CHAPTER - II

REVIEW OF RELATED LITERATURE

2.0 INTRODUCTION -

“A survey of related literature is necessary for proper planning, execution and right concept of the problems and solutions. It provides guiding hypothesis, suggestive methods of investigation and comparative data for interpretative purpose.” (Good, C. V., 1959, p.59)

The review of related literature not only provides conceptual frame at reference for the contemplated research but also suggests methods, procedures, sources of data and statistical techniques appropriate for the solution of the problem. “A summary of the writings of recognised authorities and of previous researches provides evidence that the researcher is familiar with what is already known and what is still unknown and untested” (Best J. W., 1986, p.39). The researcher ascertains her study and becomes able to formulate her hypotheses on the basis of review of related literature which presents the rationale for her study. It provides the researcher the right track to execute and complete her research.

“When completed, it becomes a part of the accumulated knowledge in the field and so contributes to the thinking and research and follow” (Fox, D. J., 1969, p.111)

The review of related literature is very necessary in the field of research through which the researcher can have an understanding of the previous work that has been done. To develop an insight into the problem to be investigated, the investigator must know what others have done and what remains to be done in that particular area of his own interest.

According to Good, Barr and Scates, the purpose of review of related literature is as follows:

a) To show whether the evidence already available solves the problem, adequately without further investigation and thus avoiding the risk of duplication.
b) To provide ideas, theories, explanations or hypotheses valuable in formulating problems.

c) To suggest methods of research appropriate to the problem.

d) To locate comparative data useful in the interpretation of results, and

e) To contribute the general scholarship of the investigator.

The study of related literature enables the researcher in avoiding duplication of work. Moreover, it provides the knowledge regarding the method, procedure followed, tools used for data collection and reaching the conclusion in studies of similar type. In short, it helps in planning and executing the research work.

2.1 REVIEWS OF RESEARCHES RELATED TO LITERATURE -

Besides the researcher had also gone through related books, periodicals, magazines, newspapers, internet, journals, research bulletin published by M. S. Council of Education, encyclopedia, dissertations and university news published by Association of Indian Universities, Anweshika, NCERT, Indian Educational Review, NCERT, Indian Psychological Review, Journal of Shivaji University and Miracle of Teaching, published by Asian Academy of Education, etc.

A brief review of the related studies in this are taken in the following pages.

ARTICLES -

In the Article “The Discussion Method in Classroom Teaching” - Medredith Damien Gall and Maxwell Gillett. (Spring, 1980), pp.98-103, (article consists of 6 pages).

i) How to keep discussion on going? How to start?

ii) What if, others do not give you chance to speak.

iii) How to summarize the points?

iv) How long to speak?
These points were explained in detail.

In the Article **“New Initiatives on strengthening of Teaching in Humanities, Social Sciences, Arts & Languages”,** (29th July, 2003).

The UGC constituted a committee with heads of the various National Councils for education and research to help UGC in delineating strategies to revamp and strengthen the teaching programmes in the universities and colleges.

i) It is here that teaching, learning and research have to be re-elaborated in terms of conceptualization, formalization and synthesis.

ii) What are the methods by which we can promote interest among students.

iii) Seminars / Symposium / Conferences for college and university teachers could be organized.

There was programme of **“Effective Teaching” -**

The District Level Task Force, Davangere organized the three day programme on “Effective Teaching” for college lectures of Davangere district. It was held at D. R. Science College, Davangere, on 27, 28 and 29 (December, 2003).

This programme intends to serve following aspects.

i) To evolve strategies or a common framework for teachers.

ii) To evolve teaching methods to make teaching more effective.

iii) How to improve process of teaching and learning.

In the Article **“Pre-practice Basis to Vitalize Practice Training”- Jeewan Jyoti Sidana,** (May 02, 2004) investigated following points.

It consists of assessments of classroom teaching performance, ability to write scheme of lessons, teaching activities and writing of lesson plans.

It provides human and material resources for student teaching.

Provide opportunities for college teachers to undertake classroom teaching and research and provide class for discussion, criticism and practice teaching lessons.
In the Article “Evolving Participatory Teaching Methods: Some Reflections” - Manish Sharma, (April 26, May 02, 2004).

Threw light on new innovative teaching methods principles of good teaching, good teaching materials, curriculum demands to make teaching more effective.

In the Article “Group work and the large classroom: Myth and the real” - J. John Love Joy, (2005, July-August) investigated that,

A serious introspection is needed with regard to the blind adoption of teaching methods/tasks in the field of language teaching in India, since the context of teaching invariably differs from country to country, and even from institution to institution within districts. This paper tries to look at one fact of task implementation viz. group work which is an offshoot of communicative language teaching and therefore, widely used. The impact of group work in large classroom is studied and opinions regarding usefulness and feasibility in terms of language acquisition, group management and monitoring have been analysed.


In this article,

i) What are ways of teachers learning?

ii) Focus on teaching skills

iii) Focus on subject matter and student learning capabilities was discussed.

In the Article “Teaching Method” - Manoj Kumar, (July - 07-13-2008) investigated that. There is need to change the methodology of impacting knowledge to the students. Ideally in the context of higher education, teacher should turn a guide by the side rather than a sage on stage. His role is to arouse the inquisitive instincts of the students and provide them with adequate opportunity to freely express through
interaction. Lecture method is oneway traffic. In the new context, it is imperative to go for some modern teaching methodology.

The benefit of group discussion, seminar method is that they widening their spectrum of knowledge particularly the application part of whatever theories they learn.

In the Article “Preparing a Lecture” was published by the investigator- G Prageetha Raju, (2008).

The following are the findings about lecture-

Is lecture an effective method of teaching?

If it is under what conditions is it effective?

When measures of knowledge are used, the lecture method proves to be efficient as other methods.

What are learners good for?

Gaining and Holding attention in the classroom.

How to make students think activity in a lecture situation?

Who is a ‘good lecturer’?

How can lectures be improved?

CONFERENCE -

“Key note Adress at the 5th Regional Conference of ELTAI at Kendriya Vidyalaya, Madurai”. (Nov-Dec., 2005).

The focus of this conference was on ‘The effective classromm transaction / instructional strategies.

The circular tasks of teaching can be accomplished by organizing the class in 4 different ways, these are -

Whole Class Teaching
Small Groups
Pair Work
Individualised Instruction.
They discuss then varieties of whole day class-teaching, lecture method, illustrated lecture, lecture cum demonstration-cum Buzz session. Lecture interposed with questions, seminars and symposiums, panel discussion, team teaching, project, workshop. They discuss the important role of teachers’ also.

WORKSHOPS -

There was National workshop on “Quality Assurance in Flexible Higher Education: Approaches and Strategies”. Organized by Yashwantrao Chavan Maharashtra Open University in collaboration with COL, Caned and NAAC, (28-30 June, 2004), Nasik.

In this workshop strategies of new teaching methods and development, teaching-learning process how can we make effectuated was discussed. Use of effective teaching aids, creation of learning environment in the classroom, encouragement of abilities, interest and needs of students were also discussed.

There was “Workshop for College Teachers on Quality Assurance”, (December, 24-30, 2007).

In this workshop the themes of the two sessions were ‘Effective Teaching’. They discussed the areas like ‘Four Pillars of Education, Higher Education Scenario, Teachers Accountabilities, the Levels of Teaching, and How to make Teaching Effective, How to select teaching material and methods appropriate to ability of students and also taught about rapid changes in knowledge, technology.

There was “Workshop on Innovative Teaching Methodologies”, (July 07-13, 2008).

A five-day Workshop on Innovative Teaching Methodologies was held recently at Shrimad Rajchandra Institute of Management and Computer Application, Gopal Vidyanagar, Bardoli. It sensitized the participations with current scenario in Higher Education and kept forward several statistics regarding higher education in India and other countries and tried to emphasize the importance of Higher Education and its impact.
They elaborated upon four pillars of Education - Learning to live together. Learning to know, Learning to do and Learning to be.

It threw light on “Teacher’s role in Holistic Development.”

**SYMPOSIUM -**

There was Symposium on, “*Networking for Better Teaching*”, (5th February 2005).

It had attempted to provide the direction to the teachers, while existing constraints, hurdles in effective performance and our roles in and outside of the classroom. Teachers’ role as per the need and objectives of learning was discussed.

**SEMINAR -**

There was Seminar on “*Intervention Strategies for Quality Enhancement for HEIs*” (April, 2005).

To enable teachers to acquaint themselves with innovative methods in teaching process and at the same time familiarize themselves with the quality objectives of higher education, a NAAC sponsored seminar was organized at Smt. Maniben M. P. Shah Women’s College of Arts and Commerce. It emphasized on the significance of intervention strategies as mechanisms for solving problems in the academic sphere.

It point out that the teachers themselves should be instrumental in devising various intervention strategies at their own levels in the educational setup.

The seminar had four technical sessions related to various topics such as ‘innovative teaching - learning methods objectives of higher education, proffessionalism in higher education and integrating extension activities into teaching learning process. Experts from various academic background presented their views on the topics.

_Prof. (Dr.) M. M. Salunkhe_, Vice-chancellor, Shivaji University, Kolhapur inaugurated a two-day NAAC sponsored National Seminar on “*Quality in Higher Education : Challenges and Opportunities*” on (6th March, 2005).
Speaking on the occasion, he called upon all the stakeholders in higher education, particularly teachers, to focus their potential sources towards upgrading the quality of life. Their focus on higher education should have greater concern for optimum use of local resources contributing towards the improvement of teaching learning, he stressed.

The second technical session was reserved for teaching-learning and evaluation. Ten research papers were presented on different dimensions of the issues involved in the process of teaching-learning and evalution by experienced teacher participants.

INTERNET -

"Brainstorming Method from Wikipedia, the free encyclopedia".
http://en.wikipedia.org/wiki/brainstorming
http://www.umn.edu/methods/1.htm
www.dauuniv.@in
www.vidyani.com

In this section investigator found steps, procedure, various roles, different types, implementation, suggestions, some keynotes for brainstorming.

NEWS PAPER -

चाहल्ला इंडोरे, गोंडे, ‘ब्रेनस्टॉर्मिंग : कल्पकतेच्या भांडाराची किंकडो’, दै. सकाळ - करिअर पुरवणी, (१४ ओक्टोबर, २००८).

In this article, with the help of Osborn’s Think up Method, problem solving, selection of group for discussion, creative thinking was explained for brainstorming. And also there was wider information of crative brainstorming, modified brainstorming, brain writing, brainstorming tool box, brainstorming software.

Kanupriya Mimani, in her article “Discussion in Style” - The Indian Express / The Financial Express, Pune, (Monday, December 18, 2006).

It throws light on following points,
i) What to do in a group discussion?
ii) How to start discussion?
iii) What to do if someone becomes aggressive?
iv) What if, others do not give you a chance to speak?
v) How to end discussion?
vi) How to take part in Group Discussion?
vii) How you can put forward points either in favour or against the topic?
viii) How to summarize the prints which the group as a whole have put forward?
ix) Position of leader and colleagues throughout the discussion and maintainance of good body language is an essential part of a Group Discussion.

MAGAZINE -

‘डॉ. अरंभ जोशी व सो. तजस्वीनी अनिल कदम , (मार्च २००७) : ‘चर्चा पद्धती व नाट्यीकरण पद्धती वा ऐथ्यापन पद्धतीच्या विशिष्ट ऐथ्यापन क्रमता व सामान्य ऐथ्यापन क्रमता यातील पर्स्परसंबंधाचा अभ्यास, शिक्षण समीक्षा’.

For the preparation of discussion fundamental questions, implementation of closure, use of evaluation aids, student response in evaluation, content knowledge and reinforcement are very important.

In discussion for preparation of closure open question, reinforcement, personality of teacher are very important. Among them reinforcement is very important.

2.2 REVIEWS OF RESEARCHES RELATED TO METHODS OF TEACHING -

The main purpose of the present investigation was to study the relative effectiveness of the lecture and the lecture-cum-discussion methods of teaching educational psychology to B.Ed. students studying in the four selected colleges of education of the University of Rajasthan. The study had the following objectives -

i) To study the difference between the gain in learning made by the students of average, above average and below average intelligence, when taught by the lecture and the lecture-cum-discussion methods.

ii) To assess the difference between the learning of high and low achievers taught by the two methods

iii) To construct an objective type test on psychology of learning the area of educational psychology which was covered under the experiment by the two different methods of teaching.

The experiment was carried out in four out of twelve colleges of education affiliated to the University of Rajasthan. A total of 160 students were selected for each of the experimental and the control groups.

A pretest-post test design was employed to measure the gain by different treatments.

The data were collected through achievement tests constructed by the investigators, the Raven’s Progressive Matrices, the Shrey’s Adult Intelligence Test, an interview schedule, and classroom observation.

The major findings of the study were -

i) Both the lecture and the lecture-cum-discussion methods were useful and suitable methods for teaching educational psychology to B.Ed. students as both succeeded in producing significant changes in student learning.

ii) There was no conclusive evidence to establish comparative efficacy of one method over the other from the results of the experiment.

iii) Nothing could be said about the superiority of either of the two methods as far as learning by different achievement groups (above average, average, below average) was concerned.
iv) The teachers found the lecture method more fatiguing and the lecture-cum-discussion method providing more mental satisfaction.

* The study helped the researcher for comparision of lecture method and group discussion method and statistical measures to be used.

There were some studies which attempted to experiment on innovative strategies of teaching.


The researcher design principally aimed at gathering data in the sorts of problems Asian teachers, at the lower grades of education, faced in the classroom and their ways of handling these problems as reflected in their suggested solutions and their attitudes towards innovation in classroom teaching.

The stratified proportional random sampling was used to select the teacher subjects in each country. A total of 5223 teachers from the following countries participated in the study, Afghanistan, India (Delhi and Kerala), Indonesia, Japan, Republic of Korea, Malaysia, Philippines, Singapore, Sri Lanka, Thailand.

According to the overall rank of the fifteen innovative measures, to which teachers’ attitudes were scaled, on the basis of cross-national mean percentages of favourableness, the following innovations were more favoured by the teacher respondents

i) mastery learning (78%)

ii) flexible grouping (75%)

iii) programmed instruction (73%)

iv) peer tutoring (73%)

v) integrated curriculum (72%)

vi) team teaching (72%)
The problem that many Asian teachers faced in the teaching learning process. And same innovative measures to which teachers attitudes were scaled are described in it.

Roy (1977) Investigated the effect of three styles of classroom questioning on hierarchical pupil achievement and found that lecturing, questioning and response with feedback, and the questioning response feedback sequence teaching styles has equal effect on the development of knowledge and applicable abilities and total achievement of pupils.


The broad objectives of the study were -

i) To find out the effectiveness of strategy S1 (lecturing and questioning - answering), strategy S2 (lecturing and questioning - answering by using behavioural objectives), and strategy S3 (discussion by using instructional materials) on the development of knowledge, comprehension, applicational ability and total achievement in geography of pupils of standard IX.

ii) To find out the effectiveness of strategy S1, strategy S2 and strategy S3 on the retention of knowledge, comprehension, applicational ability and total achievement in geography of pupils of standard IX. The sample consisted of 150 students of two Bengali medium schools. Their achievement was on the criterion tests developed by the investigator. The collected data were analysed through the technique of analysis of covariance.

The following were the major findings of the study -

i) Lecturing and questioning-answering by using behavioural objectives was found to be more effective than lecturing and questioning-answering for knowledge, comprehension, application and total achievement at post test level and for knowledge, application and total achievement at retention level.
ii) Lecturing and questioning-answering with behavioural objectives was found to be more effective than discussion by using instructional materials for knowledge, comprehension, application and total achievement at post test level and for application at retention level.

iii) Discussion by using instructional materials was found to be more effective than lecturing and questioning-answering for application at post test level and for knowledge, comprehension, application and total achievement at retention level.

iv) Lecturing and questioning-answering with behavioural objectives and discussion by using instructional materials were more effective than lecturing questioning answering positively and conclusively.

* The study was useful for the investigator for the determination of sample, procedure and statistical measures.

**Pillay (1978)** The effect of the pattern of teaching on creative thinking among adolescents was studied by Pillay and he found that the treatment of the creative teaching method, when compared with the traditional method, did not produce different effect upon general creative thinking and its sub part such as seeing problems, unusual uses and consequences of eight graders.

**Jha (1979)** It was an experimental study to find out the relative effectiveness of various methods of teaching Biology. The study was conducted on 60 students of Class X Bakipur Government Girls’ High School, Patna. The sample of 60 students were randomly divided into three groups. The first group was control group, the second was demonstration group and the third was activity group.

The investigator herself taught all the three groups after administering pre-test. Only one group was taught in a day. Post-test was administered at the end of the treatment. Analysis of covariance was employed to analyse the results.

The results were in favour of activity based approach of teaching science at school level. Activity group was found significantly better in
respect of acquisition of knowledge, application of the scientific knowledge and development of scientific skills.

**Joshi, S. M. and Kumar S. (1983)** The objectives of the study were as follows.

i) To find out the relative effect of teaching of two skill-based approaches on the development of teaching competence.

ii) To find out the effect of the skill-based approaches on the development of attitude towards teaching.

The data was collected with the help of an observation schedule and a scale of Measure Teaching competence developed by the investigators.

The statistical technique used for analysing the data were mean, SD and ‘t’ test.

The following are the findings of the study -

i) The mean performance was significantly higher in case of the group where the number of skills, time-duration and number of pupils gradually increased in the light of their teaching competence scores as against the group where all the skills were taken together.

ii) Development of attitude towards teaching did not differ due to the differential treatment given to both the groups.

**Prasada Rao Y. F. M. (1984)** Factors that Make a Lecture Effective at the College Level, Ph.D. Edu., MSU.

The objectives of the study were to find out

i) The factors that make a lecture effective in teaching arts, commerce and science subjects according to the teachers and students of arts, commerce and science faculties respectively.

ii) The dimensions of various factors that make a lecture effective in teaching arts, commerce and science subjects according to the teachers and students of arts, commerce and science faculties respectively.
iii) The factors and dimensions of various factors in common that make a lecture effective in teaching arts, commerce and science subjects according to the teachers and students of arts, commerce and science faculties.

The study employed the survey method of research. The tools used were

i) The factor categorization schedule

The sample consisted of 366 teachers and 442 students of both sexes belonging to the arts, commerce and science faculties, randomly selected from various colleges of Andhra Pradesh. Analysis was based on the percentage of preference for the various factors and dimensions.

The major conclusions were -

i) The most important factors which made a lecture effective in teaching arts, commerce and science subjects, according to the teachers and students, are (a) teachers preparation (b) securing students attention (c) explaining subject matter clearly (d) describing the subject - matter in detail.

ii) The personal factors involved in an effective lecture according to all the teachers and students were (a) ability on the part of the teacher to speak clearly (b) using simple language and (c) treating all students with equal friendliness.

iii) Teachers and students expected an introduction to a lecture to be brief and related to the previous topic.

iv) Teachers and students believed that the use of questions was the best means of securing students attention.

v) Students and teachers of arts and commerce faculties did not like the use of teaching aids in the classroom.

* Suggestions from this study inspired teachers for preparation of effective lectures.
**Talegaonkar (1984)** In the study he has tried to develop teaching strategies to encourage students for problem-solving in science creativity. He also used experimental design and the strategies like creative problem solving games, observation, question storming, group discussion, laboratory work, etc.

He has analysed the data through qualitative methods like graphic representation, median test, etc. These strategies were found to have favourable effect in science subjects.

**Joshi (1987)** developed an instructional strategy for teaching elements of science to class IX students. The strategy comprised programmed learning material, assignments, experiments, demonstration, discussion, test and discussion on the performance at test.

Richness could be brought into the teaching-process through this strategy, which was not possible through traditional method.

**Malhara, S. B. (1988)** compared the effectiveness of competition oriented and co-operation - oriented methods of teaching and found that co-operative methods of teaching were more effective than the methods of competitive teaching in developing various skills and creative faculties.

**Perumal, V. (1989)** A comparative study of the outcomes of teaching selected units in commerce by different teaching strategies at higher secondary stage. M.Phil. Education, Madurai, Kamraj University.

Problem - This is an attempt to study effectiveness of different methods of teaching commerce at the higher secondary stage, i.e. lecture method, group discussion method and assignment method.

Objectives -

i) To study the effectiveness of three teaching methods lecture method, group discussion method and assignment method.

ii) To evaluate the effectiveness of these three methods of teaching commerce in terms of students’ achievement at the +1 level at the higher secondary stage.
All 60 commerce students of Std. XI in Devangar Higher Secondary School, Chinnalapatty, constituted the sample. The post-test only equivalent group design was employed in this study.

Selected units of commerce were taught to two experimental groups by discussion and assignment method separately. The control group was taught by lecture method separately. Mean S. D. and ‘t’ test, ANOVA were usef for statistical analysis.

Major Finding -

i) Among the three methods of teaching, the assignment method was the most effective in teaching commerce.

ii) The group discussion method was more effective than the lecture method in teaching commerce (MKU 1061).

* This study was used for the investigator for the determination of procedure, sample and statistical measures.

**Ramani, M. V. (1989)** A comparative study of the outcomes of the teaching of some selected units on electronics by different strategies at the higher secondary level, Education, Madurai, Kamraj University.

Objectives -

i) To develop different lesson plans based on the four methods of teaching science.

ii) To study the effectiveness of different methods of teaching science. 40 students of Std. XI at the Government Higher Secondary School, Sholavandhan constituted the sample. Experimental method, the solomon four group design was used, ANOVA Test used for statistical analysis.

Findings -

i) Laboratory was more effective than demonstration method

ii) Group discussion was more effective than demonstration.

iii) Demonstration was more effective than lecture method.
This study helped the investigator for determination of sample procedure of method.


**Problem** - The attempt is to investigate the relative effectiveness of teacher’s classroom teaching techniques in relation to students.

**Objective** - To find out the effectiveness of four techniques of teaching-lecturing (T1), lecturing of explanation (T2), lecturing and explanation questioning answering (T3), and lecturing and explanation with questioning answering by using feedback (T4) on the development of knowledge (X1), comprehension (X2) and application (X4) of the pupils in a given teaching learning situation. The pupils were studying Clas IX, and the content for teaching as selected from history.

**Methodology** - The sample consisted of 100 student of class IX, divided into four groups, of Bengali medium school in Howrah, West Bengal. The 15 teaching units were planned in lessons of four types.

The tools used included Desai-Bhatt Group Test of Intelligence. Scio Economic Status Scale of Kuppuswamy. Pre-test of Achievements of history for Class IX, Lesson End Tests and Post-Achievement Test.

The collected data were treated using description statistics, product moment correlation, analysis of variance test, item difficulty index and the split-half method of reliability coefficient.

**Major Findings** -

i) Technique T2 (Lecturing and explanation) showed more effectiveness than T1 (learning) for knowledge. Comprehension and total achievement at the post-test level.

ii) Technique T3 (Lecturing and explanation with questioning-answering) showed more effectiveness than T2 (Lecturing and explanation) and T1 (lecturing) at the post-test level.
iii) Technique T4 (Lecturing and explanation with questioning answering by using feedback sequence showed more effectiveness than Ts3, Ts2 and T1 and post-test level, (SPB 01966).

* This study helped for investigator for comparision of lecture method and supporting methods.

Christian, Cheryl Lynn, (1994) Teacher’s role in classroom discussions: An analysis of three related discussions, Ph.D. The University of Texas at Austin. The purpose of this study was to learn how discussion environments are planned for designed and implemented in the classroom of a secondary English teacher who was well accustomed to leading her students into discussions. Specifically, the study addressed how an experienced teacher established a community of discussants and what the nature was of the first three whole-class student led literacy discussions of the semester.

An analysis of three related discussions reveals that the teacher encouraged students to initiate topics, express their views, and find a voice in the first discussion, enabled students to learn how to exchange views on a given topic in a coherent fashion in the second discussion, and modeled how to raise the level of a discussion in the third discussion. Results from the study suggests ways teachers can plan for, design and implement in their classrooms by preparing students establishing a social community and promoting the intellectual climate.


This research paper focuses on use of different innovative methods of teaching and it’s effectiveness for higher level students. There was purpose to evaluate the effectiveness of some of the innovative methods in comparision with the traditional lecture method.

In this study the investigator observed that, lecture demonstration method is not much effective but the discussion and assignment methods are highly effective for the B.Ed. students.
Similar Investigations concerning the interaction between teaching method and student characteristics indicated that students who achieved most in lecture situations were characterized by moderate achievement and social needs and low creativity (Doty. 1967, Hovey, Gruber & Terrell, 1963).

In the course of an experiment with small if directed learning groups in a social psychology course at Hope College, Beach (1970) studied the interactions in the groups to determine what types of activities were helpful and which were harmful to learning and to assess other possible desirable outcomes which might result from this approach to learning. “Experimental” students in the small learning groups were compared with “control” students who were not assigned to such groups.

Several studies were concerned with courses emphasizing student participation in contrast to straight lectures (Creiger, 1968, French & Cooper, 1967, Jason, 1969). Some considered the effects of manipulating class size in this respect (Feldhusen, 1963, However, Baumann, and Shafer, 1970) others assessed student attitudes toward class size (Stones 1969).

Joshi, D. C., Joshi, S. D., Joshi, S.M. and Patankar, S.D. done A study of the Classroom climate and Methods of Teaching adopted by Indian Universities, MSU, 1984 (UGC financed).

Some researchers studying the comparative effectiveness of different techniques and methods have also been undertaken below.

These studies cover the efficacy of the discussion-cum-demonstration method. (Pathania, 1985) on the achievement and learning of students in comparison with the efficacy of lecture methods of teaching.

The effects of brainstorming on divergent thinking (Sharma, 1980) and development of creativity using synetics (Venkataraman, 1985) have also been studied.

2.3 REVIEWS OF RESEARCHES RELATED TO LECTURE SUPPORTING METHODS -

Lecture Method -

The expression and clarity of information has importance in lecture while finding the relationship between student’s proficiency and explanation, Land observed that, student’s can grasp the concepts more effectively when the important items get priority and emphasis as well as the relevance of one item with the other item. zest, sense of humour, movement of liveliness are included in the expression of information, because of it, students respond to the lecturer. As the attitude of students are changed and they get/acquire proficiency.

The researcher has not been done about the item format and their structure during the lecture, but many/most of the lecturers use the traditional way of formatting the items of lecture, i.e. they structure (order of) the unit in sub-unit and again the sub-unit into sub-units. It is an important skill to decide the order of items and structure of the lecture. In this process, three components are important -

1. How the lecturer presents information ?
2. How does he explain the information ?
3. What does he use to create interest about information ?

By keeping in mind the above aspects, teacher makes the effective beginning of lecture as well as uses the different techniques like use of audio-visual aids, comparative discussion, formation of important items, action-oriented variety, and use of summary and we can learn these techniques through training.

Researcher has been done of different lecture styles of lecturers. Brown has stated 5 lecture styles. They are as follows as -

1. Information provides style.
2. Oral presenter style.
3. Exemplary Lecture style.
4. Self doubters style.

5. Amorphous lecture style.

In these 5 lecture-styles, exemplary lecture style is the best style because with this method the lecture scrutinise the visual and oral method. The visual information is majorly used in science and engineering discipline where as the oral presenter style is emphasised in art discipline/stream. Exemplar lecturers are observed in bio-medical, science and art discipline. Amorphous lecturers are found everywhere mostly in science, engineering and medical field. One research has stated that experience doesn’t make any kind of effect in choosing the lecture style.

After studying the lecturers of 33 expert lecturers, Sheffield has made following inferences -

1. We can motivate students for becoming prepared to action-orientated learning through lecture.

2. The lecture which enhances the active participation of students by developing their grasping power as well as arousing their interest in the lecture is the best lecture.

Kyle (1972) - What are the major types of lecture? At one of a continuum is the formal oral essay, the tightly constructed, highly polished kind of lecture that presents information primarily to support a summative point or conclusion. In this kind of lecture the professor has reviewed and selected from a large body of knowledge the theories, research studies, and arguments that supports his or her conclusion. The most formal of such lectures are written out and read to the students.

Kyle (1972) - Another common variation of the formal lecture is lecture-recitation, in which the teacher stops to ask specific questions or request students to read prepared material aloud. Lecture-recitations are the reverse of question-lecture classes because in this case the teacher provides questions and the students share what they know or have prepared. Class time in American colleges was once spent almost
exclusively on recitation, and some teachers and subjects (especially languages) still use it heavily.

2. At their best, oral essays are by no means boring. Listening to one can be an emotionally and intellectually significant experience. However, lectures such as these rarely occur in college classes for a very practically reason. A formal lecture for a fifty-minute class needs to be about 7,500 words long (Satterfield, 1978).

3. This is indeed a conundrum if one accepts the premise that the sole purpose of a lecture is to present information. Available research consistently concludes that lectures are one of the least effective methods of conveying information (Bowman, 1979, Thompson, 1974).

**Group Discussion Method -**

**McKeachie (1969)** - Many researches have been done to find out the effectiveness of Group Discussion. With those researches the group discussion method has got supports for it’s utility. Some of the discussion, the prejudices, misconcepts, idea which the student has in his mind are sorted, we can get glimpse of student’s attitude. Students get chance to express their views and they can give a proper feedback.

*Human Research Group -**

**Almaste (1970)** - If you feel that students should have the better comprehension of any subject, topic, the group discussion method is effective for that purpose. Students get enhancement in the expression. The problem is solved more effectively through discussion. The group discussion is effective to create a positive view about the syllabus.

**Costiyo (1972)** - Researcher has been done for the different teaching methods as well as comparative study has been done. One of the researchers has the observation that the lecture method is more useful for the teaching of fact and information but students get understand the difficult concepts more clearly with group discussion. With the group-discussion students have command on self-learning.
Laphaso (1972) - When teacher arranges group discussion, all students listen each-other’s views attentively, afterward respond to the views that means the process of communication takes place as well as it increases the confidence level, and development of social and leading skills took place.

Gage - Briefly, for the highest quality of learning the group discussion is importance.

Eble (1976) - Do the students have interest for the group discussion method? To get the answer of this question researcher were made the inferences are as -

i) Students like group discussion method as it gives more scope to learning and makes learning more effective.

ii) Students does not like lecture method as like the group discussion method.

Discussions must be well planned in order to be effective, but their quality also depends greatly on how well the instructor performs. Leading an excellent discussion demands just as much stage presence, leadership, and energy as presenting a lecture - and considerably more interpersonal requirements, some educators believe that leading an outstanding discussion is more difficult than giving a lecture of comparable quality.

Smith (1977) - Group discussion method and related content has gained some inferences because of research. To apply concepts to solve problem, the group discussion method is appropriate, (Abal, Gol & Gol 1979, Smith 1966), Narrative thinking process get scope through the group thinking, discussion and so one gets the high quality cognitive skills.

As McKeachie notes, “Discussion is probably not effective for presenting new information which the student is already motivated to learn” (1978, p. 350). Though not effective for presenting content per se, discussion does aid its mastery by encouraging students to actively process what they learn as they sit in class. Asking a few students to think and speak out loud encourages all students to think more fully about content.
Discussion helps students to assimilate and integrate information they have initially acquired from readings or lectures.

Discussion also takes different qualitative forms. In one, an instructor listens to student complaints on administrative matters. Gripe sessions give the teacher important feedback and promote interpersonal rapport by letting students “blow off steam” and showing the teacher’s interest in their problems (McKeachie, 1978). Because this kind of discussion deals exclusively with group maintenance concerns, however, frequent use of it can be counter-productive because it takes time away from the group’s task.

**Delon (1985)** - Do the lessons of Group discussion method get the same response as the response to the teacher’s questions. With the observation, it was cleared that the teacher’s questions get the structured and simple responses, whereas the statement get the eclective, inclusive resoneses and explanatory responses. The reason is that the discussion is made for the discussion of statement.

**Gol and Gol (1985)** - Group discussion method is useful for increasing the confidence of students to make changes in their expression, attitude and to increase their grasping power.

**Brain Storming Method :-**

**Homense (1951)** - How to manage / organise group discussion ? Researches have been made for the question.

To do the discussion, there should be minimum 5 to 6 person or maximum 20 persons. Group should be eclective.

**Brown and Deloache (1968)** - Both of them tried to find solutions for the selection of problem. According to them, small students respond to the stimulus but the effect of stimulus doesn’t remain for a longer time on them but for big students it has a lasting effect.

**Novell and Simon (1972)** - It is essential in the beginning to look individually and scarstically on the identification of problem, forming/
designing problem and representing psychologically. Briefly, it is essential to relate the problem with the active memory/work.

**Sternbern (1977)** - According to him, to use one solution unnecessarily / often for one problem can create more mistakes and wastage of time.

**Grino (1978)** - According to him, specific problems need specific kind of application processes. So the problems can be categorised differently.

**L. S. Vyogotsky** states in hsi ‘Zone of Proximal Development’ - To tell the keen details of theory to the students is like to carry them in new field of problem solving and this new field is adding knowledge and leading edge for the students.

**Stenberg (1977) - Stenberg and Rifkin (1979)** - It creates major mistakes by following the method of ending stimulus by onself.

**Grino and Heidge (1980)** - According to them, after fixation of mental picture of problems one has to thought and decide steps of action then does action plan of available aids that how to solve problems.

**Plawel (1981)** - According to him, what students have done ? What are they doing ? What they have to do, to solve problems there is need to keep more concentration on it. So that monitoring of prlbme solving will develop.

**Schoenfield (1985)** - According to Schoenfield students take too much time for solving problems. If students did not get answer within a 5 minutes, then one should consider that the applied method by the student is wrong.

**Kotoverstay, Hage and Simon (1985)** - After a great research, he found the the keynote that - whether the pattern of questions is formed psychologically / whether the questions are structured psychologically the essential and important thought.

**Peterson and Comeaux (1987), Nelson (1988)** - They observed that, the experienced teacher’s give explanatory answers regarding the context
of the problem and try to justify their views. According to Nelson, experts try to establish / assert the decisive, creative and descriptive principles and options in accordance with the phenomenon and it’s reasons which later prove to be the proper options for the problems.

Lave (1988) - He states that - to find solution for school problems is different that finding solutions for other problems. One can find proper and assured option, answer as well as method for school problems.

Lesgold (1988) and Lesgold et al. - With his experiences and observations, it is made quite clear that while finding the solution for the problems, experts took much time for the study of Radiology than the trainees, because they gave emphasis on the innovativeness of problem than the trainees.

Greeno and Simon (1988) - According to them, to find solution for the problems of missionaris and cannibals, one has to think over the 4 stimulating types of self-reseach / introspection method.

Domen and Phlps (1989) - While explaining the relationship between the teacher and student, he says that - when teacher teacher students face to face, he can convey his opinion, views more vividlly and it is the live and teaching.

Frensch and Sternberg (1989) - According to him, the teacher has the old techniques and methods in his mind but the new students overcome/face the problems with new prospective. In other words, they use innovative ideas and tricks for solving the problems which are worth mentining as it is not stagnant like a pond but a stream.

Charles and Silver (1989) - According to them, teaching and exams have become the nucleus of education for solving the problem. The administrators, curriculum developers and educational experts have approved that the curriculum should have the base of problem solving. The point of problem solving has been considered important in the developoing of national and international education.
Cognition Technology Group (1990) Video and Computer - Student will learn the skill of creating atmosphere / surrounding with the help of technology. This method was used by Cognition Technology Group in Vanderbitt University. The references for problem solving were kept in front of students in 6 series of 15 minutes. The problems of life over much complicated than the business problems or injured Eagle’s problems.

Chase and Simon - While working for varied purposes, the mental processes work differently for problem solving. According to him, the experiences and knowledge which the person has with him, help him to solve the specific problems.

* Steps of problem solving -

1. Title of the problem.
2. Creation of introvert representative.
3. Decoding.
4. Planning.
5. Selection of Method / technique.

2.4 CONCLUDING REMARKS -

The following points emerge from the review of related literature as mentioned above.

1. Major studies were conducted on Teaching methods.
2. Comparatively work on methods of teaching was more.
3. Student teachers performance except cognitive domain was not tested by any work.
4. The conventional method of teaching different subjects at various levels was found to be less effective than various innovating lecture supporting methods.
5. It is difficult to determine which instructional strategy, pattern of teaching is most appropriate for teaching different subjects at various levels. This is due to the fact that no two studies are alike.

6. The studies differ in respect of design, sample tools treatment, dependent variable etc. hence, the findings of one study are not strengthened or supported by the similar study.

7. However, the light of the studies conducted on method of teaching it was found that symposium, seminar, group discussion, brainstorming methods were significantly superior to the traditional method in terms of student teachers’ achievement and attitude towards the subject.

8. Studies on brainstorming method were less.

9. Methods of teaching are quite necessary to meet multidimensional objectives to be achieved through teaching-learning process.

10. Review of the related studies helped the researcher to select research design, planning the programme of action, preparing and using self learning materials, tools and the process of analysis of obtained data. The study of related literature makes it clear that there is a need to do following things.

The present educational system is ‘teacher centered’. Many teachers take the shelter of lecture method in the classroom teaching and give more stress on memorization and students use memorization as the supreme method of learning. They learn principles, theories, and laws without empirical testing. This method of acquiring knowledge does not encourage problem solving and decision making abilities of the students. The students are not allowed to ask their doubts and necessary queries. This affects adversely on the natural abilities of students such as self-search, problem-solving.
The teacher should provide up-to-date knowledge to the students in order to develop the inborn abilities, capabilities and desirable attitudes. They should help the students to be independent, self-learner.

To fill in all these gaps the researcher decided to undertook this study.