is concerned with meeting this problem. Many recent teaching technologies claim be panacea for educational problems mention may be made of programmed learning. Magnetic tape demonstration, discussion, book-cum-discussion, lecture-cum-demonstration, discovery learning team teaching etc..

Among the accepted criteria to ascertain the student’s attainment are those connected with Educational Technology, educational system and application by higher learning technology, the lab to land networks and management of research and development? A vital component of the entire educational scenario is the irritating of technological advancement to enhancement of teaching methodologies and strategies at different levels of intelligence.

Keeping in view the above points related to its importance, it is clear that the present study was a humble attempt to ascertain the effectiveness of Advanced Organizer Model (AOM), Biological Science Inquiry Model
(BSIM) and Traditional Method (TM) in teaching Biology with regards to their Intelligence and Socio-Economic Status.