

Teaching Strategies

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Agarwal, R. and Misra, K.S. 1988. **Effectiveness of Reception Concept Attainment Model of teaching for enhancing attainment of science concepts.** *Indian Educational Review*, Vol. 23(2): 130-36. [ERIC Funded]

Problem: This study addresses the problem of achievement of science concepts and the students of Class VII, by using the Modified Reception Concept Attainment Model of Teaching (MRCAMOT) as an effective alternative.

Objective: To investigate the effectiveness of the Modified Reception Concept Attainment Model of Teaching (MRCAMOT) for enhancing the attainment of science concepts.

Methodology: Random Sampling was adopted to select 18 students studying in Class VII of the Government Girls Intermediate College, Allahabad, in each of the two groups, the experimental group and the control group. The randomised control group pre-test and post-test design was used. The data were treated using the Mann-Whitney U-test.

Major Findings: (1) The MRCAMOT was decidedly effective in increasing the knowledge and understanding of science concepts of Class VII students. (2) It helped in students' concept attainment. [HLS 1108]

Ashraf, Mohamed. 1988. **A case study of selected Delhi schools with special reference**

to innovative classroom practices. Ph.D., Edu. Jamia Millia Islamia.

Problem: It is a case study of innovative classroom practices in select schools of Delhi.

Objectives: (i) To study some schools in Delhi sociologically with a view to understanding the sociological context of the innovations introduced in their classrooms, (ii) to study the ongoing as well as the left-over innovative practices in their classrooms, (iii) to study the impact of those innovative classroom practices on students, teachers, schools and the community, and (iv) to make generalisations about the factors facilitating and obstructing innovations in schools.

Methodology: Thirty-two senior secondary schools in Delhi were randomly taken in the sample. Thirty-five case studies of educational innovations in these schools were prepared. The tools used included a Questionnaire, an Interview Schedule, and an Observation Guide. The collected data were treated using qualitative methods.

Major Findings: (1) As many as 28.57% schools had electrical gadgets, photography, commercial art, tailoring, interior decoration, campus cleanliness and beautification, meal-planning, tie-and-dye, gardening and woodwork. (2) The location of the schools was not an effective factor for smooth functioning of an innovative classroom practice. (3) In aided and unaided

schools, the degree of achievement of the objectives of educational innovation was found to be higher than that in government schools. (4) The sex of the students and teachers was also an important factor in the success or failure of an innovative classroom practice. (5) The degree of achievement of the objectives of innovations introduced was not so high in only Hindi- or Urdu-medium schools and in schools where both Hindi and English had been adopted as mediums of instruction. (6) The planning of an innovation counted a lot in its smooth functioning. (7) Innovations were comparatively more successful in such schools where the teachers were not transferred in comparison to those schools where the teachers were frequently transferred. (8) Shortage of time or non-availability of time had been a very serious hurdle in the success of an innovative activity. (9) The absence of funds had a direct and adverse impact on the smooth functioning of an innovation. (10) Non-availability of funds had a direct and adverse impact on the smooth functioning of an innovation. (11) There were several hurdles in the successful completion of innovations, e.g. shortage of proper space, lack of competition, too much emphasis on formal examinations, large number of students, shortage of equipment, lack of coordination among the staff, lack of properly trained staff, lack of publication facilities and lack of parental cooperation. [SPR 0598]

Bawa, M.S. 1991. **Conceptual learning and research possibilities: Bruner's view.** *Indian Educational Review*, Vol. 26(2): 46-60.

Problem: The study centres round concept learning, which is the most important part of academic discipline. Concepts acquired with understanding serve as tools not only for acquisition of new concepts but also for solving problems. Research studies in the area have an obvious bearing on teacher education.

Objectives: (i) To examine critically the concept of conceptual learning, (ii) to explain what

conceptual learning is, (iii) to describe Bruner's ideas on the nature and acquisition of concepts and strategies that can be used in concept attainment, and (vi) to describe the Concept Attainment Model (CAM) based on Bruner's ideas, and review the researches conducted during the last six years.

Methodology: The researcher reviewed all possible sources in the library from among the documented studies. The researcher used qualitative methods for analysis.

Major Findings: (1) One common characteristic feature running across all the definitions given was that there was an abstraction process in which similarities in objects were stressed and differences in them were ignored. (2) The Concept Attainment Model (CAM) was more effective than the conventional method for the teaching of concepts, especially at the knowledge and understanding levels, for retention of concepts, and for bringing about attitudinal changes. [HLS 1499]

Bhaveja, Bharati. 1989. **An experimental study of information-processing models of teaching in schools of India.** Ph.D., Edu. Univ. of Delhi.

Problem: The study was an investigation into the effectiveness of the information-processing models of teaching designed to teach concepts inductively, taking concept-attainment, retention and development of inductive mental processes as the measures of effectiveness.

Objectives: (i) To analyse the thinking strategies or concept-building strategies used by learners of the group exposed to the model-based programme (developed in biology) of teaching in terms of Bruner's ideal thinking strategies, (ii) to identify the most effective strategies of thinking from among the strategies used by the subjects, (iii) to identify the instructional conditions which favour selection of the most effective thinking strategies, and (iv) to determine the role of this model in developing inductive thinking in terms

of the ability to form conceptual systems, abstractions or generalisations from discrete bits of information.

Methodology: Using the purposive sampling method, 99 students (29 girls and 70 boys) were distributed among the experimental and control groups. They were further divided into two groups. The tools used included Raven's Progressive Matrices (Advanced), a Criterion Test developed by the researcher, and an Interview Schedule, developed in the affective domain. Mean, SD, 't' test and chi-square were used to treat the data.

Major Findings: (1) Subjects who were exposed to the teaching programme based on information-processing models of teaching, viz. concept-attainment and inductive thinking, demonstrated significantly higher mean values on concept-attainment, as compared to the mean values achieved by the subjects who were exposed to the traditional teaching programme. (2) On comparing the mean scores of experimental and control groups, obtained on delayed post-tests, it was found that subjects who were exposed to the model-based teaching programme achieved a significantly higher mean value than the subjects who were exposed to the traditional teaching programme. (3) Subjects who underwent the model-based teaching programme formed a significantly greater number of complex categories (conceptual system), as compared to the subjects of the control group who experienced the traditional teaching programme. (4) It was found that in the final inductive-thinking lesson, significantly greater number of higher-order generalisations were made (Interrelating the concepts formed and extrapolating (going appreciably beyond what is given)). This suggests that the inductive-thinking model was effective for teaching inductive mental process requiring extrapolation, i.e. proceeding from specific data to generalisation. (5) The mean values obtained on the number of categories formed and the number of abstract concepts formed in the final inductive-thinking lesson were significantly

higher than those formed in the initial lessons. [RDM 0349]

Bhaveja, Bharati. 1989. **Information-processing models of teaching in the Indian classroom.** *Indian Educational Review*, Vol. 24(1): 143-49.

Problem: The study focuses on suitable teaching strategies for science, which would help in achieving a wide variety of science-teaching objectives.

Objectives: (i) To study the efficacy of CAM and ITM with regard to the degree of conceptualisation in biology, (ii) to analyse the thinking strategies used by learners, (iii) to evaluate the thinking strategies used in terms of achievement, (iv) to identify effective thinking strategies, (v) to suggest learning environments which will promote the selection of effective thinking strategies, and (vi) to study the effect of teaching models (CAM and ITM) on retention.

Methodology: Twenty-two students of Class IX from an English-medium school were taken as the sample of the study. An experimental design consisting of matched groups with pre-test, post-test and delayed post-test (retention test) was adopted for the study. The data collected were subjected to statistical analysis. Mean, SD and 't' test were applied to treat the data.

Major Findings: (1) The model-specific outcomes were realised. (2) The students who underwent lessons through the models showed better conceptualisation. (3) The focusing strategy gave the best results in terms of success. (4) Teaching through models helped in retention. [HLS 1521]

Bhola, H.S. 1990. **Planning for implementation: A conceptual update of the CLER Model.** *Indian Educational Review*, Vol. 25(1): 1-12.

Problem: The research paper addresses the problems of application of the CLER Model—the configurational theory of innovation diffusion, planned change and development—in the present

context, owing to the conceptual development the model had undergone.

Objective: To focus the attention of scholars and researchers of policy development, planning and implementation processes, on the conceptual development which the CLER Model had undergone.

Methodology: The CLER Model identified four types of social configurations: Individuals (I), Groups (G), Institutions or Organisations (IS) and Communities or Subcultures (CL); and 16 different types of innovator-adopter relationships were identified. In 1984, the author/researcher presented the CLER Model as an ensemble of three entities to make dialectical assumptions of the model quite explicit—{P}, {O} and {A}—in which {P} stood for planner system, {A} for adopter system and {O} for the objective of change which was the preferred 'innovation', as suggested by other researchers in 1982. Again, power is defined in the CLER Model (CM) both as the instrument and the definition of change.

Major Findings: (1) CM was found to be useful in a variety of institutional settings—from education, communication, community extension to health delivery's business to the delivery of police service in the U.S.A. in a major metropolitan area. (2) CM was found to be useful in developing case studies in the planning of change for evaluating the effect of change, for conducting scholarly research and for organisation of knowledge for utilisation. (3) CM provided an excellent tool for theoretical integration of the field. (4) CM could be used to develop concrete ideas about actual intervention, and allowed a variety of approaches and value preferences. On the one hand, CM accommodated the role of leadership, and on the other, it could be used for participator change strategies. [SPBa 1484]

Chaudhury, Kamlesh. 1989. **Teaching of concepts through the Concept Attainment Model and facts through traditional teaching: Competency in teaching skills of pre-service teachers.** Independent study, *Univ. of Poona*.

Problem: This study addresses the rigidity and lack of variety of the present pre-service teacher training programmes based on micro-teaching and the Herbatian steps. The study aims at finding out whether student-teachers trained to teach concepts in science through Bruner's Concept Attainment Model would indirectly learn the teaching skills and be equally competent in using such skills to teach facts through traditional teaching.

Objectives: (i) To find out if student-teachers had indirectly learned the teaching skills during college-based peer practice and school-based practice teaching, and (ii) to find out if there was any difference in their competency in the various teaching skills during teaching of concepts through the Concept Attainment Model (CAM) and the teaching of facts through traditional teaching (TT).

Methodology: The sample comprised 10 female student-teachers of Adarsha College of Education and Research, with science as one of the methods who were trained in Concept Attainment Model.

To collect the data, the Process Appraisal Scale of Teacher Effectiveness (PASTE) developed by Bhalwankar (1981) and Bruce's Concept Attainment Model were used. The collected data were treated using mean, SD and 't' test.

Major Findings: (1) There was no significant difference in the competency of student-teachers in stating the aim. However, few students showed improvement while teaching during traditional teaching, even though these skills were taught directly. (2) Two student-teachers had performed better in the skill of questioning, and three student-teachers performed better in the skill of explaining; one had performed better in the skill of reacting; one had performed better in the skill of stimulus variation; and the students had improved in the skill of evaluation. (3) Two student-teachers had improved in the skill of classroom management, and one had better content mastery. [KC 0081]

Dhoundiyal, N.C. 1987. **Expectancy biases among student-teachers: Formulation and test of the effectiveness of a remedial strategy.** Ph.D., Edu. Kumaun Univ.

Problem: The study investigates the nature of expectancy biases and their effects on student evaluation, and formulates a remedial strategy to restructure expectancy biases among student-teachers.

Objectives: (i) To survey the expectancy biases (EB) prevalent among student-teachers of B.Ed. level, (ii) to analyse the EB of student-teachers in relation to their personality characteristics, (iii) to assess the influence of EB of student-teachers on their evaluation of students, (iv) to formulate and test the remedial strategy in restructuring inappropriate EB of student-teachers, and (v) to suggest ways and means to remove the EB among student-teachers and in-service teachers.

Methodology: The sample included 377 student-teachers of the B.Ed. course of Kumaun University. The tools used were Personal Data Schedule developed by the investigator, Socio-economic Status Scale by Kapoor et.al. Teacher Expectancy Bias Questionnaire (TEBQ) developed by the investigator, Equivalent Essays of Student, physically attractive and unattractive photographs of students and positive and negative name-stereotypes among student-teachers selected by the investigator, and Testing Situations Analysis Questionnaire developed by the investigator. The remedial strategy included the knowledge of social differentiation, its reflection in the classroom, existence of EB among teachers, existence of inappropriate expectations, ways and means to prevent EB, workbook, and direct assistance through lectures. The collected data were treated using the chi-square test, McNemar test and 't' test.

Major Findings: (1) A significantly large percentage of student-teachers were male-positive, while female-positive and sex-neutral student-teachers were lower than expected on

an equal probability basis. A high percentage of high caste positive, caste-neutral category, SES-neutral, physical attraction positiveness, and name-stereotype positiveness was observed to differ significantly from chance occurrence. A lower percentage of average SES-positive, unattractive-positive, name-stereotype negative were also observed to differ significantly from chance occurrence. (2) Out of six personal characteristics in the sex bias category, only sex and study discipline were associated. The bias towards one's own sex was more prevalent among male teachers, while females were more biased towards the opposite sex. Student-teachers with science background were male-positive and sex-neutral as compared to student-teachers (ST) of arts. Caste-bias was associated with education and caste. Graduate ST were more caste-neutral and middle caste positive while post-graduate ST were more high caste positive group. Caste-neutrality was frequent in the lower caste ST, while the higher caste ST tended to favour high-caste students. SES-bias was associated with study discipline only, ST of science background favoured students of average SES, while ST of arts favoured low-SES students. Physical attraction and name-stereotype bias were independent of the personal characteristics of the ST. (3) No significant difference was found on mean scores of essays with sex variation when evaluated by sex-neutral ST. A significant difference was found in high, middle and lower caste essays when evaluated by high caste positive ST but no difference appeared when the essays were evaluated by middle caste-positive, lower caste-positive and caste-neutral ST. (4) The SES-bias of ST was not associated with the evaluation of three caste essays, except low SES positive with ST evaluated essay of average SES student in high manner as compared to that of high SES student. The physical-attraction-positive ST evaluated essay related with attractive photograph in high manner compared to the essay related with unattractive photograph. The ST of different name-stereotype groups evaluated the essays in equal manner. (5) No significant

difference was obtained in changes from biased to neutral and from neutral to biased directions in all expectancy biases in the control group. In the experimental group, the changes were significantly more frequent from biased to neutral direction than the opposite for each of the five biases. (6) The induction of remedial strategy in the experimental group of male-positive ST resulted in non-significant difference between mean scores of male and female essays at the post-test stage. The female-positive ST evaluated the essay in equal manner in the experimental group. The high caste-positive ST changed the tendency to a more favourable evaluation of low caste essay. The physical-attraction positive ST of the experimental group evaluated the essay of attractive and unattractive students in equal manner at the post-test stage. [BS 0964]

Gangopadhyay, Tapan Kanti. 1991. **An experimental study of the effectiveness of classroom teaching techniques in relation to students' achievement.** Ph.D., Edu. Univ. of Calcutta.

Problem: The attempt is to investigate the relative effectiveness of teachers' classroom teaching techniques in relation to students' achievement.

Objective: To find out the effectiveness of four techniques of teaching — lecturing (T1), lecturing and explanation (T2), lecturing and explanation with questioning-answering (T3), and lecturing and explanation with questioning-answering by using feedback (T4)—on the development of knowledge (X1), comprehension (X2) and application ability (X3) as well as the total achievement (X4) of the pupils in a given teaching-learning situation. The pupils were studying in Class IX, and the content for teaching was selected from history.

Methodology: The sample consisted of 100 students of Class IX, divided into four groups, of a 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, Socio-economic Status Scale of Kuppaswamy, Pre-test of Achievement of history for Class IX, Lesson-End Tests and Post-Achievement Test. The collected data were treated using descriptive statistics, product-moment correlation, analysis of variance, 't' test, item difficulty index and the split-half method of reliability coefficient.

Major Findings: (1) Technique T2 (lecturing and explanation) showed more effectiveness than T1 (lecturing) for knowledge, comprehension and total achievement at the post-test level. (2) Technique T3 (lecturing and explanation with questioning-answering) showed more effectiveness than T2 (lecturing and explanation) and T1 (lecturing) at the post-test level. (3) Technique T4 (lecturing and explanation with questioning-answering by using feedback sequence) showed more effectiveness than T3, T2, and T1 at the post-test level. [SPB 0196]

Gupta, Suman. 1991. **Effectiveness of the Advance Organiser Model of Ausubel in developing the teaching competence of student-teachers, and their attitude towards teaching: An experiment.** Ph.D., Edu. Agra Univ.

Problem: This is an experimental study and the researcher has assessed the effectiveness of Ausubel's model in developing teaching competence.

Objectives: (i) To compare the effectiveness of teaching through the AOM of Ausubel and the conventional method in the simulated condition in development of the teaching competence of student-teachers, (ii) to compare the effectiveness of teaching through the AOM of Ausubel and the conventional method in real classroom conditions in development of the teaching competence of student-teachers, and (iii) to compare the effect of teaching through AOM and the conventional method on the attitude of student-teachers towards teaching.

Methodology: The sample comprised 100 B.Ed. students of the 1985-86 session from Bijnor and Dhampur teachers' training colleges, who had offered Hindi as one of the teaching subjects. The purposive sample procedure was followed. The tools used included Teacher Attitude Inventory of S.P. Ahluwalia, Teaching Competency Scale of NCERT, and Model Assessment Guide. Mean, SD and 't' test were used to treat the data.

Major Findings: (1) There existed a significant difference in the teaching competence between the experimental and the control groups of student-teachers. The effect of training on the AOM approach on the experimental group was visible as they had high teaching competence in the simulated condition. (2) There existed a significant difference in the teaching competence between the experimental and control groups. It was indicated that the experimental group was better after using the AOM of Ausubel so far as teaching competence was concerned in the real classroom situation. (3) There existed a significant difference in the attitude of the experimental and control groups of student-teachers. There was the effect of the AOM approach on the attitude of the experimental group of student-teachers. [SS 0794]

Jaimini, Nirupama. 1991. **Effect of teaching strategies on conceptual-learning efficiency and retention in relation to divergent thinking.** Ph.D., Edu. Univ. of Delhi.

Problem: This study investigates the effect of two major teaching strategies and their interaction with creativity on learning outcomes in terms of learning efficiency and retention.

Objectives: (i) To study the relative effectiveness of teaching through the Advance Organiser Model (AOM), Concept Attainment Model (CAM) and Conventional Model (CM) on (a) conceptual learning efficiency, (b) retention of concepts, and (ii) to compare the performance of the pupils on (a) conceptual learning, and

(b) retention of concepts in relation to their divergent thinking (High and Low Divergent Thinking, i.e. HDT and LDT).

Methodology: Using the purposive sampling method, three sections of Class IX of G.G. Senior Secondary School, Delhi were selected. The quasi-experimental, non-equivalent control-group design was used. The researcher used pre-test and post-test design with two experimental groups for two strategies, i.e. AOM and CAM, and one control group, i.e. CM. The tools used included Standard Progressive Matrices by Raven, Mehdi's Test of Creative Thinking, and Criterion Tests developed by the researcher. ANCOVA was used to treat the data.

Major Findings: (1) AOM and CAM were both more effective than the conventional method (CM) in fostering conceptual learning efficiency in terms of comprehension and application. (2) AOM and CAM were both equally effective in concept-learning. (3) Interaction of teaching strategies and divergent thinking was significant in the concept-learning of pupils. (4) The concept-retention of the pupils was not significantly influenced by their divergent thinking ability; rather, it was significantly influenced by the teaching strategy. (5) AOM was more effective than CAM in the retention of concepts by the pupils of high as well as low divergent thinking. [RDM 0350]

Jana, B. 1989. **Pupil growth under Nurturant-effect Strategy and traditional strategy through exploratory data analysis techniques.** *Indian Educational Review*, Vol. 24(3): 33-48.

Problem: The study relates to the growth and development of the personality of children. It provides some basis for the sustained growth of the personality of children.

Objectives: (i) To determine and study pupil growth at the end of a two-year long instruction given to the pupils under the nurturant-effect strategy and the traditional strategy, (ii) to study the distribution of growth at the end of two years,

(iii) to study the schematic plot of the relationship between growth during two years and initial differences from cent per cent (100%) achievement, drawn both for the nurturant-effect strategy and the traditional strategy, (iv) to compare the schematic plots obtained from the nurturant-effect strategy, and the traditional strategy, and (v) to analyse smooth median and hinge traces for relationship between growth during two years and initial differences from cent per cent (100%) achievement.

Methodology: Pupil growth during two years commencing at varying initial differences from cent per cent (100%) achievement was determined. Distributions of growth to the end of two years for slices on initial differences from cent per cent (100%) achievement were studied. A schematic plot of the relationship between growth during two years and initial differences from cent per cent (100%) achievement was drawn, both for the nurturant-effect strategy and the traditional strategy. The schematic plots obtained from the said two strategies were compared. Smooth median and hinge traces for the relationship between growth during two years and initial differences from cent per cent (100%) achievement were analysed graphically.

Major Findings: (1) The first null hypothesis regarding no real relationship between pupil growth and initial differences was rejected. (2) From the study of the schematic box plot relationship between growth and initial differences, it was found that those furthest behind cent per cent achievement tended to show the least growth. In other words, pupils who had poor achievement at the initial stage had lesser growth at the end of the two years than those who were better achievers initially. (3) The curve relating to smooth median and hinge traces revealed the increasing gain from those initially furthest behind cent per cent of achievement to those initially not so far behind. (4) There was positive relationship between pupil growth during the two-year long instruction and initial differences from cent per cent (100%) achieve-

ment under the traditional strategy. [MPR 1439]

Jayappa, M.S. 1991. **The perceptual approach to good teaching, development and validation.** Ph.D., Edu. Karnatak Univ.

Problem: The effectiveness of the teacher is dependent upon the 'internal formulas' which select and control his behaviour as he is confronted with changing situations. These 'human formulas' are the perceptions he holds of himself, his purpose and the world in which he lives and operates. The present study is an attempt to apply this premise in defining good teaching.

Objectives: (i) To investigate the relationship of self-perception with good teaching, (ii) to investigate the relationship of student perception with good teaching, (iii) to investigate the relationship of teaching-profession perception with good teaching, (iv) to investigate the relationship of instructional-goal perception with good teaching, (v) to investigate the relationship of learning-process perception with good teaching, and (vi) to determine the extent of contribution of the perceptual factors to good teaching.

Methodology: Four hundred student-teachers who appeared for the T.C.H. course examination, conducted by the Secondary Education Examination Board, Government of Karnataka, in March/April 1988, from seven different teacher-training institutes of Chitradurga and Bellary Districts of Karnataka State constituted the sample. Standardised tools to assess self, students, teaching profession, and instructional-goal perception of the student-teachers were used. A learning-process perception scale was also developed and used. Correlation and regression analysis techniques were used for statistical analysis.

Major Findings: (1) The relationship between self-perception (S.P.) and the criterion of good teaching was found to be significant. (2) The relationship between student-perception (St.P.)

and the criterion of good teaching was found to be significant. (3) The relationship between teaching-profession perception (T.P.P.) and the criterion of good teaching was found to be significant. (4) The relationship between instructional-goal perception (I.G.P.) and the criterion of good teaching was found to be significant. (5) The relationship between learning-process perception (L.P.P.) and the criterion of good teaching was found to be significant. (6) 54.76% of variation in the criterion of good teaching was accounted for by perceptual factors like S.P., St.P., T.P.P., I.G.P. and L.P.P. taken together. [KR 0589]

Joshi, S.M. and Kumar, S. 1983. **Effect of the skill-based approach and decision-making ability on the development of teaching competence.** Independent study. *The Maharaja Sayajirao Univ. of Baroda.*

Problem: The study examines the effect of the skill-based approach and decision-making ability on the development of teaching competence among teacher-trainees.

Objectives: (i) To find out the relative effect of teaching of two skill-based approaches on the development of teaching competence, and (ii) to find out the effect of the skill-based approaches on the development of attitude towards teaching.

Methodology: A purposive sample of 22 B.Ed. students was selected for the study. The data was collected with the help of an Observation Schedule and a Scale to Measure Teaching Competence developed by the investigators, ten Observation Schedules for measuring various skills developed by Joshi, Lalita and Passi, an Attitude Scale Towards Teaching Profession developed by Yadav and Pandya, and Raven's Standard Progressive Matrices. The statistical techniques used for analysing the data were mean, SD and 't' test.

Major Findings: (1) 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. (2) Development of attitude towards teaching did not differ due to the differential treatment given to both the groups. [MSY 0920]

Kaur, Rajinder Pal. 1991. **Effectiveness of the Bruner and the Ausubel models for teaching of concepts in economics to high and low achieving students across creativity levels.** Ph.D., Edu. *Punjabi Univ.*

Problem: The study attempts to compare the effectiveness of the Bruner and Ausubel models for teaching concepts of economics to students having different levels of achievement and creativity.

Objectives: (i) To determine the teaching effectiveness of Bruner's Concept Attainment Model, Ausubel's Advance Organiser Model and conventional teaching in the teaching of concepts in economics in relation to the various levels of academic achievement and creativity of students, (ii) to compare the teaching effectiveness of Bruner's Concept Attainment Model and Ausubel's Advance Organiser Model, (iii) to compare Bruner's Concept Attainment Model and the conventional method of teaching, (iv) to compare Ausubel's Advance Organiser Model and the conventional method of teaching, and (v) to have these three comparisons in relation to different levels of academic achievement and creativity.

Methodology: The sample comprised 180 female senior secondary students studying in Class XI, who were selected through the convenient-purposive sampling technique. The tools used included Criterion Test, three Lesson Plans, Torrance Test of Creativity—Verbal Form A, Jalota and Tandon's Group Test of General Mental Ability, Social Class Scale devised by Sharma. One-way and three-way (3x2x2) ANOVA, ANCOVA, 't'-test and the pre-test-post-test control-group quasi-experimental design were

used. In the case of all the three groups, two experimental and one control, the treatment was executed for 20 working days, covering one unit each day. The three groups, two experimental and one control, were matched with respect to age, intelligence, socio-economic status and pre-test criterion scores.

Major Findings: (1) The results of one-way ANCOVA revealed a statistically significant difference between students who had been taught through Bruner's Concept Attainment Model, Ausubel's Advance Organiser Model and conventional teaching with respect to the scores on attainment of concepts in economics; also Ausubel's Advance Organiser Model was more effective than conventional teaching; further Ausubel's Advance Organiser Model was more effective than conventional teaching, whereas no statistically significant difference was found in the effectiveness of the two experimental groups. (2) While applying three-way ANOVA (3x2x2) to gain scores in concept learning in economics among 120 students, a statistically significant difference was found between the three teaching approaches where Ausubel's Advance Organiser Model was found to be more effective than Bruner's Model; Bruner's Model was more effective than the conventional method and Ausubel's Model was more effective than the conventional method. (3) Neither academic achievement nor creativity affected the gain scores of subjects pertaining to the attainment of concepts in economics. (4) The interactions between teaching approaches and academic achievement, between teaching approaches and creativity, and between academic achievement and creativity were not significant. (5) The interaction between teaching approaches, intelligence and creativity was not significant. [AK 1853]

Kaushik, N.K. 1988. **The long-term effect of advance organisers upon achievement in biology in relation to reading ability, intelligence and scientific attitude.** Ph.D., Edu. Devi Ahilya Vishwavidyalaya.

Problem: It attempts to study the long-term effect of advance organisers upon achievement in biology in relation to reading ability, intelligence and scientific attitude.

Objectives: (i) To investigate the long-term effect of written advance organisers upon the achievement of ninth graders in biology, (ii) to study the effect of advance organisers on students of different reading abilities, intelligence and scientific attitude, (iii) to study the interaction of the study conditions and retentions, (iv) to study the interaction of study conditions, levels of reading ability, intelligence, scientific attitude and retention, (v) to study the relative effectiveness of study conditions on immediate ability, intelligence and scientific attitudes as co-variables, and (vi) to study the relationship of reading ability, intelligence and scientific attitude with mean achievement scores on immediate and delayed tests, respectively, of other groups, viz. Advance Organiser Model, General Introduction and Traditional Method.

Methodology: Sixty Class IX students of Kendriya Vidyalaya, Sarni, Betul, constituted the sample of the study. Each group consisted of 20 students selected randomly. The factorial design of 3x3x2 was used in this study. The two experimental groups were the Advance Organiser Group (AOM) and the General Introduction Group (GI). The control group was the Traditional Method Group (TM). The treatments were followed by immediate test (T1) and delayed test (T2). The tools used to collect the data included three standardised tests, viz. Silent Reading Comprehension Test by B.V. Patel, Verbal Intelligence Test by Ojha and Ray Chowdhary, and Scientific Attitude Test by M.J. Rabindranath. Thirteen lessons from the Class IX biology textbook were chosen for study. For each lesson, one advance organiser, one general introduction and one retention test were prepared. The experiment continued for 13 days. The retention tests were administered to measure the achievement of students. Different statistical techniques like 't' test, one-way ANOVA, three-way ANOVA,

ANCOVA and correlation matrix were used for analysis of data.

Major Findings: (1) Advance organisers facilitated immediate and delayed learning in biology. (2) The organisation of learning material, employing the principles of progressive differentiation and integrative reconciliation, enhanced as much learning and retention as the advance organisers. (3) A general introduction or an overview, generally preceding the learning material in the lectures, lessons or textbooks, was of little value as compared to the advance organisers. (4) Pupils with high intelligence, reading comprehension and scientific attitude derived the greatest advantage from the presentation of an advance organiser. (5) General learners were also profited by the advance organiser. (6) The achievement of the learners in biology was found to be highly positively correlated with their intelligence, reading comprehension and scientific attitude. [PKS 0650]

Khan, Mohd. Sharif and Siddiqui, Mujibul Hassan. 1992. **Effectiveness of concept-attainment strategies: A review of research.** *Indian Educational Review*, Vol. 27 (1): 117-22.

Problem: The study reviews the researches in the area of concept attainment at different levels.

Objective: To review the research studies conducted in India and abroad in the area of concept attainment, its strategies and factors affecting it.

Methodology: The author reviewed the studies conducted earlier in India and abroad on concept attainment strategies at different levels. After classifying them into two broad categories, i.e. selection strategies and reception strategies, the author also touched upon their effectiveness for learning.

Major Findings: (1) All concepts possessed at least four components: attributes, examples, definitions and hierarchical relations. (2) The factors that affected the selection strategies and

reception strategies to attain concepts were definition of task; nature of the instances encountered; nature of validation; anticipating consequences of categorising; and nature of imposed restrictions. (3) The concept attainment strategies were more effective over the traditional approach in teaching. (4) Personality factors had no significant effect on the concept attainment process. (5) Disjunctive concepts were significantly more difficult than the attainment of conjunctive concepts. (6) Concept attainment strategies were responsive to the needs of the disadvantaged learners in problem-solving situations and attainment of concepts. [MPR 1896]

Kulkarni, Prabhjot S. 1991. **The use of drama in improving the teaching-learning process.** Independent study. *New Delhi: Vivekanand College.*

Problem: The Education Commission (1964-66) envisaged the importance of and reforms in school curriculum, the method of teaching, and examinations. The use of drama in classroom teaching is a corrective way to improve quality teaching. It can prevent and lower drop-outs. Using drama in classroom teaching can also cultivate interest in the students for a particular subject. In addition to this, some of the other important values of drama in children's learning are (i) personality development, (ii) means of acquiring social health, (iii) drama as an art form, (iv) drama as a method of teaching.

Objectives: (i) To explore the creative expression of children in the age-group 7-12 years, (ii) to know that learning in children through drama is interesting, (iii) to make self-assessment and evaluation report of children on 'Drama in Education', and (iv) to formulate a theory of drama in the 'teaching-learning' strategy.

Methodology: The study was meant for children in the age-group 7-12 years. Thirty-five children of Class V (age 10-11 years) were involved in the 'Drama in Education' (DIE)

workshop. The children (21 girls and 14 boys) had not been exposed to any DIE workshop of this kind before. The steps involved in the DIE workshop included (i) theatrical games, (ii) theatrical exercises, (iii) recitation of poems on themes related to animals, pets, birds, nature and the environment, (iv) riddles and puzzles related to the environment, (v) discussion on environment and pollution, (vi) exploration of news items on pollution from various sources, (vii) creation of stories, (viii) presentation of process of improvisation, (ix) sketches and drawings, (x) observation record of children, (xi) questionnaires on pollution, and (xii) self-appraisal proforma (SAP). While analysing the data, only averages were used.

Major Findings: (1) The children under study had been able to express their ideas through various creative activities. (2) The children had learnt the theme 'pollution' through the DIE workshop. (3) There was growth (P.G.) in children through the DIE workshop. (4) Learning had been a pleasant experience for the children. (5) A large majority (95%) of children felt that they could now develop other textual themes through drama. (6) The children realised that they made a lot of noise in the school, which was bad for everyone. They felt that they should develop good habits. (7) About 72% of the children responded that they had been relieved of stage-fright and fear. (8) All the children responded that they would like to study other subjects in the classroom through drama. Stress was laid on languages and social studies. Only a few students showed a desire to study science and mathematics through drama. [SKB 1197]

✓ Kumari, Sucheta. 1990. **Instructional and nurturing effects of the Synectics Model of teaching on the creative ability in languages.** Ph.D., Edu. Kurukshetra Univ. .

Problem: It attempts to study the instructional and nurturing effects of the Synectics Model of teaching on the creative ability in languages.

Objectives: (i) To study the instructional effect

of the synectics model of teaching on creative ability in Hindi and English, (ii) to find out the effect of Synectics Model of teaching on the improvement of language creativity in Hindi and English, (iii) to find out the effect of the Synectics Model of teaching on improvement in the general creative capacity of the students, (iv) to study the nurturing effect of the Synectic Model of teaching, (v) to study the effect of the Synectics Model of teaching on improvement in language creativity in essay/paragraph-writing in Hindi and English, (vi) to find out effect of the Synectics Model of teaching on the academic achievement in Hindi and English, and (vii) to find out the effect of the Synectics Model of teaching on the development of group cohesiveness among school children.

Methodology: A 3x3x3x2 nesting-cum-crossing design was followed to study the instructional effects on language creativity (Hindi and English). The design was crossing because all the groups of students were pre-tested and post-tested. To study the nurturing effects, a 3x3x2 factorial nesting-cum-crossing design was followed. Trend analysis was done. A school with three sections (with at least 40-45 students in each section) of Classes VII, VIII and IX was selected from the urban area of Shahabad Markanda District, Kurukshetra (Haryana). On the basis of the mean, the SD of intelligence and SES, they were divided into three equivalent groups. The tools used for data collection were of two types, treatment tools and measurement tools. The treatment tools included lesson-plans, lesson-plan formats and work-sheets. These were prepared by the investigator according to the assumption, objectives and syntax of the instructional procedure. The measuring tools included Language Creativity Test in Hindi and English by Malhotra and Sucheta, Essay/Paragraph Analysis Scale in Hindi and English developed by the researcher, Verbal Test of Creative Thinking by Baquer Mehdi, the Group Cohesiveness Scale in Hindi and English developed by the investigator, Raven's Progressive Matrices and the Kurukshetra SES Scale (Urban).

Mean, SD, 't' test, four-way ANOVA, and trend analysis were used to analyse the data.

Major Findings: With regard to instructional effects: (1) Grade levels effected the improvement in language creativity (Hindi, English and general). In all the three spheres, the students of Class IX were found the most creative, and Class VII students were the least. However, Class VIII students were found more creative than Class IX students for the total as well as for the factor of language creativity, concerning flexibility and originality. (2) The Synectics Model of teaching effected the improvement in all the five aspects of language creativity in Hindi, English and general, viz. plot-building, dialogue-writing, poetic diction, descriptive style and vocabulary test. (3) Intelligence affected improvement in all the three spheres of language creativity. The intelligent students were found most creative in the four factors of language creativity, viz. fluency, flexibility, originality and elaboration in Hindi and English, and the first three factors in general creativity. With regard to the nurturing effects (a) The Synectics Model of teaching affected improvement in the gain scores of essay/paragraph-writing in Hindi and English. (b) Improvement was noticed in all the four components, e.g. unity, coherence, originality and fallacies of essay/paragraph-writing, in increasing manner in Synectics I and II. (c) This model helped in improving the achievement scores of all the students in Hindi and English. In both Hindi and English, students of high intelligence were found to score better. (d) This model of teaching increased group cohesiveness significantly. [CLK 0330]

Mahajan, Jyotsna. 1992. **A comparative study of the effectiveness of two models of teaching, viz. Bruner's Concept Attainment Model and Ausubel's Advance Organiser Model, on the teaching abilities of student-teachers and on achievement of students in various schools.** Ph.D., Edu. Shreemati Nathibai Damodar Thackersey Women's Univ.

Problem: This is a study wherein the method of teaching is tested against the teaching abilities of student-teachers in junior college of education. It works in two phases: Phase A — college-based laboratory phase; Phase B — school-based coaching phase.

Objectives: (i) To enable student-teachers to be familiar with various steps involved in models of teaching, (ii) to enable student-teachers to use the teaching-analysis guide to observe lessons, (iii) to enable student-teachers to write the lesson notes according to the mode and to teach in peer group, and (iv) to enable student-teachers to plan a complete unit in mathematics for a longer period and to teach accordingly in the classroom situation.

Methodology: A pilot study was conducted to validate the programmes, namely lesson notes and other teaching material, based on the two models. On the basis of the 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 of 15 student-teachers. Three treatments were assigned to 9 sub-groups of H, M and L groups. All other factors were controlled. The experiment was conducted for two months for Phase A, and for one month for Phase B. The tools used were Teaching Competence Assessment Scale, Uniform Criterion for Evaluating Teaching Practice, and Achievement Test for Students. The data were analysed using ANOVA. For further comparisons between the multiple means, Schelt's test was used.

Major Findings: (1) During the peer-group sessions as well as classroom teaching sessions, the group which was taught by the Concept Attainment Model based on Bruner's theory was found to be superior to the group which was taught by the Advance Organiser Model based on Ausubel's theory and the group which was taught by the routine method, so far as the teaching ability of the student-teacher was concerned. (2) The achievement of students who

were taught by the Concept Attainment Model based on Bruner's theory were found to be better than those of the students taught by Ausubel's Advance Organiser Model and the routine method. [AGB 1288]

Majumdar, Braja Gopal. 1989. **On developing a cybernetic model of teaching.** *Indian Educational Review*, Vol. 24 (4): 14-24.

Problem: The attempt is to develop a cybernetic model of teaching.

Objective: To find synchronisation between input and output such that input changes are needed to achieve the target output.

Methodology: One hundred and twenty-five students from Class IX and 100 students from Class X of a higher secondary school located in a rural area were taken for the study. The learning achievement of the annual examination of Class IX and the test examination of Class X in mathematics, physical science and life science were used as the tools of the study. Mean, SD, and 't' tests were used to treat the data.

Major Findings: (1) The principle of 'cybernetics', applied in the teaching-learning process for achieving output by students, was described with the following components: input, teaching, performance, evaluation, error-finding and correction. The analytical approach of the method was also explained in detail. (2) Students made substantial progress in the initial stage when they were taught by the proposed model. [VKJ 1448]

Malhara, S.B. 1988. **A comparative study of the relative effectiveness of teaching methods based on motivation due to competition and motivation due to initiative, spirit, interest and tendency to cooperate.** Independent study. *Junior College of Education, Jalgoa, Maharashtra.* [ERIC Funded]

Problem: This study centres around finding out whether the losers as well as the winners are

really learning? Are both of them being really educated? Is the competition to win the reward helping them in flowering in love and goodness? Does it make the students free and fearless? Does it bring thoughtfulness and consideration among the participants? Are these competitions helpful in achieving sound health of body and mind? Do they develop creativity and sociability among the students?

Objectives: (i) To study comparatively the competition-oriented and cooperation-oriented methods of teaching, (ii) to cognise the effective one between the competition-oriented and cooperation-oriented methods for the integrated development of the child with special reference to his health, sociability and creativity, (iii) to find out the right value of this competitive spirit and whether this spirit is really worthwhile and develops the child in the true sense of the term, (iv) to find out the significance of the spirit of cooperation which had been neglected by educationists, philosophers and writers all over the world, and (v) to find out the validity and importance of the cooperative spirit in bringing about unity and integrity and solving national as well as international problems.

Methodology: Three divisions of Standard VIII, named A (Group I), B (Group II), C (Group III), were selected for experiment from the local N.W. Girls' school. Group I which was selected for cooperation-oriented teaching had 72 girls. Group II which was selected for competition-oriented teaching had 66 girls. Group III had 58 girls. The tools used in this study were Tests, Informal Interviews, and Evaluation Scheme. Mean and percentages were used to treat the data.

Major Findings: (1) The achievements of Group I were better than the achievements of Group II, implying that the cooperative teaching methods were more effective than the methods of competitive teaching. (2) It was also found that the cooperation-oriented teaching methods helped the children not only in gaining knowledge but also in developing their skills. This type of

teaching gave freedom to students, and due to the freedom the children developed their various faculties. (3) Group III (which was taught in the competitive method of teaching) was better in achievements than Group II, the control group. This showed that students geared into the competitive spirit showed good progress, and competitions also encouraged the students in going ahead. [CGVM 1140]

Malhotra, S.P. 1990. **Effect of the Synectics Method of teaching on the development of language creativity in Hindi.** Independent study. Kurukshetra Univ. [ERIC Funded]

Problem: This study guides teachers to develop language ability among students rather than simply using language as an information-giving system. Creative language ability is most desired in languages, especially in Hindi, and the Synectics Method of teaching used in this study helps in improving creative potential in the languages. The study centres round the effects of the Synectics Method of teaching for developing language creativity among students.

Objective: To find out the effects of the Synectics Method of teaching on the improvement of fluency, flexibility, originality and elaboration factors and their summated scores with respect to (a) plot building, (b) dialogue writing, (c) poetic diction, (d) descriptive style, (e) vocabulary test, and (f) total language creativity.

Methodology: For the present study, Class IX students of Arya Girls High School, Shabad Markanda (Haryana), were administered the intelligence test and the SES scale. On the basis of the scores on these scales, initially a group of 216 students were categorised as high, middle and low on intelligence and socio-economic status. The study employed two types of tools, i.e. teaching and measuring tools. The teaching tools included Lesson Plan Formats, Lesson Plans, Lesson Plan Guide and Worksheets. The measuring tools included Language Creativity Test developed by Malhotra and Sucheta

Kulshreshta's Socio-economic Status Scale (Urban). As per the objectives, a four-way factorial (2x3x3x2) nesting-cum-crossing design was followed. To analyse the data, four-way (2x3x3x2) ANOVA and 't'-ratio were employed.

Major Findings: (1) The students who were exposed to the Synectics Method of teaching showed significant improvement on all the four factors, viz. fluency, flexibility, originality and elaboration, as well as on their total scores of the plot-building aspect of language creativity. With levels of intelligence, the students showed more improvement in all the four factors, i.e. fluency, flexibility, originality, elaboration as well as on their summated scores than their counterparts. The levels of socio-economic status did not show any such difference. However, after the treatment, students of low SES showed higher improvement than their counterparts. (2) The Synectics Method of teaching affected the improvement of the students on all the four factors, viz. fluency, flexibility, originality and elaboration as well as on dialogue-writing aspect of language creativity. However, the improvement was not attributed to levels of intelligence and socio-economic status as the F-ratio was not significant. (3) The students after the treatment of the Synectics Method of teaching showed improvement on the poetic diction aspect of language creativity. They also showed improvement in all the four factors, i.e. fluency, flexibility, originality and elaboration. The levels of intelligence did not affect the improvement on all the four factors (e.g. fluency) but it did affect factors like flexibility, originality and elaboration as well as their total scores. High-intelligent students showed more improvement on these factors than their counterparts. Levels of socio-economic status did not show any difference. (4) The treatment affected improvement on all the four factors, viz. fluency, flexibility, originality and elaboration, as well as on their total scores of the descriptive-style aspect of language creativity. The Synectics Method of teaching significantly differed in its effectiveness from that of conventional method. High-intelligent students

showed more improvement on all the four factors, viz. fluency, flexibility, originality and elaboration, as well as on their total scores than their counterparts. The levels of socio-economic status did not affect the scores of the students. Further, the students of low socio-economic status showed more improvement after the treatment than their counterparts. (5) The groups of students who were exposed to the Synectics Method of teaching showed significant improvement on all the four factors, viz. fluency, flexibility, originality and elaboration, as well as on their total scores of vocabulary test aspect of language creativity. The levels of intelligence also affected the improvement in the case of the total score. Levels of socio-economic status did not show such difference. (6) The treatment affected improvement in the students on language creativity scores. After the treatment, the students who were exposed to the Synectics Method of teaching showed significant improvement on fluency, flexibility, originality, elaboration and total score of language creativity. Besides the treatment, levels of intelligence also affected the improvement. High-intelligent students showed more improvement on fluency, flexibility, originality, elaboration and total scores of language creativity than their counterparts. Levels of SES also showed a contribution in improving language creativity amongst students. After the treatment, the students of high SES showed the highest improvement on the factor of fluency. [Author 1186]

Manocha, Vineeta. 1991. **Development of textual material in biology for Class IX using Bruner's Concept Attainment Model of teaching.** Ph.D., Edu. *Devi Ahilya Vishwavidyalaya.*

Problem: It attempts to study the development of textual material in biology for Class IX using Bruner's Concept Attainment Model of teaching.

Objectives: (i) To develop textual material on biology concepts for Class IX on Bruner's Concept Attainment Model (CAM) of teaching, and (ii) to

determine the comparative effectiveness of the developed textual material in terms of Reception vs Traditional, Selection vs Traditional, and Reception vs Selection strategies.

Methodology: The pre-test-post-test control-experimental group design was used. The sample of the study consisted of Class IX students of a higher secondary school of Indore. The number of samples in the Experimental Group I and Group II and the Control Group were 36, 36 and 32, respectively. The following tools developed by the researcher were used for data collection: Achievement Test, Student Willingness Reaction Scale, Willingness Scale for Teachers and Reaction Scale of CAM for Trainee-Teachers. Mean, SD, 't' test and ANCOVA were used for the analysis of data.

Major Findings: (1) The reception strategy of CAM was significantly superior to the conventional group when matched on the pre-test achievement scores. (2) The Concept Attainment Model (CAM) was found to be significantly superior to the conventional method in teaching biology to Class IX students when compared to the pre-test achievement scores. (3) The selection strategy was superior to the conventional group when matched on the pre-test achievement scores. (4) There was no significant difference between selection and reception strategies with respect to achievement scores. (5) The pupils' reactions to reception and selection strategies were highly favourable. (6) The teachers' reactions to and willingness for the CAM were highly favourable. [PKS 0653]

Martis, Anandi. 1990. **Developing Making-the-Strange-Familiar (MSF) competencies through the Synectics Model of teaching in graduate student-teachers, and the study of their reactions and the reactions of pupils.** Ph.D., Edu. *Devi Ahilya Vishwavidyalaya.*

Problem: It is an attempt to study the MSF competencies through Synectics Model of teaching in graduate student-teachers and the

study of their reactions and the reactions of pupils.

Objectives: (i) To find out the effectiveness of training in the Synectics Model of teaching (MSF) in developing (a) theoretical understanding of the model, (b) 'Making-the-Strange-Familiar' competencies, (c) favourable reactions towards the model, and (d) the general and scientific creativity of graduate student-teachers, (ii) to find out the effectiveness of MSF on general and scientific creativity of high school pupils, (iii) to study the reactions of high school pupils towards MSF, and (iv) to suggest measures for incorporating the application of the findings of the study in the form of implementation of MSF in school education.

Methodology: The pre-test and post-test parallel-groups design was used in this study. For Objective (i), the experimental and control groups' sample belonged to the biology group B.Ed. students, with 12 trainees in the experimental and 12 trainees in the control group. For Objective Two, a similar design was developed at high school students' level, with 70 students in the control group and 70 in the experimental group. The tools used for Objective (i) were: Theory Check Up Synectics Model of Teaching (MSF), Teaching Analysis Guide, Reaction Scale for Graduate Student-Teachers, Raven's Progressive Matrices, Torrance Test of Creative Thinking (Forms A and B), Verbal Test of Scientific Creativity by Sharma and Shukla, Lesson Plan Guides and Worksheets, Verbal Test of Scientific Creativity and Reaction Scale for high school pupils. The graduate teachers of the experimental group delivered 11 lessons using MSF in the students' experimental groups. The control group graduate teachers delivered the same lessons using the traditional method in the control group classes. Measures of central tendency, percentage, ANOVA and ANCOVA were used to treat the data.

Major Findings: (1) The training in MSF, using lecture and discussion, significantly improved the theoretical understanding of the model. (2) The

training in MSF, comprising theory, discussion, demonstration and practice, developed 'Making-the-Strange-Familiar' competencies and generated favourable reactions in student-teachers towards the model. (3) The training in MSF, comprising theory, discussion, demonstration and practice, significantly developed the verbal fluency and verbal originality of trainees, non-verbal fluency, flexibility and originality, scientific fluency, flexibility and originality among experimental-group teacher-trainees. (4) These achievements of the training given to the teacher-trainees in MSF were observed in the development of general creativity and scientific creativity in school students taught by the traditional method. Such achievements were not found among the other high school students. (5) These achievements were not observed significantly among the control-group teacher-trainees. (6) The high school students developed favourable reactions towards the model. (6) The MSF needs to be slightly modified to suit the classroom situations. [PKS 0656]

Mathur, R.G. 1988. **Effects of mastery-level learning programme in statistics on the achievement, self-concept and attitude towards statistics of nursing students.** Ph.D., Edu. Univ. of Delhi.

Problem: The study attempts to investigate the large scope for self-paced diagnostic-corrective instruction leading to the desired level of competence and its effective outcome in terms of achievement, self-concept and attitudes.

Objectives: (i) To study the effectiveness of the mastery-learning programme (MLP) in terms of (i) (a) performance of students on formative and summative tests in statistics, (b) change in the academic self-concept and attitude of nursing students towards statistics as a subject, and (ii) to study the similarities and differences between repeaters and non-repeaters.

Methodology: The sample comprised final year B.Sc. (Nursing) and M.Sc. (Nursing) students of

RAK College of Nursing, Delhi, of two consecutive batches, i.e. 1984-85 and 1985-86. The 42 final year students of 1986-87 served as the contrast group. The tools used included Attitude Scale (Semantic Differential Type), Self-concept Scale of Brookover's adaptation, Arithmetic Skills Test, Raven's Standard Progressive Matrices, Test A to E Achievement Motivation, and Mukherjee's Sentence Completion Test.

Major Findings: (1) The majority of students (75% or more) attained mastery in each study year. (2) Gains were observed after MLP in arithmetic skills, self-concept and attitude, and in achievement on subsequent forms of unit formative tests in each of the unit formative tests in each of the study years. (3) Hypotheses 1 and 2 were tested and found significant in each of the study years. (4) The relationship between achievement and self-concept was not significant in each of the study years. (5) The relationship between achievement and attitude was not found significant in each of the study years. (6) The difference between repeaters and non-repeaters on arithmetic skills, etc. was not found significant. (7) The mean summative scores were higher in the treatment group than in the contrast group. [RDM 0347]

Mishra, G.S. 1991. **Cognitive information processing in tribal and non-tribal children.** Ph.D., Psy. Utkal Univ.

Problem: The study centres round the problem of cognitive information processing in tribal and non-tribal children.

Objectives: (i) To examine the performance characteristics and differences of tribal and non-tribal sub-cultural groups on data obtained in the cognitive problem-solving processing tasks, teacher ratings of classroom cognitive behavioural measures, and different classroom achievement measures, (ii) to examine the differences in the performance of two information processing groups (Reflective vs Impulsive) on several cognitive problem-solving processing

measures (Simultaneous-Successive, Effortful-Effortless, Disembedding Process, etc.), teacher rating of classroom cognitive-behavioural measures, and different classroom achievement measures, (iii) to find out the grade differences (III, IV and V) on different dependent measures, (iv) to examine the independence-dependence of the sub-culture and R-I information-processing, and (v) to find out the pattern of relationship among various cognitive processing measures and to extract the common underlying themes/factors from the several cognitive tests/tasks used in the present study.

Methodology: One hundred and eighty children were selected from different primary schools of Mayurbhanj District of Orissa for the present study. Ninety children were taken from the tribal population and the other 90 were from the non-tribal population. Equal number of children, both boys and girls, were selected from Classes III, IV and V for both tribal and non-tribal sub-cultures. The children from both the sub-cultures were drawn from a homogeneous socio-economic environment and from the same schools. The tools used included Cognitive Problem-Solving Test/Tasks, Matching Familiar Figure Test (MFFT 20) of Cairns and Cannock, Wechsler's Intelligence Scale for children-Revised-WISC-R, Test of Simultaneous Processing, Raven's Coloured Progressive Matrices, Figure Copying Tasks of Glg and Ames, the Task of Successive Processing (Serial Recall and Digit Span Forward), Stroop Colour-Word Interference Task, Effortful-Effortless Processing of Julesz, Colour-Form-Number-Size Task of Toki and Children's Embedded Figure Tests (CEFT) of Karp and Konstadt, Teacher Ratings of Classroom Behaviour (Self Control Rating Scale of Kendall and Wilcox and Conner's Teacher Rating Scale), and Achievement Measures. The results were analysed using mean, SD, factor analysis, analysis of variance, intercorrelation, factor loadings and proportions of variance.

Major Findings: (1) The sub-culture (Tribal/Non-tribal) and the Reflective and Impulsive

(R-1) information-processing had independent effects since no interaction effect could be obtained. (2) Non-tribal children outperformed the tribal children significantly in MFFT 20. Figure-copying, Digit-span, the Stroop word and colour task and effortful processing, and on the concerned teacher's rating of classroom achievement. The tribal children scored better on the disembedding task and drawing achievement. (3) Both tribal and non-tribal children performed equally well on WISC-R (Arithmetic and Block Design), RCPM, Serial Recall and Stroop C-W interference. (4) Reflective information-processing has been found to be a superior strategy in simultaneous processing, perceptual disembedding, WISC-R performance and RCPM measures; the same superiority could not be established in many other problem-solving tasks (such as successive processing, the Stroop tasks and effortful tasks). (5) As the children grew older and moved to the higher grades, they performed better in reflective processing, simultaneous processing, disembedding strategies, Stroop and effortful tasks. [KCP 0394]

Mohanty, B.K. 1992. **A study of the relative effectiveness of using the Jurisprudential Inquiry Model and the Concept Attainment Model in the cognitive development in moral-judgement, moral-concepts and personal-values of secondary school students.** Ph.D., Edu. Utkal Univ.

Problem: The study addresses the problem of the relative effectiveness of using the Jurisprudential Inquiry Model and the Concept Attainment Model in the cognitive development in moral-judgement, moral-concepts and personal-values of secondary school students.

Objectives: (i) To study the effectiveness of the Jurisprudential Inquiry Model (JIM) on the development of moral-judgement of secondary school children, (ii) to study the effectiveness of Concept Attainment Model (CAM) on the development of moral-judgement of secondary school children, (iii) to determine the relative

effectiveness of JIM and CAM on the development of moral-judgement of secondary school children, (iv) to determine the relative effectiveness of JIM on developing the model concept of secondary school children, (v) to determine the effectiveness of CAM on the development of moral-concepts of secondary school children, (vi) to determine the relative effectiveness of JIM and CAM in developing the moral-concepts of secondary school children, (vii) to study the effect of CAM on the personal values of secondary school children, (viii) to study the effect of JIM on the personal values of secondary school children, (ix) to compare the effects of JIM and CAM on the personal values of secondary school children, and (x) to find out the relationship between development of moral judgement and personal-values.

Methodology: The sample of the study consisted of 290 children of Class VIII belonging to four high schools of Baripada in the District of Mayurbhanj. Among four high schools, two boys' high schools and two girls' high schools were taken for conducting the experiment. The tools used included Group Test of Mental Ability by Jalota, Socio-Economic Status Scale of Bharadwaj, Gupta and Chauhan, Defining Issue Test (DIT) by Mohanty, Moral Concept Development Test (MCDT) by Mohanty and Personal Value Questionnaire (PVQ) of Sherry and Verma. Mean, SD, 't' test and correlation were used to treat the data.

Major Findings: (1) JIM was effective for the development of moral judgement of students but not the Concept Attainment Model (CAM). (2) JIM was a better treatment than CAM for development of moral judgement of students. (3) CAM produced better effect on the development of moral concept of students than JIM. (4) Social and health values developed through CAM, but religious, democratic, aesthetic, economic, knowledge, hedonistic power and family prestige values did not. (5) JIM was more effective on the development of social, economic, knowledge and power value than CAM, but there was no

significant difference in the effects of the two treatments on other values. (6) The relationship between moral judgement and values like social, democratic, aesthetic knowledge, power and health was significant and positive. But there existed a negative and significant relationship between moral judgement and economic, and between moral judgement and family prestige values. (7) JIM was effective for the development of moral judgement of boys and girls. (8) CAM produced greater effect on the development of moral judgement of girls than of boys. (9) There was no difference in the development of moral concepts among boys and girls on JIM treatment. (10) CAM was more effective for the development of the moral concepts of boys than of girls. (11) There was a significant and positive relationship between MCDT scores and SES scores. (12) The partial correlation between intelligence and MCDT scores, after partialling out DIT scores, was found to be positive and significant. [KCP 0447]

Narain, Archana. 1992. **Chemistry achievement and science attitude of Indian students, stemming from lecture-demonstration and small-group laboratory teaching methods.** Ph.D., Edu. Univ. of Lucknow.

Problem: It is an attempt to study the chemistry achievement and students' attitude towards science stemming from lecture-demonstration and small-group laboratory teaching methods.

Objectives: (i) To study the effect of two methods of teaching chemistry, namely large-group lecture-demonstration method and small-group laboratory method, on secondary school students of Lucknow City, (ii) to find out the difference between the two teaching-method groups on achievement in chemistry and attitude towards science, and (iii) to assess the relationship between students' attitude towards science and their achievement in chemistry.

Methodology: The study used the purposive sampling technique in the initial stage. Several

extraneous variables (intelligence, academic achievement, age and socio-economic status) were controlled. The final sample consisted of 79 girls and 91 boys who were randomly assigned to the two teaching-method groups. The tools used included Chemistry Achievement Test (Forms A and B) constructed by the researcher and Attitude Survey for Junior High School of Fisher. For the treatment programme, six lesson plans in chemistry were prepared. The investigator taught these lessons by the two teaching methods. The data consisted of pre-test scores and post-test scores. Comparisons were made by using 't' test, critical ratio and the Pearson product-moment correlation.

Major Findings: (1) Some learning was found to be better through demonstration and some through practical work. Neither of the methods was so superior to the other in teaching all aspects of science as to force us to use it to the exclusion of the other. (2) In lessons connected with analytical chemistry, there had been an increase in knowledge through the lecture-demonstration method, while there was increase in understanding and laboratory skills through the small-group laboratory method. The lessons in inorganic chemistry showed that there had been an increase in knowledge through lecture-demonstration. In lessons of physical chemistry, no definite trend was visible but the overall observation suggested that the laboratory method had a more positive effect. (3) There was no effect of sex on the achievement in chemistry. (4) No significant difference was found between the two teaching-method groups with regard to attitude towards science. (5) A positive relationship was found between achievement in chemistry and attitude towards science. [RJS 0679]

Pal, S.K. and Misra, S.K. 1991. **Effect of jurisprudential strategy of teaching on the development of social consciousness and ability to solve value conflicts.** Independent study, Univ. of Allahabad. [ERIC Funded]

Problem: The National Policy on Education (1986) has emphasised the need for value education in our culturally plural society: 'Education should foster universal and eternal values oriented toward the unity and integration of our people. Such value education should help eliminate obscurantism, religious fanaticism, violence, superstition and fatalism.' We need educational programmes meant for developing student's social consciousness and value-conflict solution ability (VCSA). The researcher was of the view that teaching based on Jurisprudential Teaching Strategy or semi-structured workbooks enabling students to use Jurisprudential Inquiry can help in the development of social consciousness and value-conflict solution ability. The present study attempts to study the effectiveness of these two strategies, i.e. Jurisprudential Inquiry Teaching and Individualised Jurisprudential Inquiry, and the predictors of gains in social consciousness and value-conflict solution ability.

Objectives: (i) To study the effectiveness of Jurisprudential Inquiry Teaching (JIT) and Individualised Jurisprudential Inquiry (IJI) for developing social consciousness, (ii) to study the effectiveness of JIT and IJI for developing value-conflict solution ability, (iii) to find out whether JIT is more effective than IJI for (a) developing social consciousness, and (b) developing value-conflict solution ability, (iv) to find out whether social coincidence gain scores and value-conflict solution ability gain scores are related to deprivation, intelligence, personality traits and pre-test social consciousness scores, and (v) to find out the extent to which present social consciousness, intelligence, deprivation and personality traits contribute to the development of social consciousness and value-conflict solution ability among students exposed to JIT and IJI.

Methodology: A purposive sample of 153 girls was selected from students studying in Class IX of two schools of Allahabad. The tools used included Social Consciousness Test developed by

the researcher, Value Conflict Solution Ability Test developed by the researcher, Cattell's Culture Fair Intelligence Test (Scale 2 Form A), Misra's Personality Questionnaire, and D-scale constructed by S.K. Pal. Pre-test-post-test experimental-control group design was adapted. Mean, SD, 't' test, analysis of variance, and product-moment correlation were computed.

Major Findings: (1) JIT was effective for developing overall VCSA and overall social consciousness. (2) Exposure to JIT brought about improvement in students' ability to identify value conflicts, and in their social reasoning. (3) JIT was more effective than IJI for developing students' overall VCSA as well as its four dimensions and also for developing social consciousness as well as its three dimensions. (4) Development of VCSA among students exposed to IJI was negatively related to adaptability and relatively related to present VCSA. (5) Development of VCSA among students exposed to JIT was positively related to crookedness and negatively related to pre-test. (6) Development of social consciousness (DSC) among students exposed to JIT was positively related to tolerance, and negatively related to initiative and pre-test DSC status when students were exposed to IJI. Gains in the capacity to guess problem (GP) were negatively related to deprivation and pre-test GP status and positively related to intelligence. (7) Pre-test score on VCSA and adaptability could predict gains in overall VCSA among students exposed to IJI. (8) Development of social consciousness among students exposed to IJI could be predicted from initiative and pre-test status on social consciousness. (9) A training strategy consisting of seven phases was developed which could be used for training teachers to use a teaching strategy. [SKB 1209]

Palanivelu, M.E. 1989. **A study of the effectiveness of objective-based teaching and testing on the performance of Standard V pupils in science.** M.Phil., Edu. Madurai Kamaraj Univ.

Problem: Primary school teachers exposed to objective-based teaching and testing may produce better academic achievement in students than teachers without any exposure to it. The present study is an attempt in that direction.

Objectives: (i) To prepare objective-based teaching and testing materials for Standard V pupils in science, (ii) to expose primary school teachers to objective-based teaching and testing in science, and (iii) to assess the effectiveness of objective-based teaching and testing materials in science.

Methodology: The sample of the study was 20 teachers from both urban (Dindigul) and rural (Chinnalapatty) schools, and their students, numbering 400, in Class V. The teacher-student ratio was 1:20. The researcher used the pre-test-post-test equivalent-groups design. The tools used included Behavioural Objective Test for Teachers (BOTT), Objective Based Test for Students (OBTS) and Attitude Scale on Learning Science (ASLS) prepared by the researcher. An objective-based lesson plan package was also prepared and used as an instructional aid to teach the experimental group.

Major Findings: (1) Teachers were aware of different types of behavioural objectives after getting training in them. (2) Teachers' preferences for three levels of behavioural objectives were in this order: affective, cognitive and psychomotor. (3) The performance of students taught by the teachers of the experimental group was higher than that of the students taught by teachers of the control group. (4) Students taught by the experimental and control groups had similar attitudes towards learning science. [MKU 1059]

Panda, Promod Kumar. 1990. **A study of the composite effect of a package of certain curricular strategies on selected cognitive and non-cognitive characteristics of rural primary school students of Orissa.** Ph.D., Edu. *Himachal Pradesh Univ.*

Problem: It is an attempt to study the composite effect of a package of certain curricular strategies on selected cognitive and non-cognitive characteristics of rural primary school students of Orissa.

Objectives: (i) To compare the performance at the end of the academic session of three groups of students: one group following instruction with effective use of selected curricular strategies (use of teaching skills, parental involvement, providing extra reading material, and motivation); and the other two groups, which did not make effective use of such strategies in the subjects of Oriya, mathematics, general science, social studies, English, and in the aggregate, (ii) to study the change in the level of study habits and test anxiety at the end of the academic session of the three treatment groups, and (iii) to study the change in the level of study habits and test anxiety of the three treatment groups from the beginning to the end of the academic session.

Methodology: The subjects for the study were drawn from a pooled sample of 105 students selected from three Oriya-medium primary schools situated in rural areas of Bolangir District, Orissa. Three equivalent groups were formed by matching them on the variables of intelligence and SES. Each treatment group finally consisted of 26 subjects. The tools used in the study included five Achievement Tests, 69 Unit Tests, Study Habits and Attitude Inventory, Test Anxiety Scale, Interview Schedule for parents, Rating Scale, SPM and SES Scale and Interview Schedule for Headmaster. Analysis of covariance was used to analyse the data.

Major Findings: (1) The students who were taught with effective use of the selected curricular strategies achieved more in the subjects of Oriya, mathematics, social studies, general science and English as well as in the aggregate in comparison to those who were taught by teachers teaching without the effective use of these strategies. However, the students of the experimental groups did not differ significantly from the students of

Control Group I with respect to their performance in general science and social studies. (2) The students who were taught with effective use of the selected curricular strategies exhibited better study habits and decreased level of test anxiety in comparison to those who were taught by teachers found to be teaching without the effective use of these strategies. (3) The two groups of students, who were taught by the teachers without effective use of the selected curricular strategies, exhibited equal performance in the subjects of mathematics and English while their performance differed in Oriya, general science, social studies and in the aggregate. (4) The students who were taught without effective use of the selected curricular strategies exhibited equal level of study habits and test anxiety. (5) The students of these treatment groups exhibited a significant increase in study habits and decrease in test anxiety from the beginning to the end of the academic session irrespective of the fact whether they were taught with or without effective use of selected curricular strategies. [LK 1315]

Pandey, Satya Prakash. 1991. **Instructional and nurturant effects of the Jurisprudential Inquiry Model of Teaching**. Ph.D., Edu. Univ. of Allahabad.

Problem: The study is undertaken to validate the Jurisprudential Inquiry Model of Teaching (JIMOT) in terms of its effectiveness to produce expected instructional and nurturant effects.

Objective: To study the effectiveness of the Jurisprudential Inquiry Model of Teaching (JIMOT) in producing expected instructional and nurturant effects.

Methodology: A pilot study was conducted on 20 randomly selected students of Class IX, and the pre-test control-group design was used. The main experiments were conducted on a sample of 84 students of Class IX. The pre-test-post-test single-group design was used. The students were exposed to 21 JIT sessions. The measures of

dependent variables, viz. Social Value, Jurisprudential Inquiry Ability and Socio-economic Status were constructed by the researcher. The Socio-economic Index by Verma and Saxena and Raven's Standard Progressive Matrices were also used as tools. Mean, SD, 't' test and ANCOVA on 3x2 factorial design (three levels of intelligence and two levels of SES) were used to analyse the data.

Major Findings: (1) JIMOT was effective for the development of (a) social values, viz. justice, liberty, equality, fraternity, seclusion and tolerance; (b) jurisprudential inquiry abilities; and (c) sociometric status (with reference to social action and social dialogue). (2) The sociometric status of accepted pupils did not suffer any deterioration as a result of exposure to JIT sessions. (3) Development of values of equality and secularism was affected favourably by intelligence. (4) Development of fraternity and tolerance values were favoured by a high SES level. (5) Interaction (SES and intelligence) affected the development of the value of justice. (6) The effect of intelligence was favourable on the development of jurisprudential inquiry ability (overall) and nine component abilities—ability to solve definitional questions, ability to identify value-conflicts, ability to take a position, ability to justify one's position, ability to assume arguments of others, ability to predict consequence, ability to suggest analogies, ability to assess one's value over another value and ability to qualify one's position. (7) The development of two abilities, i.e. ability to take a position and ability to justify one's position, were favourable by the high SES level. (8) Interaction effect was found to be significant in the development of students' ability to justify his/her position. [PCS 0939]

Passi, B.K.; Singh L.C. and Sansanwal, D.N. 1991. **Models of teaching: Report of the three-phase study of CAM and ITM**. Independent study. National Council of Educational Research and Training.

Problem: This study addresses the problems and utilities of two different models, viz. the Concept Attainment Model (CAM) and the Inquiry Training Model (ITM), which have been discussed in three main phases separately.

Objectives: (i) To provide training to teacher-educators in different 'Models of Teaching', (ii) to test the efficacy of the training strategy adopted for training in 'Models of Teaching', (iii) to study the extent to which 'Models of Teaching' can be incorporated as an integral part of teacher training programmes in India, and (iv) to see the feasibility of the application of the models in the Indian classrooms.

Methodology: Three types of samples were drawn. They were: 45 teacher-educators from 30 institutions located in 11 States, 393 student-teachers from 16 collaborating secondary teachers from training institutions, and more than 2,500 pupils belonging to different schools from various states in the country. The treatment at each of the three phases comprised two Models of Teaching, namely, the Concept Attainment Model (CAM) and the Inquiry Training Model (ITM). The training strategy at Phases I and II comprised: (a) theory of the models and testing the understanding of the theory, (b) demonstration of the model and Teaching Analysis Guide (TAG)-based observation, the explanation of Lesson Plan Guide (IPG), LPF and worksheet explanation of Lesson Plan Guide (LPG), LPF and worksheet, and (c) Peer Practice Feedback (PPF) in quadro and in pair. The treatment in Phase III employed coaching conducted through Peer-Pair Practice Feedback (PPF) in actual classroom setting. The dependent variables related to (a) understanding of the theory of the model tested through theory check-up, (b) reaction towards the model tested through a locally developed Reaction Scale, (c) willingness to implement the model assessed through a locally designed willingness scale, and (d) testing competence to use the specific models assessed with the help of a Teaching Analysis Guide (TAG). The data at each phase were collected and

analysed by employing content analysis and appropriate statistical techniques. In general, chi-square, F-test, and, 't' test were employed.

Major Findings: Phase One—Workshop-based study on Development of Training Strategy related to CAM/ITM. (1) Training on CAM/ITM in the form of lecture, demonstration, discussion and peer-practice feedback did enhance the understanding of teacher-educators about the theoretical aspects of CAM/ITM. (2) The training in CAM/ITM did bring about significant favourable change in teacher-educators' reactions towards CAM/ITM. (3) The understanding of CAM/ITM did not influence teacher-educators' reactions towards CAM/ITM. (4) The teacher-educators were willing to implement the models of teaching in the teacher education programme if the support system was available. (5) The training strategy, comprising of theoretical discussion, demonstration and peer-practice feedback in quadro, were found effective in terms of developing understanding, favourable reactions and willingness to implement the models of teaching.

Phase Two—Conclusions of college-based study related to (a) CAM / (b) ITM: (1) (a) The student-teachers belonging to E1, E2, and E3 groups had differential understanding of the theoretical aspects of CAM. More specifically, the student-teachers belonging to E2 group had significantly higher understanding of the theoretical aspects of CAM than student-teachers of E1 and E3 groups. On the other hand, student-teachers of E1 and E3 groups had understood the theoretical aspects of CAM to the same extent; (b) The student-teachers of E1 as well as E2 groups understood the theoretical aspects of ITM to the same extent. (2) (a) The student-teachers belonging to E1, E2 and E3 groups had differential model competency in CAM. More specifically, E2 group was significantly higher in competency than E1 and E3 groups in the beginning of PPF. E1 group was significantly higher in competency than E3 group; (b) The student-teachers of E1 and E2 groups attained

competency in ITM to the same degree in the beginning of PPF-viewing after demonstrations and having understood the theory. (3) (a) The student-teachers belonging to E1, E2 and E3 groups had differential competency in CAM at the end of the PPF. More specifically, E2 attained higher competency in comparison to E1 and E3 groups. On the other hand, E1 and E3 group attained competency to the same extent at the end of PPF; (b) The student-teachers of E1 groups attained significantly higher competency in ITM at the end of PPF as compared to student-teachers of E2 group. (4) (a) The student-teachers (as trainee-learners) belonging to E1, E2, and E3 groups had differential reaction towards CAM. Specifically, E1 and E2 groups had higher favourable reaction towards CAM as compared to E3 group. On the other hand, E1 and E2 groups had equally favourable reactions. (b) The student-teachers (as trainee-learner) of both E1 and E2 groups had equally favourable reactions towards ITM.

Phase Three—Conclusions of school-based study related to (a) CAM/(b) ITM: (1) (a) The student-teachers of E1, E2 and E3 groups attained differential competency in CAM at the beginning of the coaching in school. The student-teachers of E2 group had significantly higher competency at the beginning of the coaching stage as compared to E1 and E3 groups. On the other hand, both E1 and E3 groups had competency at the beginning of the coaching stage to the same degree. (2) (a) The student-teachers of E1, E2 and E3 groups attained differential competency at the end of the coaching in school. The mean competency score on TAG of E3 group is significantly lower than that of E1 and E2 groups. On the other hand, E1 and E2 groups attained competency to the same degree; (b) The student-teachers of both E1 and E2 groups taught through ITM with equal competency. (2) (a) The student-teachers of E1, E2 and E3 groups had favourable reactions towards CAM; (b) The student-teachers of both E1 and E2 groups had equally favourable reactions towards ITM.

(3)(a) The student-teachers of E3 group had higher willingness in comparison to E1 and E2 groups, but the willingness of E3 group was neutral. On the other hand, E1 and E2 groups had equal but negative willingness towards CAM; (b) The student-teachers of E1 and E2 groups were not willing to implement the ITM model to the same degree. (4) (a) Students taught by E3 group had significantly higher favourable reactions towards CAM as compared to students taught by E1 and E2 groups. On the other hand, the students taught by E1 and E2 groups of student-teachers had equally unfavourable reactions; (b) The school-students had unfavourable reactions to the same extent towards ITM. [SP 1877]

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., Edu. Madurai Kamaraj Univ.

Problem: This is an attempt to study the 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, and (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.

Methodology: All 60 commerce students of Standard XI in Devangar Higher Secondary School, Chinnalapatty, constituted the sample. The post-test-only equivalent-group design was employed in this study. Selected units in commerce were taught to two experimental groups by discussion and assignment methods separately. The control group was taught by the lecture method separately. Mean, SD, 't' test, and ANOVA were used for statistical analysis.

Major Findings: (1) Among the three methods of teaching, the assignment method was the most effective in teaching commerce. (2) The group-discussion method was more effective than the lecture method in teaching commerce. [MKU 1061]

Prabhakar, Annamma. 1988. **Nurse-tutors' preparation, perception, and performance of their role in diploma schools of nursing in Maharashtra.** Ph.D., Edu. *Shreemati Nathibai Damodar Thackersey Women's Univ.*

Problem: It attempts to study nurse-tutors' perception of their role and performance in diploma schools of nursing in Maharashtra.

Objectives: (i) To find out how nurse-tutors perceived and performed their roles, (ii) to find out how nurse-tutors perceived their knowledge and ability to perform the roles, and (iii) to study the relationship between perception, performance and personal variables.

Methodology: The sample consisted of 177 nurse-tutors selected from 42 schools of nursing from Maharashtra State. The researcher collected the data with the help of a questionnaire related to biographical details, performance and factors perceived as hindrance to performance. Perception was studied with the perception tool consisting of 127 activities. The validity and reliability of the tools were established. The data were analysed by using mean, SD, 't' test, chi-square, product-moment correlation, tetrachoric and rank correlations.

Major Findings: (1) There was similarity between perception and performance of roles. The role of a teacher, administrator, and self-related roles were perceived as priority roles. (2) The majority of the tutors considered themselves to have inadequate knowledge in the roles of innovator, teacher, administrator and others. (3) There was no significant correlation between perception, performance and preparation. (4) Qualifications did not show significant difference in the perception of tutors, between

schools, but the basic B.Sc tutors perceived more than one role in priority. (5) The tutors' performance of all the roles in all the three categories of schools was low except in the role of guide in school. Comparatively, private and municipal tutors performed better than government tutors. (6) In all the three categories of schools, half the group expressed the need for more preparation in all the roles, especially in the role of innovator and administrator. Diploma-tutors had adequate knowledge in most of the roles. [AGB 0024]

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.** M.Phil., Edu. *Madurai Kamaraj Univ.*

Problem: The study has attempted to find out which method of teaching, i.e. lecture, demonstration, discussion or laboratory work, will be more effective for teaching certain units in electronics at the higher secondary level.

Objectives: (i) To develop different lesson plans based on the four methods of teaching science, and (ii) to study the effectiveness of different methods of teaching science.

Methodology: The sample of the study comprised 40 students of Standard XI at the Government Higher Secondary School, Sholavandan. The Solomon four-group design was used. The sample was divided into four groups which were exposed to four methods of teaching by rotation. Four different lesson plans, based on the four methods of teaching, were developed and used. At the end of the experiment, the achievement of the four groups were measured. The ANOVA test was used for statistical analysis.

Major Findings: (1) Laboratory work was more effective than the demonstration method. (2) Group-discussion was more effective than demonstration. (3) Demonstration was more

effective than the lecture method. [MKU 1060]

Sau, Tandra. 1988. **A critical review of some researches on the Information-processing Model of teaching.** M.Phil., Edu. Univ. of Delhi.

Problem: The present study is an attempt to review researches done on information-processing models in order to draw conclusions regarding the status of research in this area.

Objectives: (i) To collect brief abstracts and, wherever possible, a detailed account of the researches done on information-processing models, both in India and abroad, (ii) to make an in-depth study of these researches to find out similarities among these researches in terms of methodology, tools and techniques, samples, instructional strategies and other related variables, and (iii) to obtain a broad conclusion which can be useful to future researchers.

Methodology: Document-analysis was done to arrive at certain conclusions. The researches on the Information Processing Model (IPM) were collected and categorised under the following seven heads: (i) Strategies of instruction and models of teaching, (ii) Theoretical investigations on models of teaching, (iii) Studies related to curriculum development, (iv) Correlates of IPM, (v) Studies related to learning disabilities, (vi) Models of teaching and development of creativity, and (vii) Effectiveness of advance organisers under varying conditions of instruction.

Major Findings: (1) The maximum number of studies had been done in the area of 'Strategies of instructions and models of teaching'. (2) No historical study was conducted. (3) Most of the studies were experimental in nature. (4) Most of the studies were conducted at the secondary level. (5) Some studies (e.g. Rahul) were able to develop an instructional model based on information-processing, which could successfully utilise the idea of network interconnection of steps or condition in the process of problem-solving.

(6) Some of the studies using advance organiser reveal that subsumers, if anchored, would lead to the growth of cognitive functioning. Another finding was that anchored subsumers facilitated learning as well as transfer and retention of subject matter. Ausubel's Model can also be applied to the affective and the psychomotor domains. (7) Classroom teaching can be significantly improved if information-processing models combine with the ideas derived from the Piagetian form of intellectual development. [RDM 0357]

Sharma, R.C. 1991. **Effect of four classroom presentation modes on the achievement of secondary students in science.** Ph.D., Edu. Maharshi Dayanand Univ. ✓

Problem: New approaches and techniques are being followed in the classrooms to teach the students in an effective way. The new educational curriculum has become learner-based and instruction is imparted to the students accordingly. The researcher has tried the new modes for increasing the achievements of secondary students in science subjects.

Objective: To compare the achievements of science pupils adjusted on intelligence, socio-economic status and achievements in science taught through video-instruction followed by teacher's discussion mode, the demonstration mode, and the student learning through self-experimentation under the guidance of the teacher mode.

Methodology: The sample consisted of 160 students studying in Class X who were selected at random. The tools used included instruction tools and measuring tools. The measuring tools used included Achievement Test in Science, Intelligence Test by Prayag Mehta, and Socio-economic Status Scale by Kuppaswamy. The instruction tools used included (i) Demonstration Model, (ii) Video Demonstration Mode, (iii) Video-instruction followed by teacher-discussion mode, and (iv) Student learning

through self-experimentation under the guidance of the teacher mode. Mean, SD, covariance, F-ratio, and 't' test were applied.

Major Findings: (1) Video-instruction, followed by the teachers' discussion mode, was found to be superior to other modes. (2) The demonstration mode was found superior to both the video mode and the self-experimentation under the guidance of teacher mode, as regards the achievement of the students in science. (3) The video mode was found superior to the self-experimentation under the guidance of the teacher mode, in relation to achievement of the students. (4) The self-experimentation under the guidance of the teacher mode was found to be the least effective of all the modes. (5) Video-instruction followed by teachers' discussion mode was found to be most effective in terms of students' achievement in science as compared to the other modes. [DKC 0103]

Singh, Daljeet K. 1990. **Effectiveness of Inquiry Training Model and Concept Attainment Model over traditional teaching methods for teaching physical science.** Ph.D., Edu. Kumaun Univ.

Problem: The study investigates the comparative effect of the two models of teaching as compared to the traditional method in terms of gain in achievement scores and change in attitude of the pupils towards physical sciences.

Objectives: (i) To study and compare the effectiveness of Inquiry Training Model (ITM), the Concept Attainment Model (CAM) and the Traditional Method of Teaching (TMT) on pupils' achievement, and (ii) to study the relationship of intelligence with achievement, and attitude with achievement.

Methodology: The method of cluster two-stage random sampling was used. Three groups of 120 students in each were selected from three colleges of Dehradun. These Class IX student-groups were matched on intelligence and socio-economic status scores. Non-randomised control-groups

pre-test-post-test quasi-experimental design was used. The tools used included Mental Ability Test by S. Jalota, SES Scale (Form A) by Kulshrestha, Achievement Test and Attitude Scale developed by the researcher. Mean, SD, 't' test, ANOVA and product-moment correlation were used to analyse the data.

Major Findings: (1) The post-test achievement scores were significantly higher than the pre-test scores when taught through ITM or CAM, but not in the case of TMT. (2) The achievement gain scores of both the ITM and CAM groups were higher than the TMT group. (3) There was no significant difference between gain scores of achievement when taught through ITM and CAM. (4) There was a significant difference between pre-test and post-test scores of attitude when taught through ITM and CAM, but not in the case of TMT. (5) Both ITM and CAM were equally effective in inculcating a more favourable attitude towards physical sciences than TMT. (6) There appeared a significant relationship between intelligence and academic achievement and between attitude towards physical sciences with achievement in these. [AB 0061]

Sinha, Saroj Bala. 1990. **An investigation into the effectiveness of objective-based teaching at B.Ed. stage.** Ph. D., Edu. Patna Univ.

Problem: The present study centres around the problem of finding out the effectiveness of teaching based on instructional objectives as compared to teaching through the traditional method (lecture method).

Objective: To study the effectiveness of objective-based teaching as compared to the traditional method.

Methodology: The sample consisted of randomly selected 200 B.Ed. students of Patna Women's Training College which was also randomly selected from among the colleges of education in Bihar. One hundred students each were randomly taken in the control and the experimental groups. Data were collected

through a criteria-based achievement test and personal data sheet. The results were analysed using frequency distribution, mean, median, mode, SDs, 't' ratio, and ANOVA.

Major Findings: (1) Students taught through instructional objectives performed better as compared to the students taught through the traditional method. (2) Age did not affect the achievement of student-teachers taught on the basis of instructional objectives. (3) Income of father/husband did not affect achievement of students taught on the basis of instructional objectives. (4) Urban/rural habitation did not affect the achievement of students taught on the basis of instructional objectives. (5) Marital status did not affect the achievement of students taught on the basis of instructional objectives. (6) Age did not affect achievement of students taught through the traditional method. (7) Income of father or husband did not affect the achievement of students taught through traditional method. (8) Urban/rural habitation did not affect the achievement of students when taught through the traditional method (lecture method). (9) Marital status did not affect the achievement of students when taught through the traditional (lecture) method. [RPSi 0668]

Sood, Kamala. 1990. **Comparison of Advance Organiser and Reception Strategies for acquisition of language concepts in relation to cognitive style, intelligence and creativity.** Ph.D., Edu. *Panjab Univ.*

Problem: The study attempts to compare Advance Organiser in relation to cognitive style, intelligence and creativity among Class IX students.

Objectives: (i) To study whether acquisition of concepts is affected by Strategies of Concept Attainment and Advance Organiser, (ii) to study whether acquisition of concept by the learner and his creativity are independent of each other, (iii) to study whether students possessing different cognitive styles and intelligence levels

differ in acquiring concepts, (iv) to study whether there is any interaction between strategies of teaching concepts and intelligence level of learner, (v) to study whether there is any interaction between strategies of teaching and cognitive style, and (vi) to study whether there is any interaction between strategies of teaching concepts and the creative level of the learners.

Methodology: The sample consisted of 288 students of Class IX belonging to five schools randomly selected from the Union Territory of Chandigarh. The students were randomly assigned to each teaching strategy, with those of Group I to be taught through CAM (Concept Attainment Model), and those of Group II through AOM (Advance Organiser Model). The tools used included Jalota's Group Test of General Mental Ability, Torrance's Test of Creativity (Forms A and B), Group Figure Embedded Test by Witkins, and a test to measure the Achievement of Concepts developed by the investigator. The collected data were analysed using descriptive statistics such as mean, median, standard deviation, skewness and kurtosis. To test hypotheses, the analysis of variance ($2 \times 2 \times 2 \times 2$) measure was employed, 't' ratios were also calculated to test the significance between means.

Major Findings: (1) The Concept Attainment Strategy was found to be a more effective mode of teaching Hindi concepts as compared to the Advance Organiser Strategies. (2) Intelligence, creative levels and cognitive style were redundant factors so far as learning of concepts in Hindi language was concerned. (3) Highly creative and field-independent students scored high in comparison to high-creative as well as low-creative field-dependent students. (4) Field-dependent low-creative students achieved significantly higher than field-independent low-creative students. (5) There was no significant interaction between teaching model, cognitive style and intelligence levels; teaching model, levels of intelligence and levels of creativity; teaching model, cognitive style and levels of creativity; and cognitive style, levels of intelligence

and level of creativity. (6) The interactions involving the variables of teaching model and intelligence level were found to be insignificant. (7) The students taught with CAM retained much more in comparison to those taught with AOM. (8) Field-independent students retained more than field-dependent students. (9) High-intelligence students retained more than low-intelligence students. (10) Creativity acted as a redundant factor towards retention of scores. [JNJ 0293]

Vaidya, S. 1990. **Effect of mastery learning strategy on pupils' achievement, their self-concept and attitude towards Hindi.** Ph.D., Edu. *Devi Ahilya Vishwavidyalaya.*

Problem: It attempts to study the effect of mastery learning strategy on pupils' achievement, pupils' self-concept, and attitude towards Hindi.

Objective: To study the effect of mastery learning and Concept Attainment Model on the learning of Hindi (as a subject) in relation to the traditional method of teaching.

Methodology: The experimental-control group pre-test, post-test design was used. The sample of the study was chosen from Class VI students of a higher secondary school of Indore. In all, 144 students were selected on the basis of IQ and SES, and Groups I, II and III were given respectively, the treatments of Mastery Learning Strategy, Concept Attainment Model and Traditional Method. The measuring tools used for data collection were: Cattell's Culture Fair Intelligence Test, Kuppaswami's SES Scale, Sherry et al.'s Self Concept Test, one Achievement Test and one Attainment Scale prepared by the investigator. The instruction tools included: Hindi Grammar Lessons, 33 Lesson Plans, Group Corrective and Revaluation Test, and Achievement Test. All the three groups were taught for 30 minutes for 33 days. However, the mastery learning group took some additional time. Correlated 't' test and one-way ANOVA were used for data analysis.

Major Findings: (1) The mastery learning strategy was more effective in facilitating learning and raising the achievement of the learners than either the Concept Attainment Model or the traditional method. (2) The Concept Attainment Model group's achievement was significantly higher than that of traditional-method group. (3) The Mastery Learning Strategy was more potent in bringing about improvement in the self-concept of the pupils than either the Concept Attainment Model or the traditional method. (4) There was no significant difference in the Self Concept scores of students taught through the Concept Attainment Model and the traditional method. (5) The Mastery Learning Strategy was more beneficial to the pupils in changing their attitudes favourably towards the Hindi subject than either the Concept Attainment Model or the traditional method of instructions. (6) The Concept Attainment Model was found more effective than the traditional method in developing a positive attitude in students towards the Hindi subject. [PKS 0655]

Viney. 1992. **Effectiveness of different models of teaching on achievement in mathematical concepts and attitude in relation to intelligence and cognitive style.** Ph.D., Edu. *Panjab Univ. .*

Problem: This study centres round the problem of the effectiveness of different models of teaching as regards achievement in mathematical concepts and attitude in relation to intelligence and cognitive style.

Objectives: (i) To compare the effectiveness of the Concept Attainment Model (CAM) and the computer model in terms of mathematical concepts, (ii) to study the effect of intelligence on attainment of concepts in mathematics, and (iii) to study whether the two models of teaching affect the attitude of the students towards mathematics.

Methodology: The total sample comprised 200 students of Class XI. The students were

randomly selected. The tools used included Raven's Advanced Progressive Matrices, Group Embedded Figure Test of Witkins, Mathematics Attitude Scale (MAS) by M.R. Tuli, and the Achievement Test developed by the investigator. Mean, median, skewness, kurtosis, frequency polygon and ANOVA were used to analyse the data.

Major Findings: (1) The Computer Model of teaching was found to be superior to the Concept Attainment Model for teaching concepts in mathematics and for inculcating positive attitude. (2) High-ability students required better mathematical concepts and a more positive

attitude than average and low-ability students. (3) Field-independent students attained more concepts than field-dependent students. (4) Cognitive style and level of intelligence were found to be interacting. (5) High-ability field-independent students developed high attitude and achieved significantly higher scores on mathematical concepts than average and below-average-ability field-independent students. (6) High-ability and field-independent students scored higher and showed better attitude towards mathematics than high-average and low-ability field-dependent students. [JNJ 1252]

Also See

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