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Curriculum Development

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Desai, A.A. 1992. A critical study of the spiral arrangement of sub-units in the mathematics textbooks of Standards I to III. Independent study. *Maharashtra State Bureau of Textbooks.*

Problem: This study tries to investigate the relevance of the spiral arrangement of sub-units in the mathematics textbooks for Grades I-III in terms of educational principles, and its utility for students.

Objective: To assess the suitability of the spiral arrangement of sub-units in the mathematics textbooks for Grades I-III.

Methodology: The survey method was used for carrying out this study. Eight criteria were evolved for evaluating mathematics textbooks. A careful analysis of these textbooks (one each for Grades I-III) was made giving special attention to the spiral arrangement of the sub-units. An 11-item questionnaire and a seven-item interview schedule were used for data collection from 80 teachers of Grades I-III in 30 Zila Parishad Primary Schools in the eastern part of Gadinglaj Taluka. Besides this, the day-to-day notes maintained by these teachers regarding the teaching of mathematics were analysed and seven experts with more than 15 years teaching experience in Grades I-III were interviewed; of these, two were teachers in a junior college of education and one, a lecturer in a college of education.

Major Findings: (1) Spiral arrangement of sub-units in mathematics textbooks for Grades I-III was found to be in consonance with the principles of child psychology. (2) The arrangement of the sub-units in these textbooks conformed to the widely accepted educational principle of 'simple to difficult'. (3) The spiral arrangement of sub-units provided for automatic drill in mathematical operations leading to firm fixation of basic mathematical concepts. (4) The spiral arrangement of sub-units was found to be more time-consuming and promoted inattention among the above-average intelligent who found repetition quite unattractive as well as boring [Author 1831]

Desai, Murali. 1991. **Family dynamics and developmental programmes: Curriculum planning.** Independent study. *Bombay: Tata Institute of Social Sciences.*

Problem: This study attempts to analyse family interaction and development in the context of socialisation within the family, leading to the development of a family-life education programme.

Objectives: (i) To understand family interaction and development in the context of socialisation of family norms, family ecology and the age and needs of individual family members, (ii) to plan family-life education for attitude development about human rights with reference to the family, and skill training for enrichment of family dynamics and strengthening the family's ecological interaction.

Methodology: A tentative curriculum was planned based on theories, research and social work practice. Topics and resource persons were identified to prepare course materials on each topic. The curriculum and the papers were presented at the workshop. Both were revised after the workshop and prepared for publication.

Major Findings: (1) A tentative curriculum was developed, based on theories, research and social-work practice. Course materials were developed and revised through a workshop of experts and resource persons. (2) The final results of the entire exercise yielded a six-unit curriculum comprising the following: (a) Theoretical and conceptual framework to study family dynamics and developmental programmes, (b) Family dynamics, (c) Planning family-life education programmes, (d) Family-life education programmes for general enrichment of family interactions, (e) Family dynamics by stages of family-life and appropriate family-life education programmes, and (f) Strengthening the family's ecological interaction. The curriculum included guidelines for methods of teaching as well as evaluation. [RJ 0911]

Deshpande, A.R. 1992. **An enquiry into the development of curriculum in mathematics at the secondary stage of education in Maharashtra State.** Ph.D., Edu. *Nagpur Univ.*

Problem: This study focuses on experimentation with the secondary-level mathematics curriculum in the State of Maharashtra.

Objectives: (i) To assess how far the secondary-level mathematics curriculum is of practical utility for students, (ii) to find out whether the curriculum is rich enough to meet the new demands and fulfil the aims of secondary education, (iii) to assess how far the secondary-level mathematics curriculum is based on psychological considerations, and (iv) to examine how well the secondary-level mathematics curriculum articulates with the primary and secondary-level mathematics curricula.

Methodology: It was essentially a survey-based study. A survey was conducted on a sample of 655 mathematics teachers (359 from urban areas, covering 164 males and 132 females), drawn from 200 schools of Vidarbha. Data were collected through an opinionnaire and an interview schedule. Besides books, periodicals and units deleted from and added to the mathematics syllabi of Grades VIII-X were also made use of. Data analysis was done through percentage frequencies and chi-square test.

Major Findings: (1) There was ample evidence that the secondary-level mathematics curriculum help achieve various cognitive objectives, skills and appreciation. (2) The mathematics curriculum enabled students to develop interest in problem-solving and to express themselves in a precise and concise manner but it did not enable them to read mathematics literature. (3) The mathematics curriculum helped students improve their thought process and discrimination between facts and opinions, and to appreciate the aesthetic value of mathematics. (4) The 'topical method' and the Dalton Plan were only partially used in the organisation of the mathematics curriculum. (5) Inadequate time allotted per week and lack of proper suggestions about reference materials for further study made the mathematics curriculum less effective. [GPK 1693]

Devi, Susila A. 1990. **A critical study of the environmental curriculum in Andhra Pradesh.** Ph.D., Edu. *Osmania Univ.*

Problem: This is an attempt at a critical study of the environmental curriculum in the schools of Andhra Pradesh.

Objectives: (i) To content-analyse the environmental studies curricula of Grades I-V in terms of the stated curriculum, (ii) to assess how far the curricula were suited to the needs and interests of the learners, (iii) to assess whether the curricula had any provisions for gifted learners, and (iv) to investigate the reactions of science teachers to a need-based curriculum.

Methodology: The data were collected using the survey method on a sample of 377 primary school teachers from three geo-politically distinct areas of Andhra Pradesh, viz. Coastal Andhra, Rayalseema and Telengana, involving two representative districts from each, i.e. East Godavari, Guntur, Prakasam, Nellore, Warangal and Medak. A comprehensive check-list with items on various aspects of the study was used for data collection and the data was content-analysed. Chi-square was used to assess the significance of differences.

Major Findings: (1) The Environmental Studies (EVS) curricula did not cater to the essential needs of learners for whom they were meant. (2) The EVS curricula did not introduce children to the desired

scientific skills and attitudes. (3) The prescribed curricula did not adequately reflect the stated curriculum objectives. The investigator highlighted that EVS curricula in order to be more effective, should be comprehensive, sequential and full of experiences that link children's school-based learning with their environment and the universe. [SSS 0851]

Dhand, Harry and Lyons, John. 1991. **An innovative social studies curriculum in Canada: An experiment.** *Indian Educational Review,* Vol. 26(4): 1-14.

Problem: This study is an attempt at developing an innovative social studies course for Saskatchewan, Canada, in view of the centre-state controversy regarding the proposed introduction of new courses in the middle school (Division III).

Objective: To develop an innovative social studies course for the middle school.

Methodology: A survey of innovative practices and major trends related to social studies education in the USA and Canada was conducted by the investigators in order to formulate the proposed innovative course.

Major Findings: (1) Social studies education concentrates largely on citizenship education with special emphasis on 'cultural literacy'. (2) Humanistic methods were increasingly gaining popularity, with ethnic pluralism as an emerging legitimate trend. Besides, education for global perspective was also becoming a popular goal for many social science teachers. The other two trends in social science education were the growing controversy over the usefulness of the textbook and the visible impact of 'Back to Basics' movement. (3) For the proposed innovative curriculum, the investigators suggested a set of guidelines for improving the new social studies (Division III) curriculum, which included (a) greater emphasis on open-ended questions, critical thinking and problem-solving skills; (b) emphasis on value analysis leading to value-classification; (c) linkages between real life and the social studies content; (d) visible emphasis on concept development using multiple and even unconventional sources; (e) inclusion of current events and world affairs as important parts of the social studies content; (f) full participation of teachers in every phase of the curriculum development process. [SKB 1913]

John, O.T. 1991. **An investigation into the present English curriculum in polytechnics in Tamil Nadu.** M.Phil., Edu. *Algappa Univ.*

Problem: This study attempts to critically examine the existing English curriculum in the polytechnics of Tamil Nadu and develop a revised curriculum based on expert opinion and test its effectiveness experimentally.

Objectives: (i) To identify how far the existing curriculum is useful for technical students in learning the four major language skills, viz. listening, speaking, reading and writing, (ii) to design a new curriculum, and (iii) to test effectiveness of the new curriculum through experimental investigation.

Methodology: This study was conducted on 280 male engineering students of the first year of the diploma programme of Annamalai Polytechnic, Chettinad. Inputs for developing the new English curriculum were obtained by consulting experts and the students. The learners' levels of proficiency in English with regard to the various skills were assessed through a set of tests. The experimental investigation of the effectiveness of the new curriculum was done on 80 learners divided into experimental and control groups, with 40 learners in each, who were matched on age, socio-economic status, achievement, study habits and IQ. The pre-test-post-test design was used for this study. The data were treated using descriptive statistics, 't' test and correlational analysis.

Major Findings: (1) The study indicated greater effectiveness of the new curriculum. (2) The post-test performance of the experimental group in all the four skills was significantly better than that of the control group. [SM 1732]

Khurana, G.S. and Singh, R. 1992. **An analysis of the existing post-graduate course curriculum of extension education at various agricultural universities in India.** *Journal of Research,* Vol. 29(1): 139-149.

Problem: This study examines whether or not there exists a uniformity in the Ph.D. courses in extension education across various agricultural universities.

Objectives: (i) To know the total number of Ph.D. courses in extension education in different areas in the various agricultural universities, (ii) to examine the total number of credit-hours of major and minor and supporting courses and the research work required for the Ph.D. programme, (iii) to identify different areas in the discipline of extension education for offering Ph.D. courses, and (iv) to identify the various learning experiences provided to the Ph.D. scholars of extension education.

Methodology: Data were collected through a survey of the Ph.D. programme in agricultural universities, apart from the Indian Agricultural Research Institute, New Delhi, and the National Dairy Research Institute, Karnal.

Major Findings: (1) There existed diversity in the number of courses in each area of extension education among agricultural universities and research institutes. (2) The highest number of credit-hours for major, minor and supporting courses and for research work in some universities were 32,16,10 and 54 respectively, while the lowest were 12, 6, 3 and 30, respectively. (3) The Ph.D. courses were different from various areas of extension education. (4) The Ph.D. curricula of various universities and research institutions had provision for a variety of learning experiences for Ph.D. scholars. [SPK 1645]

Masih, Aejaz. 1991. **A study of attitude towards science, understanding the nature of science and concept-attainment in science of middle school students in Madhya Pradesh: A comparison of effects of HSTP curriculum and NCERT (adopted) curriculum.** Ph.D., Edu. *Jamia Millia Islamia.*

Problem: This survey-based research was carried out in three districts of Madhya Pradesh, viz., Ujjain, Dhar and Shajapur, to compare the effects of the Hoshangabad Science Teaching Project (HSTP) and the NCERT (adopted) science curriculum.

Objectives: (i) To study the differences in attitude towards science, understanding of the nature of science and concept-attainment in science among Grade VIII children who had followed the HSTP curriculum or the NCERT (adopted) curriculum, and (ii) to evaluate the HSTP and the NCERT curricula on three criteria, viz. attitude towards science, understanding the nature of science and concept-attainment.

Methodology: A sample of 1,147 Grade VIII students (HSTP — 564, NCERT — 583) was taken from 28 government middle schools from three districts of Madhya Pradesh. The tools used to collect data were: Adapted Version of B.J. Fraser's Science-related Attitude Test (TOSRA), Hindi adoption of Klopfer, Carrier and Geis' Test of Understanding Science, Test of Concept-Attainment in Science developed by the investigator and Jalota's Group Test of Mental Ability.

Major Findings: (i) The HSTP students performed better than the NCERT curriculum students on TOSRA. (2) The HSTP students had a significantly more favourable attitude towards scientific enquiry than those who followed the NCERT curriculum. (3) Both groups lacked a sound understanding of the nature of science. [SPR 0608]

Mehdi, Baqer. 1988. **Instructional development and social objectives of education at the secondary stage.** Independent study. *National Council of Educational Research and Training..* (ERIC Funded).

Problem: The study assumes that secondary level education is excessively tilted in favour of knowledge at the cost of various instructional, developmental and social objectives that are identified with it.

Objective: To evaluate the secondary school curriculum in the light of the instructional, developmental and social objectives of education.

Methodology: The data for the study were collected using a questionnaire for teachers on the instructional, developmental and social objectives of secondary level education. This questionnaire dealt with deficiencies of content, and biases against/towards instructional objectives. A working group meeting of well-informed teachers from the schools of Delhi was also held for eliciting their opinions about the school curriculum as it is implemented.

Major Findings: (1) The curricula for various subjects were not well balanced and did not help to achieve the various categories of objectives in a fair manner. (2) The values, attitudes and applied aspects of the curricula need to be emphasised. (3) Skill-oriented instructional strategies need to be used for attainment of developmental and social objectives. (4) The evaluation techniques currently in use hinder the attainment of various curricular objectives. (5) Overload and excessive emphasis on the knowledge aspect of the curricula were the two major deficiencies of the existing secondary level curricula. [SRA 1119]

Minocha, Manisha. 1989. **Responses of primary school teachers to an experiment in curriculum reform: A study of the teachers involved in the integrated programme.** M.Phil., Edu. *Univ. of Delhi.*

Problem: The study attempts to assess the reactions of teachers towards curriculum reform, and the causes of these reactions.

Objectives: (i) To assess teachers' response towards the integrated programme in terms of receptivity, resistance or indifference, (ii) to examine the relationship between teachers' responses and their background, and (iii) to investigate the problems faced by teachers while participating in curriculum reform.

Methodology: The data were collected from a census-sample of teachers in 25 randomly selected schools with the help of textbooks and workbooks used in the curriculum reform, a questionnaire for eliciting teachers' views and a problem check-list. Comparisons were established through Frequency Percentages.

Major Findings: (1) Teachers were more receptive to the NCERT evaluation scheme and textbooks than to those of the integrated programme. (2) Most teachers cited many problems that they faced, the problems related to learners' parents being the most intense. (3) The teachers considered the burden problem the least significant. [RDM 0362]

Mlanga, Andrew Titus Omolo. 1992. **Perceptions of high school teachers, students, parents and** educational administrators regarding the principles, practices and procedure of curriculum development programmes for high schools in Nairobi, Kenya. Ph.D., Edu. *Panjab Univ.*

Problem: This is a study of the curriculum development programmes for high schools in Nairobi, Kenya, and the perceptions of various interest groups about these programmes.

Objectives: (i) To determine how teachers, students, parents and educational administrators perceive curriculum development programmes in Kenya, (ii) to establish how position-occupant groups perceive the principles, practices and procedures of the curriculum development programmes, (iii) to determine whether there were divergent perceptions of the leadership role of the administrators in curriculum development, and (iv) to provide suggestions for bringing about an improvement in the existing curriculum development programmes.

Methodology: This survey-based study used four randomly selected samples of 2,000 high school teachers, 150 high school students, 200 parents and 50 educational administrators. Data were collected about various aspects of curriculum development programmes in Kenya with the help of a questionnaire based on the Likert Opinion Scale. Besides percentages and descriptive statistics, rank correlation was used for data analysis.

Major Findings: (1) According to the perceptions of the various interest groups, the curriculum should be an organised whole of learning experiences, both within as well as outside the school. (2) The majority of the respondents supported the assumptions about the principles and practices of curriculum development. (3) The majority of the respondents agreed that curriculum evaluation should determine the extent to which educational objectives were being attained by the schools. (4) It was suggested that teachers should participate in regular evaluation of the constructed curriculum and its implementation. (5) It was proposed that the Government of Kenya should set up a National Council for Curriculum Development. [JNJ 0278]

Mohan, S. and Krishnaraj, R. 1991. **A study of sex-stereotyping in the primary school curriculum and its effect on self-concept among female children.** Independent study. *Alagappa Univ.*

Problem: The study is based on sex-stereotyping in primary school textbooks and its perception by teachers and parents and its effects on the self-concept of female learners.

Objectives: (i) To identify the male-centred and the female-centred content in the primary school textbooks of Tamil, English, environmental sciences, environmental social studies, community living, fine arts and mathematics, (ii) to identify the influence of sex-stereotyped content on the self-concept of female learners, (iii) to study the attitude of teachers and parents towards sex-stereotyping in primary school textbooks, and (iv) to suggest strategies for developing a positive self-concept among primary school girls.

Methodology: A sample of 400 primary school children (with equal representation from girls and boys) and 100 teachers and 100 parents was used for this study. The data were collected using the survey method with the help of questionnaires, Harimohan Singh's standardised Self-concept Scale, another tool on self-concept trait descriptive objectives, and Attitude Scales. Descriptive analysis, differential analysis and correlation analysis were used for analysing the data.

Major Findings: (1) There were significant differences in textbooks in terms of male-centred and female-centred content. (2) Both teachers and parents felt that primary school textbooks were sex-stereotyped. (3) The family, school and social environment factors played a dominant role in influencing the self-concept of female learners. (4) There were no significant differences in terms of male-centred and female-centred poems and pictures in primary level textbooks. [SM 1734].

Natarajan, V. 1982. **A monograph on syllabus analysis and restructuring.** Independent study. *Association of Indian Universities.*

Problem: The syllabus document as it obtains now in several subjects in various disciplines is inadequate. Very often, the syllabus consists of a listing of major topics with very little specific expansion of the various content topics with the result that varying interpretations of the breadth and depth of these topics are possible. The inadequacies are in the areas of content, purposes of teaching the content, mode and media of teaching and methods of checking on the learning. This study attempts to show not only the inadequacies of the present syllabus, but also the need to analyse and restructure it.

Objectives: (i) To try to identify the inadequacies of a traditional syllabus, (ii) to develop an analysis-proforma for finding out the coefficient of clarity of any syllabus, (iii) to establish the need to analyse and restructure the syllabus, and (iv) to show the importance of the analysis as a minimal reform programme to be adopted by all universities.

Methodology: A five-point rating scale was used in an analysis-proforma administered to teachers of varying levels of experience in the same subject. Before the proforma was administered to teachers drawn from different affiliated colleges, a lead lecture focusing their attention on certain basic principles of syllabus analysis was given, followed by detailed instructions for filling up the proforma individually.

Major Findings: (1) The syllabus document as it obtains now in several subjects in various disciplines is inadequate. The inadequacies are in the areas of content, purposes of teaching the content, mode and media of teaching and methods of checking on the learning. (2) The syllabus must specify in general terms a set of educational objectives, and also in specific terms a set of instructional objectives. Equally important is the specification of the methods and techniques of teaching to be adopted for effective learning and feedback. (3) 'How clearly does the syllabus provide guidance?' can be determined by the teacher by answering the questions listed in the analysis-proforma. (4) Syllabus analysis and restructuring should form a part of the minimal reform programme to be followed by universities. [AA 0018]

Nath, Kiran. 1988. **Development of curriculum on some dimensions of non-formal education.** Ph.D., Edu. *Agra Univ.*

Problem: This study is concerned with the development of a curriculum on some dimensions

of non-formal education for adult females.

Objectives: (i) To develop a need-based curriculum for non-formal education for adult females, (ii) to devise suitable non-formal methods and materials for trying out the curriculum, (iii) to assess the effectiveness of the curriculum, (iv) to try out the curriculum over a specific period, and (v) to examine through case studies the behavioural and attitudinal changes, if any, among the try-out sample.

Methodology: This study was based on the survey method. A sample of 100 adult females from adult education centres located in the backward areas of Agra City was divided into two groups— one experimental and the other control—each of 50 females. Data were collected through an open-ended questionnaire and an interview; a part of the data was based on observations of the life-style of the respondent sample.

Major Findings: (1) The percentage of literacy was 42% and 44% in the control and the experimental groups, respectively. (2) As many as 92% in the experimental group and 88% in the control group were married and the average number of children they had was four. (3) Most members in the sample worked as domestic servants and their work included cleaning, cooking and baby-sitting. (4) Only 16.1% in the experimental group and 20% in the control group lived in their own dwellings. (5) The members of the sample felt that they were uniformly neglected by the local authorities and they suffered from frustration and neglect. (6) The members of the sample by and large had no idea about hygienic conditions, and a clean environment was not an important aspect of life for them. (7) The members of the sample had accepted and got adjusted to living in poor homes and working in limited space. [SS 0790]

Pal, Rajendra. 1989. **Curriculum development in academic staff colleges for the orientation of teachers of higher education.** M.Phil. Edu. *Institute of Education, Indore.*

Problem: This study attempts to investigate the attitudes and reactions of participant teachers in orientation courses conducted for teachers of colleges and universities at the Academic Staff College at Devi Ahilya Viswavidyalaya, Indore.

Objectives: (i) To examine the need for academic orientation of teachers of colleges and universities, (ii) to study the relevance of the existing curriculum of the ASC based on UGC guidelines, and (iii) to develop an alternative curriculum for the orientation of college/university teachers.

Methodology: The sample comprised 1,109 college/university teachers from four universities of Madhya Pradesh participating in an orientation programme at ASC, Indore. Of these, 45 were female teachers. The survey method was employed for this study. An opinionnaire and a ratio scale were used for data collection. Chi-square and content analysis were used for data analysis.

Major Findings: (1) Only 36% of the participants felt that there was a need for an orientation programme for college/university teachers. (2) An overwhelming majority (85%) of the participants felt that such orientation programmes should be arranged immediately after appointment. (3) Most participants felt that these programmes should be full-time and compulsory. (4) The participants felt that the orientation programme should have greater emphasis on methods of teaching, maxims and techniques of teaching, teaching aids and models of teaching. (5) Curricula of foreign universities, use of available resources for teaching futurology, teaching for fostering secularism and democracy and eradication of drug addiction should also be added as topical dimensions to the orientation programmes. [Author 0577]

Prakash, Vidhya. 1991. **An investigation into curriculum policies, planning and their implementation at the primary school level in Delhi during 1966-1976.** Ph.D., Edu. *Jamia Millia Islamia.*

Problem: The study investigates into curriculum policies, planning and their implementation at primary school level in Delhi during 1966-76.

Objective: To investigate into curriculum policies, planning and implementation at the primary school level in Delhi during 1966-76.

Methodology: The respondent sample comprised teachers' teaching in the schools of the Municipal

Corporation of Delhi; teachers from aided and unaided schools were not included in the sample.

Major Findings: (1) Data analysis revealed a depressing scenario in MCD schools during the period 1966-76, which was characterised by lack of teacher initiative, sub-standard pre-service and in-service training of teachers, political interference in schools, ineffective school supervision, inadequate finances, the burden of heavy syllabi and defective teaching of science. (2) Besides, the teachers felt that the policy of recruiting Education Officers from outside was a defective policy. [SPR 0609]

Rao, Sudha K. 1992. **Structural influence on restructuring of curriculum.** Independent study. *National Institute of Educational Planning and Administration.* (Council for International Educational Studies Washington, D.C. USA Funded)

Problem: This study aims at exploring the various organisational and structural factors that influence the restructuring curriculum at the undergraduate level.

Objectives: (i) To identify the structural factors that influence the process of restructuring curriculum, (ii) to analyse the relationship between structural factors and curriculum changes, and (iii) to suggest planning and managerial strategies for restructuring curriculum at the undergraduate level.

Methodology: This survey-based study was conducted on a sample of three institutions: a university, a liberal arts college and a community college. Besides documentary analysis, interviews were conducted with university and college presidents, vice-chancellors, secretary at the secretariat, directors of accreditation councils, teacher union leaders, teachers, students and subject experts. The data collected through these interviews and documents were analysed through qualitative data-analysis techniques.

Major Findings: (1) The larger the size of the institution and the greater the discipline within the department, the easier it was to introduce a change in the curriculum. (2) Curriculum change was easier to introduce in a private organisation than in a government or a constituent institution. (3) Institutions in the vicinity of major institutions where curriculum have already been restructured found it easier to introduce curriculum change. (4) Institutions with innovator status found it easier to bring about curriculum change. (5) It was relatively easier was to introduce curriculum change where the faculty was comparatively more powerful than the administration. (6) The larger the number of people involved in introducing curriculum change, the easier was its achievement. (7) The faculty support for curriculum change depends on the discipline and the level of teaching; the science faculty, for instance, was hardly interested in curriculum change in science-related subjects that were meant for undergraduate arts students. [NS 1883].

Sachan, R.S. 1991. **Validity study of Bloom's taxonomy of educational objectives in the cognitive domain.** Ph.D., Edu. *Agra Univ.*

Problem: This study attempts to validate Bloom's taxonomy of educational objectives in the cognitive domain. This taxonomy is widely used by teachers and teacher educators in India.

Objectives: (i) To examine whether the six-tier taxonomy of educational objective (K-E) exists indeed in the teaching of science, (ii) to examine whether the three-tier taxonomy comprising knowledge, understanding and application adopted by the NCERT is adequate, (iii) to examine whether there is a positive relationship between process responses as identified by students and their product responses, and (iv) to assess whether objective-based teaching yields better results for developing the category systems of the cognitive domain.

Methodology: Data for this study were collected through two tools, viz. Joshi's Non-Verbal Group Test of Intelligence and an Objective Science Test developed by the investigator on a sample of about 500 students in the age-range 6-18 years. The data were analysed with the help of 't' test, ANCOVA and chi-square.

Major Findings: (1) Out of the three postulates of Bloom's taxonomy, the one related to cognitive behaviour as learned behaviour was clearly

demonstrated. (2) A four-tier hierarchy, comprising the sequence 'knowledge', 'comprehension', 'application' and 'evaluation' was observed instead of the six-tier hierarchy, 'K' through 'E'. (3) Learning was cumulative though the order of cumulative learning remained unsubstantiated. (4) Evaluation, represented neither as a separate category nor as a part of application, had its independent existence making it the apex unit in the four-tier taxonomy. (5) Objective-based instructional material and objective-centred teaching had a positive impact on student learning as regards 'comprehension' and 'application' objectives. (6) Process response and product response were unrelated. [SS 1366]

Senapati, T. 1989. **Strategies for primary curriculum development in population education for the schools of Puri District.** M.Phil., Edu. *Ravenshaw College, Cuttack.*

Problem: This study is concerned with the status of population education, particularly at the primary level.

Objectives: (i) To examine the issues related to formulation of curriculum objectives and curriculum development, (ii) to develop curriculum strategies, (iii) to study the constraints in curriculum implementation, and (iv) to evolve a proposal pattern of population education for primary schools.

Methodology: The sample comprised 125 persons randomly selected from various strata out of a total of 761 schools of Puri District. Data were collected using a questionnaire and interviews.

Major Findings: (1) Population education had been introduced in 17.4% of the schools of Puri District in different content areas, using the integrated or subject-centred approach. (2) There existed a lack of adequate instructional materials in population education. (3) Almost 50% of the teachers were not in favour of providing orientation programmes for population education in spite of the fact that only a very few teachers had been exposed to population education strategies. (4) The majority of teachers (86.75%) did not favour special population education courses for primary school children. (5) Population education courses could be organised through all types of co-curricular activities. [KCP 0490]

Shukla, Nandita. 1991. **A curricular design for value-oriented secondary school teacher education in Punjab.** Ph.D., Edu. *Panjab Univ.*

Problem: This study examines the possibilities of integrating the existing teacher education courses, developing self-contained instructional modules and assessing their effectiveness for providing value-oriented education to teachers.

Objectives: (i) To identify content areas in existing B.Ed. courses to provide an integrated value-education curriculum, and (ii) to prepare and assess the effectiveness of a value-oriented curriculum designed for the B.Ed. programme.

Methodology: The sample comprised 50 teacher-trainees, randomly chosen. The existing courses for the B.Ed. programme were analysed. Four self-contained instructional modules were developed by the investigator. These were used on the sample and their effectiveness was assessed. Median and chi-square were used for data analysis.

Major Findings: (1) The existing courses for the B.Ed. programme in various colleges of education in Punjab had ample scope in terms of integrating values with various teaching subjects as well as activities. (2) Various approaches, the chief among these being the 'clarifying approach', the 'indirect contrived approach', and the 'integration through subjects approach', could be used for providing integrated value-orientation through the existing curricula. (3) Various types of activities, viz. intake activities, organisational activities, demonstrative activities and expressive activities, could be used to support integrated value-orientation among the students. (4) A variety of teaching materials, e.g. textbooks, journals, magazines, newspapers, photograph sets, slides, cassettes, video and TV programmes, films, etc., could be used for the integrated value-orientation of teacher-trainees. (5) Teachers' value orientation was an essential input for the proper value-orientation of students. (6) The modules prepared for value-orientation of teacher-trainees were found to be quite effective. [JNJ 0305]

Vijayakumar, B. 1990. **Development of an optimal model of chemistry curricula at collegiate level.** Ph.D., Edu. *Univ. of Kerala.*

Problem: This study is primarily concerned with the selection, adaptation and creation of models of chemistry curricula and the testing of these models to determine the optimally effective ones.

Objectives: (i) To identify certain models of the chemistry curricula, (ii) to study the effectiveness of these models, and (iii) to determine the optimally effective models.

Methodology: Both survey and experimental methods were used for the study. A sample of 564 students and 315 teachers was drawn from 10 colleges affiliated to Kerala University, urban as well as rural areas were sampled. The student sample comprised 260 males and 304 females. Of these, 279 were from rural areas. Three tools, viz. Chemistry Learning Approach Inventory, a judgment schedule and an additional schedule, were used for data collection. In all, seven models, viz. the concept attainment model, the inductive thinking model, the inquiry training model, the advance organiser model, the memory model, the cognitive growth model and the biological science inquiry model were used, and their effectiveness tested. The data were analysed through percentage, chi-sqare, intercorrelations and Kendal's coefficient of correlation.

Major Findings: (1) The inquiry training model was optimally effective in terms of the overall criteria of effectiveness. (2) The advance organiser model was the least effective. (3) The use of all the seven models had a favourable effect on students' learning and performance. [VR 1668]

Yadav, A.J. 1992. **A study of hotel workers in Kolhapur District with a view to preparing a curriculum for their education.** Ph.D., Edu. *Shivaji Univ.*

Problem: This study addresses the needs of hotel workers and seeks to formulate a need-based curriculum for them.

Objectives: (i) To study the working conditions of hotel workers in Kolhapur District, (ii) to develop a need-based curriculum for hotel workers, and (iii) to examine the impact of a training programme on hotel workers.

Methodology: The sample consisted of 350 hotel workers from city hotels and 240 from taluka hotels out of 400 city hotels and 55 taluka hotels. The hotel sample was based on 20% of all A, B, and C grade hotels in Kolhapur District. Data were collected through a questionnaire, interview and an observation schedule. The questionnaire yielded data on educational needs and expectations of hotel workers. Observation-based data were collected through visits to hotels and these were about working conditions, hygiene mode of service, addiction, etc. On the basis of the data analysis, the investigator developed a training programme in Marathi and conducted the programme for two-and-a-half months. Information related to the training programme was collected through pre-test and post-test. These data were analysed through 't' test and ANCOVA.

Major Findings: (1) The target group of hotel workers in the age-group 16-30 years needs education; their average education was up to Grade V. (2) Almost all hostel workers smoke, chew tobacco and consume liquor; they took their job due to poverty and low education. (3) Workers in A grade hotels had proper personal hygiene and health. (4) As many as 68.3% hotel worker were paid less than Rs 200 per month. [CMY 0896]

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