

## Curriculum, Methods and Textbooks

### A Trend Report

S. ROY

#### INTRODUCTION

Throughout the world there is reflection of a growing faith in the power of education — faith in education as the source of guidance to give children and youth a share in to-day's world and leadership in tomorrow's. In our country also education has been recognised as the instrument for national development, for creating a new social order. Consciously or unconsciously teachers, educators and educational authorities make choices which affect the kinds of experiences they provide for children and youth. These choices range from the selection of the very goals the educational institutions seek to attain and the relations maintained with greater community, to organisation of educational programme, the methods employed, the materials used and the provision made for differences among pupils. The quality of learning experiences is derived from the choices made. This is the basic concept of curriculum development and research. The very complexity and multitude of decisions and the fact that they are arrived at by different segments in the educational organisation make it all the more necessary that curriculum has to be developed on the basis of valid research evidences. Research is thus in-built in the process of developing the curriculum. In the post-independence era in India different educational commissions and committees expressed in one voice the need for renovating and revitalising the current curriculum. The recent nationwide move for implementing the scheme of uniform educational structure (10 + 2 + 3) has made this need all the more urgent. The same concern urges the director of the NCERT to express in 'Curriculum for the Ten-Year School — An Approach Paper' (1975): 'The necessity of evolving a national consensus on a new curriculum is manifest. It is accepted all round that the curriculum, by way of its objectives, content and methodology, has to serve the current and emerging

needs of the Indian society and the citizen, and these also need to be spelled out so that the ideas may be translated into action.' Chari and Ghosh (1973), in a chapter in the Fourth Indian Year Book of Education, have also argued in the similar line. A clear-cut methodology of thinking and planning is of primary importance in order to shape a rational and scientific curriculum. A look into the researches in the area of curriculum, methods and textbooks in our country seems to be the necessary first step in this respect.

While going in search of what has been done in the area one may come across 'Behavioural Science Research in India, a Directory, 1925-65' (Pareek and Kumar, 1966), and 'Directory of Indian Behavioural Science Research' ((Pareek and Sood, 1971), which gave a more or less exhaustive list of titles of published as well as unpublished Indian researches in this field. NCERT (1966 and 1968) published the titles of Ph.D. theses in education and M.Ed. dissertations or theses carried out in Indian universities during the period 1939 to 1966. The Third Indian Year Book of Education (1968) by the NCERT gave a review of thirtyone studies on curriculum and eightyfive studies on methods of teaching school subjects, the studies being mostly M.Ed. dissertations, and very few at doctoral level. In 'A Survey of Research in Education' (Buch, 1974), Desai and Roy presented a review of studies on curriculum, methods and textbooks, based on sixtynine studies at Ph.D. level and also an equal number of research projects undertaken at institutional level. The present report includes all the studies reviewed by the last named authors, in addition to quite a number of other studies in the area. In fact it may be said that the present review is based exhaustively on all the studies at doctoral and institutional levels in this country for the last three decades.

In all, hundred and eight studies have been re-

viewed in this chapter. Of these, fiftyfour are Ph.D. theses and the remaining fiftyfour are research projects undertaken at various institutions. Excepting one in sociology and two in psychology all other Ph.D. theses are in education. In respect of areas covered, these studies may be classified into a variety of ways though there is always a possibility of overlap. Here, they have been classified under the following sections :

#### A. CURRICULUM

##### I. General Curriculum

- (a) Trend or developmental history
- (b) Cocurricular aspects
- (c) Moral instruction

##### II. Linguistic studies

##### III. Vocabulary studies

##### IV. Studies on reading

##### V. Teaching of languages

- (a) English
- (b) Other languages

##### VI. Mathematics and Science

##### VII. Social Studies

#### B. METHODS

#### C. TEXTBOOKS

An annotated account with respect to some important features of the studies under review is given in the following paragraphs.

#### A. CURRICULUM

##### I. General Curriculum

##### (a) Trend or developmental history :

A few studies have dealt with the broader aspects of curriculum. They have tried to analyse or examine the curricular trend or historical development of curriculum at different stages and in different periods and areas of the country. With the dawn of independence, it was Gothiverekar (1947) who first made a comprehensive study of the secondary school curriculum in the province of Bombay. He criticised the then curriculum to be narrow in aim being a left-over of the British rule, and recommended reconstruction of a new curriculum catering to all aspects of development of the learner. After two decades Channana (1967) made a historical survey of the high school curriculum in the Punjab during the twentieth century and advocated a new and effective secondary curriculum. Pillai (1968) investigated into the changes in the content and scope of the primary as well as secondary school curriculum in Kerala during the thirty years since 1934. After examining the pres-

cribed syllabi, question papers, examination system, textbooks prescribed for study, administration reports and reports of the expert committees he came to a conclusion that although in the light of aims and outcomes the syllabus fulfilled the basic requirements as far as its contents were concerned, much more remained to be done for raising the standard of education. Ghosal (1973) analysed the curricular trends in secondary education in India during British rule in the context of developments in England. His thesis has been that secondary school in India had failed to come upto expectation for the simple reason that its curriculum was an imitation of the British model without proper consideration of the social, economic or cultural context of the nation. Gupta (1973) critically analysed the elementary school curriculum in NEFA and found that it was hardly related to NEFA environment. Overemphasis on the three R's, isolation from life outside the school, inadequate provision for the needs of child life, subject centredness, and domination by examination were some of the major defects located in the existing curriculum.

In the area of curriculum research, studies on Indian languages, in general, have assumed an added importance in the context of need for national and emotional integration. The three language formula, although in force in the schools, has raised doubt about its validity in the minds of educators. Touching this broader aspect of curriculum, Chaturvedi and Mohale (1972) assessed the position with regard to learning of different languages at different stages of school education in the states and union territories of India. The study revealed that there were more than fifty languages taught at schools in different parts of the country. Since two or three languages were taught compulsorily at middle and secondary stages, time allotted for language teaching was more than forty percent of the total time in school time table.

Two studies covered home science curriculum. Shah (1975) made a critical inquiry into the progress of home science education in the secondary schools of India, while Deulkar (1967) evaluated home science curriculum with special reference to its functional implementation and the personal and professional satisfaction of the students.

To look into the curriculum with a narrower campus is as important as to view it with a broader perspective, because different problems of curriculum development are brought into sharper relief that way. Srivastava (1968) studied the important characteristics of achievement of students in different areas of curricular learning and the effect of intelligence and

sex on the achievement in different areas; Vasantha (1972) investigated into the work values of students in relation to their intelligence, achievement and SES; and Sinha (1971) tried to find out some correlates of job orientation of university students. In the perspective of vocationalisation of secondary education Raizada's (1972) study is worth noting. He studied the patterns and problems of typewriting education in Indian secondary schools and made an important contribution of 'the simplified keyboard' which presented a radical change in Hindi typewriter keyboard. Keeping in view the urgent need of reorientation of the present curriculum Prasad (1970) pleaded that the best wealth of folk literature and folk culture should be fitted into it.

#### (b) Cocurricular aspects :

The traditional school curriculum has been criticised for being too bookish. It has little scope for physical education, crafts and various cocurricular activities. Five studies drew attention to this aspect. Daisy (1963) analysed the need for physical education for girls in India. Chaturvedi (1957) discussed the role of craft as a medium of education in elementary schools. Pani (1969) found that participation and achievement of pupils in cocurricular activities were intimately associated with the personal development of the pupils. Rao and Patel (1965) investigated into the intramurals and inter-school competitions in games and sports. He found that games and sports in school life resulted in an increase of favourable and decrease of unfavourable attitudes toward cooperative group activities. Agarkar (1947) recommended introduction of folk dance in the school curriculum as a means of physical education. That cocurricular activities have ample potential for training of the adolescents and youth in cooperative group behaviour and leadership was substantiated by these studies.

#### (c) Moral instruction :

It has been an open question whether the school children should be given moral instruction. Opinion differs in this respect as the judgment on the question is value loaded. Planners of school curriculum of a democratic country have to be cautious to decide if values can at all be taught, and if so, what values are to be inculcated in the children at school stage. Perhaps morality as a value has relevance for instruction in the perspective of character formation as one of the aims of school education as it has been held by the Secondary Education Commission (1952-53). Seetharamu (1974) took up this problem and

tried to find experimentally the effect of direct moral instruction on the moral development of the upper primary children. Indication was there that instruction helps development of different aspects of morality in children.

## II. Linguistic studies

Linguistic studies are of basic importance in curriculum construction and formulation of syllabus, as they supply relevant information to have a deeper insight into the different components of language learning skills. In the studies referred to in this section, linguistic analysis and comparisons were made of different languages with reference to vocabulary, sound systems, grammatical structures and their pedagogic implications. Modi (1966) made a comparative study of English and Gujarati syntaxes. Jagannathan (1969) collected Hindi and Tamil words having the same source but differing in meaning, and analysed their nature. Vishwamitra (1969) compared Hindi and Tamil phonetic sounds. In order to arrive at a norm of Hindi sounds, Chaturvedi (1972) surveyed the Hindi speech sounds in different Hindi speaking areas. In a more recent study Chaturvedi (1974) made a graphemic analysis of Devanagari script as used in reading and writing Hindi, and finally tried to work out the rules of Hindi orthography along with the use of punctuation marks. In order to improve language skills in Kannada, Pattanayak et al. (1972) attempted to develop a bridge course of hundred hours for college entrants, and a test to evaluate the attainment of those skills. Subrahmanyam (1974) tried to sort out the grammatical essentials required for Telugu students with a view to improving their written expression. Two studies dealt with different linguistic aspects of Marathi language. Dongre (1968) investigated into the functions of some Marathi auxiliary verbs, while Borude (1975) tried to measure association value of nonsense syllables and meaningful words in Marathi. Bombay Municipal Corporation (1970) sought to improve and develop spoken and written language of children and establish in them firm habits of language communication. In a psycholinguistic study Barr (1974) analysed the auditory perceptual disorders in children with reference to language learning. He found that syntactical complexity rather than auditory memory *per se* was the critical factor in correct sentence repetition. In a multilingual country like India bilingualism is one of the common features in the matter of language learning. Misra et al. (1974) studied the bilinguals' Hindi. They found that non-Hindi speakers carried over grammatical features as well as modes of literary expression



from their mother tongue into Hindi, some of which were in the process of assimilation. Chickermane (1967) on the other hand, studied the impact of bilingualism on the progress of children in primary schools in rural areas. Of the three situations, namely, home, environment and school, environmental influence was found to be the deciding factor in the language development of the children.

### III. Vocabulary studies

Vocabulary is an initial step in learning a language. Research on vocabulary is therefore of fundamental importance with regard to curriculum and instruction. Studies on vocabulary comprised a large section of the total number of studies under review. Basic vocabulary of children was studied in Hindi by Rukmani (1960), in Kannada by Chandrasekhariah (1964), and in Marathi by Tamhane (1965). Functional vocabulary of pre-school age children was studied by Arunajatai and Srinivasachari (1968). Basic Hindi vocabulary in Haryana was studied in case of children of class IV by Sharma (1972) and class VI by Shanker (1971). Basic Punjabi vocabulary was studied in case of students aging ten plus by Soch (1974). Basic Gujarati vocabulary was studied in case of children of eleven plus by Vakil (1955), of twelve plus by Raval (1959), and of thirteen plus by Lakdawala (1960). Pasricha and Das (1959) studied the written vocabulary of Delhi children of class VI. Active vocabulary was surveyed by Sinha (1975) in case of Mundari children (Bihar), and by Pai and Jeyapaul (1974) in case of Tripuri children (West Bengal). Common vocabulary between Hindi and thirteen other regional languages was compiled by CIIL (1972). In another study CIIL (1971) compiled recall vocabulary of thirteen Indian languages. Recognition vocabulary was studied in case of PUC students by Bernard (1966), and third year degree students by Chadda (1971). Keskar (1972) arrived at a thirtyfive thousand word vocabulary for teaching of English in Indian schools.

### IV. Studies on Reading

Reading is one of the essential skills of learning. Achievement of the learners in school or college is largely determined by their skill and interest in reading. That is why a group of studies centred round different aspects of reading skill. Narayanaswamy (1969) investigated into reading comprehension at college level. It was found possible to improve reading efficiency of school leavers through reading alone irrespective of proficiency in other language skills. Ansuya (1970) found that reading efficiency, speed

and comprehension were related to student performance. Rahman (1959) sought to locate means of encouraging reading for pleasure among school children. In a similar study Badami and Badami (1970) studied reading interest of college students. Nature and extent of various types of reading among students were surveyed in order to determine the need for guidance in selection of right type of reading materials for students. Deshpande (1973) attempted improvement of teaching to beginners through improvement in the preparation of reading materials, and in the process of evaluating reading programme. More analytically, the components of reading skill were taken up in a few studies. Ahuja and Ahuja (1974) assessed speed and comprehension in silent and oral reading of Mysore school children of twelve plus. Reading readiness of pre-school children was studied by Krishnamurti (1971) by developing reading readiness tests and other materials. Bhagoliwal (1973) tried to find out whether type size, line width and interlinear spacing had any direct effect on readability of Hindi book print.

### V. Teaching of Languages

#### (a) English :

English language still occupies a somewhat prominent place in Indian life and as such in our school curriculum. Research on English as a component of curriculum has therefore ample relevance. A group of studies have focussed attention on different aspects of teaching and learning of English language. Rajagopalan (1972) made a critical study of the English curriculum at primary and secondary stages in Tamilnadu in order to identify inadequacies in respect of objectives of teaching the language, existing syllabus, textbooks used, audio-visual aids available, methods of instruction followed, organisation of English curriculum, administrative barriers to implement it, and the evaluation procedures utilised. Tiwari (1971) studied the effect of making English optional at the high school and intermediate stages and also tried to determine the place of English in the existing curriculum. Looking to the needs of the time, he found that position of English in the curriculum should be kept as it was. Rangachar and Kulkarni (1967) examined the prevailing facilities for teaching of English. They found that teaching of English as knowledge subject, ignorance of objectives and proper methods of teaching the subject, lack of school libraries and teaching aids were some of the major drawbacks in this respect. A few other studies centred round specific aspects of teaching and learning of English. Ghanchi (1972) identified and described similarities



and contrasts between the grammatical structures of English and Gujarati at different levels. Nagalakshmi (1962) constructed simple oral comprehension tests. Dave and Saha (1968) studied common errors in English at the higher secondary level suggesting remedial treatment. Nair (1966) tried to identify common language difficulties in English of secondary school students with suggestions for preventive measures. Sinha (1967) located areas of English language which needed immediate attention for remedial work at the PUC/first year degree stage in Hindi speaking areas. Theodore (1957) attempted an objective assessment of appreciation of English poetry by intermediate and pre-university students. Shastri (1972) assessed teaching of English as a second language and detected areas of students' weaknesses in their knowledge of certain structures and vocabulary. Singh and Srivastava (1960) found out common errors in written English and tried to develop effective remedial and preventive techniques for spelling mistakes committed by pupils. Mishra (1969) included English also in his study of the problems and difficulties of Hindi and Sanskrit language teaching.

#### (b) Other Languages :

Language teaching as a problem has always attracted attention of researchers. Many of the aspects of teaching Indian languages in general have already been covered in the sections dealing with linguistic and vocabulary studies. Here, only a few studies are being referred which have rather direct bearing on teaching of Indian languages other than English. Subramaniam (1975) developed tests and teaching materials and applied cognate method to teach learners in the courses for Malayalam, Tamil, Kannada, and Telugu. Mishra (1969) identified problems and difficulties of Hindi and Sanskrit language teaching at secondary stage. In general, the processes and techniques of language teaching were found to be in the age-old traditional rut although the teachers were found to be conscious of glaring inadequacies in the practices followed. Verma (1971) attempted to study the place of Hindi in the school curriculum and define an outline of literature for children and adolescents. It was pointed out that the teaching of Hindi in lower classes should stress on hearing, speaking, reading, and writing of the language. Sawant (1970) studied composition teaching in Marathi in its different aspects.

#### VI. Mathematics and Science

Curriculum development considered in its widest sense has been recognised as the main generating force not only for quality in education but also for

fostering the ability to assimilate changes, especially those due to the rapid scientific and technological evolution now in progress. With the advancement of science and technology, new content and techniques of instruction are being increasingly incorporated into the two related subject fields of science and mathematics. In our country also, schools are gradually going to introduce new mathematics, and science course is being entirely revitalised. But these facts are not amply reflected in the studies under review in this section. Only recently Wanchoo and Sharma (1974) surveyed the researches conducted in science and mathematics education in the country in order to locate gaps and evolve programmes for development of research in these two subjects. They found that research in the area of concept development was practically negligible. They also attempted to coordinate researches done in the NCERT, universities and other agencies, as also to disseminate the research findings to practitioners and curriculum development agencies. Three other studies surveyed school curriculum of mathematics in different parts of the country. Dave and Saxena (1965) made a thorough survey of the various aspects of mathematics teaching in different states with a view to developing a new curriculum in the subject by adopting suitable techniques of teaching and learning. Pillai (1970) pinpointed the various defects in the area of mathematics teaching in schools. Backdated and unsuitable textbooks, lack of reference books in the library, teachers not well up in modern trends and modern books on mathematics, burdensome syllabus, and uninteresting methods of instruction were some of the major shortcomings identified. In a similar study Samant (1944) found that poor teaching methods caused the students dislike the subject. Rearranging the topics with definite aims, use of clear and simple language in writing examples in the textbooks, use of proper teaching aids and finally scientific evaluation, were some of the suggestions for improvement. It may be worthwhile to refer back here that Wanchoo and Sharma (1974) also found that research work done in the area of evaluation was mostly confined to test construction. It was Joshi (1970) who focussed attention to concept development. He objectively studied the development of algebraic concept in pupils at junior secondary stage. Gupta (1972) attempted to develop a standardised tool to diagnose weak areas in mathematics, and basic arithmetic skills.

Science claimed significantly fewer studies. These studies concerned themselves mainly with the trend, course of study and teaching of science. Veerappa (1958) examined the trends in science education from

primary through the degree course level. He found that due to lack of proper laboratories, well equipped science teachers, and effective teaching methods, science education in India was not on a proper footing. Patole (1967) explored the existing weakness of teaching science in rural primary schools and attempted to devise methods for improvement in the existing situation. He found that activity-based method of teaching the subject was superior to traditional one. Kelkar (1950) offered a tentative course of study in general science for the secondary schools. Such a course in general science comprised ten units each of which represented some major problems of living, a wide area of experience or an important aspect of environment.

#### VII. Social Studies

No doubt the facts of history and geography have their place in social studies, still social studies is not merely a combination of these two subjects as is sometimes misconceived. Rather, social studies is growing as a new discipline of human relations. It is likely to furnish substantial background for understanding the basic nature of society and to develop the social skills and sensitivity needed by our young learners who are the prospective citizens and leaders of tomorrow. This new aspect of the subject has not yet been paid adequate attention in the field of research. Srivastava (1969) focussed attention on this aspect of social studies as a subject. A few studies have centred round the curriculum and teaching methods of social studies. Pires and Katyal (1957) tried to develop a social studies curriculum suitable for Junior Basic classes on the basis of items selected from daily experience of the pupils and important current events. Narayanaswami (1960) made an inquiry into teaching social studies in schools in the context of introducing it as a single subject instead of as separate disciplines like geography, history, etc. Inadequacy of books and other teaching materials, lack of social studies laboratory and well equipped teacher, lack of use of audio-visual aids, and inadequate evaluation measures were some of the drawbacks located. Khushdil (1960) compared the integrated and the traditional method of approach in teaching social studies. He found that in respect of assimilation and acquisition of knowledge the former was more effective than the latter.

Two studies are related to teaching and learning of geography alone. In the study of GCPI (1963) areas of difficulty in the field of geographical concepts were identified. As a remedial measure, emphasis on practical part of teaching the subject was suggested. D'Souza (1971) experimentally compared the teaching

of geography by 'systematic' and 'regional' methods. Regional method was found to be superior, the variable of school being statistically not significant.

The only study on history by Gupta (1953) was related to present apathy towards teaching and learning history in our schools. A rigid syllabus, traditional nature of questions, disproportionate importance given to examination over teaching-learning process, uninteresting and ineffective way of teaching and lack of good textbooks were some of the major factors responsible for the present day apathy towards history.

#### B. METHODS

Curriculum and methods are intimately interlinked. 'Even the best curriculum and the most perfect syllabus remain dead unless quickened into life by right methods of teaching'. If curriculum is the totality of all experiences that the school arranges for the learner then methods are the suitable ways of bringing the learner to relieve these experiences. A curricular programme can be brought into operation only through appropriate methods of teaching. Ultimately, a method is a body of pedagogical principles and procedures. In the procedural part when the nonhuman media are included, scope of the instructional devices or methods is immensely enhanced. In a country like India where the problem is to educate teeming millions, methods suited to large classes are also to be arrived at by research. Gradually by the impact of educational technology our traditional method of teaching are going to be changed. More dynamic methods of teaching are going to be evolved day by day. Using film strips or at least a tape recorder may increase the effectivity of a method many times more. This is one aspect of development concerning research on methods. Another new development is that more and more interactional approaches are incorporated into teaching methods to make them more dynamic and effective. Our growing awareness of group dynamics and group behaviour is at the root of this development. Teacher is being looked upon as a group leader. Only two developments in the area of researches on teaching methods are indicated here. Many other significant developments in this respect have been reported in the chapter dealing with teaching and teacher behaviour.

In the light of what has been indicated above, a number of studies dealing with methods of teaching are reviewed in this section. These studies relate to methods of teaching in general, as well as teaching methods as applied to a particular subject. Some of them have already been reported while covering a particular subject area. Many of these studies have

only tried to identify inadequacies in the traditional method of teaching, some of them have finished their task after pin-pointing the needed remedial measure, and only a few have ventured to experiment with a method. Research wing of Bombay Municipal Corporation made two experiments (1957 and 1969). In one it studied the effect of child centred teaching practice and correlated play activities on the quality of attainment, attendance, and discipline in standard I, while in the other it attempted to find out an appropriate method of dealing effectively with failures and underachievers. D'Souza (1971) compared 'systematic' and 'regional' methods of teaching geography. Experimental conditions due to regional method resulted into higher achievement in terms of scores on objective test. In GCPI (1963) study areas of difficulty in the field of geographical concepts were located with suggestion for remedial measures. Gupta (1972) developed a standardised tool whereby teachers and research workers would be able to diagnose the weak areas in mathematics. Khushdil (1960) found that in respect of assimilation and acquisition of knowledge, integrated approach to teaching of social studies was superior to traditional methods of teaching the subject. Direct method and bilingual method were compared by Murthy (1968) in teaching English, and by Nagarajan (1970) in teaching English to Hindi speaking pupils. In both the studies bilingual method came out superior. With regard to teaching of English, Shukla (1968) tested the effectivity of translation method, while Sinha (1967) identified areas of remedial work. Translation method was found to be very much restricted in its applicability. Pillai (1970) and Samant (1944) surveyed various aspects of teaching mathematics and found many inadequacies in organising mathematics teaching. Patankar (1964) developed textbooks and workbooks on the basis of pedagogic principles to teach Marathi as a regional language to non-Marathi speaking pupils. While giving lessons with the newly developed textbooks and workbooks teachers used teaching aids like wall charts, flash cards, etc. In a study of teaching of science in rural primary schools, Patole (1967) explored the existing weaknesses and then tried out activity based method which was found superior to traditional one. Mitra (1974) evolved a method of teaching English and validated it through classroom experimentation.

Teaching is in fact communication. And no doubt communication process becomes more intimate and effective with the help of different audio-visual aids. George (1966) tried to find out if teaching of English were more effective with audio-visual aids.

Indications were positive. Sonar (1975) used filmstrips in teaching of science. Teaching method became more effective. Two studies were on educational television (ETV). Roy (1974) studied the cognitive effects of ETV programmes, while Shah (1973) surveyed the scope, utility and limitations of ETV in India. ETV seems to have vast potentiality for enriching teaching techniques if the programmes are properly planned.

Teaching situation in small groups was studied by Mehrotra (1972). After a survey he found that four nondirective methods were in use in the various educational institutions of the country. These four methods were T-group, team teaching, group discussions, and working in groups. It was also found that more and more institutions were organising their instructional programme in smaller groups to supplement the classroom work.

### C. TEXTBOOKS

As curriculum and methods of teaching are in the process of development and change so is the textbook. Textbooks are selected or revised in accordance with the instructional objectives and requirement. Again, selection or revision of textbooks cannot be a sporadic or haphazard process. This has to be done on the basis of systematic evaluation and research. Very few researches have been conducted so far in this country in the area of textbook preparation and production. Quite expectedly NCERT took the lead in this direction. A crash programme to evaluate textbooks in all the languages in the country, especially from the viewpoint of finding out anything that went against the cherished goal of national integration, was undertaken by the NCERT. The NCERT also undertook studies to develop evaluative criteria for assessing textbooks. A study on textbooks under review was done by the Department of Textbooks, NCERT (1970-72). It included nine studies which developed the basic principles and procedures in preparation and evaluation of textbooks separately in mother tongue, second language, English, history, geography, social studies, general science, physics and biology. In view of the defects of textbook production by private publishers and malpractices in the textbook trade, all states have nationalised the preparation, production and distribution of school textbooks. Pattabhiram (1973) attempted to evaluate the nationalised textbooks in social studies prescribed for schools of Andhra. It was found that nationalised textbooks were better in quality as compared to old textbooks, but there was enough room for further qualitative improvement. Rastogi and others (1975), in one study, developed principles for preparation of



textbooks of mother tongue as also the tools and techniques for evaluating them. In another study Rastogi and others (1975) made a comparative study of textbooks of mother tongue in Bengali, Gujarati, Hindi, Telugu and Urdu. Gagneja (1974) studied the treatment of six leading countries in the world in the textbooks of social studies, geography and history. Compared with other countries USA got the maximum attention.

#### AN APPRAISAL

A closer analysis of the studies under review reflects certain general features of researches in the area of curriculum, methods and textbooks. These are indicated in this section broadly in terms of nature and growth of research in the area, methodological issues, organisational and administrative set-up necessary for boosting up curriculum research, and finally research priorities.

This is a plain fact that in most of the states, the current curriculum is to be thoroughly upgraded and improved. And, to do this, more and more significant learning experiences are to be included in it, a good deal of useless matter has to be weeded out, and more dynamic and stimulating methods have to be developed for presenting essential knowledge. With the implementation of 10 + 2 scheme a nationally relevant curriculum for Indian schools has to be evolved. Curriculum researchers have to gear all the efforts to prove equal to the task. When we look into the studies under review from this angle of vision, quantity and quality of researches in the area for the last three decades do not seem to be very much encouraging. Very few of these studies delved deep into the problems of general curriculum development. Most of them touched the surface problems, and that too, covering the middle and secondary school stages. Studies regarding primary school stage were conspicuously rare. In respect of components of the curriculum, there was a definite lack of attention on knowledge subjects such as mathematics, science, history, geography, social studies, etc. The studies on teaching methods hardly made any significant impact. Most of them compared some sort of practical biased approach to instruction with the traditional 'chalk and talk' method and branded the former as progressive or effective without caring to go a bit deep into the fact as to why, in what way, or how it was so. Real psychology or pedagogy of 'methods' remained untouched as its core. Studies on vocabulary and linguistic studies when clubbed together claim nearly thirty percent of the total studies. Again, if these two categories are clubbed with studies on English and other languages, then studies on 'languages in gene-

ral' claim 41.6 percent of the total studies. This clearly indicates a lack of balance in curriculum research which may be due to unplanned and uncoordinated research efforts in the country.

Attention may be drawn to the development of researches in this area for the last two decades. About 68.5 percent of the studies have been completed during the current decade (66 to 76). During the first half of this decade (67-71) nearly twentyeight percent, and in the last half (72-76) fortyone percent of the studies have been completed. The corresponding indications during the last two decades are seventyfour percent, fortyone percent, and 33.3 percent, respectively. It may therefore be said that although curriculum research has started with the dawn of independence, only in the last ten years the major bulk of the researches has been done. Most probably this is the impact of the strong plea for research in this area as made by the Education Commission (1964-66). The beginning of institutional researches nearly coincides with the establishment of the NCERT. The role of the NCERT might have been instrumental in the growth of institutional researches on curriculum. Bombay University has produced the largest number of doctoral studies, and NCERT/NIE/CIE as one institution has completed the largest number of institutional studies. The contribution of CIEFL and CIIL in vocabulary and linguistic studies is worth noting.

Another significant fact about the studies under review is that quite a large number of them are not grounded on sound methodology. The limited scope of their sampling restricts to a great extent the validity of their generalisations. In fact, in research work the importance of methodology can hardly be overestimated. It is the proper methodology that gives weight to the research evidence. It seems that educational research and for that matter research in curriculum in this country is gradually going to adopt scientific methodology. The studies under review show that experimental designs with the application of rigorous statistical analysis, although not a rarity, are conspicuously less in number. The tools and techniques of research used vary from simple observation and study of records to administration of sophisticated tests. Some of the more important tools used in these investigations are the the Raven's Progressive Matrices, the Mathematical Achievement Survey Test (NCERT), the Ballard's Columbian Mental Test, the Kamat's Intelligence Test, the Silent Reading Test, the Edward Fry Test, the Algebraic Concept Test, The Wepman Test of Auditory Discrimination, the Rosner Auditory Analysis Test, the Rosewell-Chall

Auditory Blending Test and the Helen Bernard's Vocabulary Test. Quite a large number of studies are survey type. Questionnaire is one of the most used techniques of data collection. As many as twenty-one studies are more or less experimental. Only four studies are based on sophisticated experimental designs, while two use factorial designs, two others are longitudinal studies. Quite a few studies have tried to arrive at some generalisation simply by a critical discussion of the problem. All sorts of sampling techniques, viz., random, stratified, incidental and purposive, have been utilised. The size of the sample has varied from even less than a hundred to a few thousands. In majority of cases the samples have been selected from urban areas. In as many as seventeen cases statewide studies have been made, while in eight cases all India studies (in a very limited fashion) have been conducted. By themselves, the studies on vocabulary, languages, and linguistics comprise a separate category in respect of methodology. These studies have adopted different linguistic methods suited to the purpose. However, majority of the studies are descriptive and correlational.

Some of the features of research on curriculum have been brought into sharper relief from the foregoing discussion. The educational experts and curriculum planners have to pay increasing attention to these features in coming years. For the development of a scientific curriculum, modern experts are focusing attention on such aspects of curriculum instruction, and instructional material, as needs, child growth and development, classroom interaction, individual differences, communication process in instruction, social structure, etc. An example will make the point clear. As we all know, our country is wedded to the idea of establishing a socialistic pattern of society. Now, to curriculum researchers the problem is how to break up this broad concept into suitable behaviour patterns or realisable learning experiences that could be the objectives at different stages of curricular development. In a similar way every school subject awaits a break up in terms of its peculiar concepts and methods, and then their grading according to the age and attainments of the pupils. Changes needed in curriculum at different stages, resistance to curricular change, and the problem of implementation of the renovated curriculum are some of the broad areas which may be taken up for investigation on a priority basis. If research in the area of curriculum, methods and textbooks is to point out the lines that future developments in education should take, specification of areas of research is imperative. In the pers-

pective of developing the ten-year school curriculum, it is urgently needed that fundamental research should be emphasised and executed to provide empirical foundations to curricular changes. Priorities may be given to the following research areas: (i) General objectives of education at a particular stage or class; (ii) Components of curriculum in different subject areas; (iii) Scheme of studies and time-allocation; (iv) Specific problems in relation to particular subject field; (v) Instructional aids; (vi) Teaching of mathematics and science; (vi) Experimental studies on methods of teaching; (vii) Content analysis of textbooks at different levels; (viii) Production of textbooks; (ix) Social background of learners; (x) Teacher involvement in curricular change; (xi) Vocationalisation; and (xii) Work experience.

The research priorities listed above lead one to think of the organisational and administrative structure that will be necessary in realising these targets. There are quite a number of central and state agencies in this respect. The NCERT is the main body to pioneer research in this area. During late sixties, State Boards of School Textbooks came into existence. Each board accepted curriculum and textbook research as one of its objectives. Then there are university departments, and specialised institutes of research like CIIL, CIEFL, CASE, etc. It is clear that organisational set up for curriculum and textbook research is not absent. What is needed is coordinated efforts on the part of the universities and other organisations so that efforts of one gets support from the others, overlap and duplication of studies may be avoided thereby. Ultimately total research effort in the country through different organisations becomes more meaningful and effective. Also, the teachers as practitioners in curriculum implementation have an indispensable role to play. Through action research they can try to find answers to problems arising in classroom situation while implementing the curriculum and can provide feedback to the curriculum framers. It appears that a phased programme of curriculum research can help curriculum framers and educators to take empirical decisions on curriculum content, teaching methods and instructional material. It may be ardently hoped that planned research on co-operative line will start in the area of curriculum construction in our country so that scholars in subject areas, pedagogic experts with insight into educational implications, teachers with actual classroom experience, and research workers, can collectively engage in developing a rational and scientific curriculum. Only then the destiny of India will be shaped in her classrooms.

## ABSTRACTS : 383-453

- \*383. AGGARWAL, Y. P., *Survey of Audio-visual Materials at the Secondary Training Colleges, NCERT, New Delhi, 1974.*

The survey was undertaken to find out the development of audio-visual education at the colleges. A questionnaire was developed and mailed to all the secondary training colleges in the country.

The summary of the findings was as follows : (i) Availability of audio-visual equipment — The training colleges in general were poorly equipped. Only 72.5 percent of the responding training colleges possessed 16 mm film projectors, 47.3 percent filmstrip projectors, 50 percent epidiascopes and only 3.6 percent overhead projectors. (ii) Use of audio-visual equipment — The position regarding the use of audio-visual equipment was found to be poor. They were used very casually, mainly for the purpose of demonstration, etc. (iii) Availability and use of audio-visual aids — Important audio-visual aids were not available with most of the colleges. Only 45.4 percent of the colleges had films, 59.1 percent filmstrips, 40.9 percent slides and 52.7 percent models. Even the basic aids like chalk boards were not available with 18.2 percent of the colleges. The audio-visual aids were not adequately stored and were not easily available for reference. (iv) Physical facilities — Physical facilities were non-existent at most of the colleges. Only 34.5 percent of the colleges had separate audio-visual rooms, 4.8 percent workshops, 10.9 percent graphic rooms, 9.1 percent photo labs, and 40 percent auditorium. (v) Availability of audio-visual personnel — The position regarding the availability of audio-visual personnel was very poor. Only 26.3 percent of the colleges had the services of trained part-time or full-time projectionists. In 33.6 percent of the colleges, there were lecturers — part-time or full-time, trained or untrained — who independently looked after audio-visual education.

384. AHUJA, P. and AHUJA, G. C., *Assessment of Silent Versus Oral Reading Speed and Comprehension of School Children, CIIL, Mysore, 1974.*

The study aimed at assessing and finding out relationships between silent reading speed, silent reading comprehension, oral reading speed, and oral reading comprehension.

Two reading comprehension tests in English, one for silent reading and the other for oral reading, of comparable difficulty were constructed. Each test

contained 568 words and fifteen comprehension questions. Item validity, item difficulty and test reliability for these tests were computed which were found to be high. A sample of fifty boys and fifty girls in the age group of 12+ was drawn from standard VIII of two English medium schools of Mysore. The two tests developed were administered individually to the pupils. The speed scores in terms of words per minute read silently and orally were calculated separately for each pupil. Comprehension scores were computed by giving one point credit for each correctly marked answer to the comprehension questions. Percentage comprehension scores were calculated separately for silent and oral reading. Reading indices were computed both for silent and oral reading for each pupil by multiplying speed score and the corresponding comprehension score.

The major findings of the study were : (i) the means of the silent reading speed, oral reading speed, silent reading comprehension, oral reading comprehension, silent reading index and oral reading were respectively equal to 178.90 words per minute, 147.30 words per minute, 71.70, 73.80, 135.10 and 110.10 and corresponding standard deviations were 56.82, 35.88, 19.94, 15.17, 67.52 and 39.92; (ii) the coefficient of correlation between silent and oral reading speed was 0.72, silent and oral reading comprehension was 0.32, silent reading speed and comprehension was 0.40, oral reading speed and comprehension was 0.25 and between silent and oral reading indices was 0.69, all being significant at .01 level.

385. BADAMI, H. D. and BADAMI, C. H., *A Study of Reading Interests among the College Students, University school of Psychology, Education and Philosophy., Guj. U., 1970. (UGC financed)*

The main objectives of the project were : (i) to study the nature and extent of various types of readings among the students; (ii) to determine the need for guidance in selection of right type of reading materials for students; and (iii) to make the community and various educational agencies aware of the need and importance of voluntary readings among the students.

The sample comprised 327 male and 131 female students from twelve arts, science and commerce colleges located in various sections of the two zones : (i) city walled area and (ii) Ellisbridge and outskirts area of the city of Ahmedabad. Questionnaire was



the main tool employed for data collection. The preliminary form of the questionnaire was discussed with a small group of male and female students to avoid ambiguities and to ascertain clarity and comprehensiveness. The final form was administered to a group of approximately 550 male and female students of preuniversity classes. The frequency of responses to each item was calculated and was reduced to percentage. t test and chi-square were employed to analyse the data.

The important findings of the study were the following: (i) about sixty percent of the students were interested in reading various types of books; more than sixty percent of the students were found to have interest in novels and short stories while few had indicated their interest in reading poems, essays, travel and scientific materials; criticisms, letter, arts and science books were disliked by the groups; significant sex differences were observed in amount of interest expressed for reading books and dislike for several types of books; (ii) main sections preferred from the newspapers were news — foreign and national, and also sports while sections like editorial and art and music were disliked; (iii) about fifty percent of the subjects were found to have interest in reading magazines; sections of stories, jokes and comics were preferred; sections on sports, pictures and cartoons and poetry sections were found to be less appealing; significantly more males were found to have preferred the sports section while females preferred the sections of puzzles and problems.

\*386. *BAHUGUNA, S. D., Evaluation of Commerce Education upto Higher Secondary Level in Rajasthan, S. M. B. Government College, Nathdwara, 1973. (NCERT financed)*

The present study was limited to the evaluation of commerce syllabus upto higher secondary level in Rajasthan. This syllabus was compared with the syllabus in other parts of the country also.

The study was based on a field survey, and educationists, teachers of various subjects, industrialists, businessmen and old commerce students were consulted. Scientific tools and concepts were used to locate with mathematical precision the areas of confusion and gaps.

The study arrived at the following conclusions. The teaching of commerce in the country was not done on a scientific basis. The standards of commerce education at the secondary education level also were also not very high. The teaching of commerce education, therefore, was facing several types of problems, including lack of relationships between the

philosophy of commerce education and the requirements of modern society. And, also, the commerce syllabus was not related to the employment market.

The study has suggested some action-oriented programmes.

387. *BHAGOLIWAL, B. S., An Experimental Investigation into Typographic Dimensions Affecting Readability of Hindi Book Print, Ph.D. Edu., All. U., 1973.*

The objectives of the study were: (i) to find out, whether the different typographical dimensions, i.e., typesize, linewidth and interlinear spacing, had any direct effect on readability of Hindi print; (ii) to find out the optimum specifications for the various combinations of these variables; (iii) to investigate whether the typographical dimensions of Hindi print affected the readability of Hindi books on the same lines as in English, or differently; (iv) to discover whether speed of reading increased with the increase in age and class; and (v) to find out whether there was variation in readability of the children of the same class due to variation in schooling.

The sample for the study consisted of 621 students of the age group of 10+ to 14+ of classes VI, VII and VIII from the recognised boys' schools of Allahabad town. For the purpose of this study 3 x 3 x 3 factorial design was selected. As there were twentyseven variable combinations under study, class section was taken as a unit and about twentyseven students were assigned to each of the experimental passages printed in different variable combinations. All the subjects were tested for their vision level on the 'Snellen Chart' for a 20/20 or more of visual activity. Each subject was then asked to read out a control passage and an experimental passage, and time taken by the subject to read the passages was noted by means of a stop watch. After completion of reading, the subjects were asked questions based on the passages read by them. The observations of students with speech defects, vision defects or those having temporary illness and those who showed lack of comprehension were excluded. External factors like light, sitting arrangements, and distance between eyes and the book were controlled by means of using a reading stand and by following certain specifications.

The study revealed that (i) there was no direct effect of readability of Hindi book print from any of the three dimensions under study when taken up singly; (ii) only the interaction of two factors—type size and line width gave significant differences in reading speed; (iii) there was difference between typographic

arrangements found satisfactory for English and Hindi; (iv) there was no significant increase in the speed of reading with increase in age, but there was steady but insignificant improvement in reading speed from grades six to eight; (v) the children studying in different schools showed wide variations in readability although they might be of the same grade; (vi) the only combination found satisfactory in Hindi as well as English book print was twelve point type size in four inches line width set solid or single lead, or double lead; and (vii) most of printing arrangements of nationalised textbooks did not conform to the typographical specification found satisfactory in this study.

\*388. BHAL, J. D., *Study of the Vocabulary in Gujarati of Pupils of Std. VI in Saurashtra*, Ph.D. Edu., Sau. U., 1975.

The objectives of the study were : (i) to find out the expected vocabulary, the written vocabulary, the oral vocabulary and the recognition vocabulary of pupils of standard VI in Saurashtra; (ii) to make certain intra-investigation and inter-investigation comparisons; and (iii) to study sex differences and area differences in the vocabulary of standard VI pupils.

Expected vocabulary was studied through the analysis of textbooks written in Gujarati for standard VI, pertaining to Gujarati, general science, mathematics, history and geography. The expected vocabulary turned out to be of 1,55,672 running words and 7,970 different words. The written vocabulary was ascertained through the analysis of 2,000 answerbooks, pertaining to the March 1973 annual examination covering the five subjects mentioned above. Both sexes (boys and girls) and rural-urban areas were equally represented in the sample of 2,000 answerbooks, which were drawn from the six geographical districts of Saurashtra. The written vocabulary comprised 1,36,419 running words and 5,288 different words. To estimate the oral vocabulary the researcher recorded on tapes the oral speeches of 540 pupils, with equal representation of both the sexes and equal representation of rural-urban areas as well. The oral vocabulary turned out to be of 14,208 running words and 1,641 different words. Several steps, taken serially, were involved in the study of recognition vocabulary. As mentioned earlier, there were 7,970 different words in the expected vocabulary, 5,288 different words in the written vocabulary and 1,641 different words in the oral vocabulary. The following categories were located and were assumed to be in the recognition vocabulary : (i) words found common in expected, written, and oral vocabulary (1,075 words), (ii) words found common in expected and

written vocabulary (2,712 words), (iii) words found common in expected and oral vocabulary (159 words), (iv) words found in expected vocabulary either having a frequency of twenty or more, or having a frequency of fifteen to nineteen and a range of three or more (91 words), (v) words found common in expected vocabulary and Parekh's Basic Vocabulary of standard I, II and III (296 words), (vi) words found common in expected vocabulary and first one thousand words of Vakil's Basic Vocabulary of standard V (45 words), and (vii) words found common in expected vocabulary and recognised by the pupils of standard VI in oral testing (2,645 words). Thus, out of the expected vocabulary of 7,970 different words, 7,023 words were assumed to be in the recognition vocabulary. Forty students each of standards VII and VIII, selected at random, were asked orally to give the meaning of the remaining 947 words, without any context. Out of these, only 432 words could be explained by these students. It now remained to be seen whether these 432 words were in the recognition vocabulary of standard VI pupils. Three vocabulary tests constructed by the researcher, each containing 144 words, were administered to 1,221 students of standard VI selected at random. In all, 148 words were recognised by fifty percent or more pupils. Additional 1,744 words, which were not in the expected vocabulary, were found to be in the recognition vocabulary, the details being as under : (i) words found common in written and oral vocabulary (164 words), (ii) words found only in written vocabulary (1,337 words), and (iii) words found only in oral vocabulary (243 words.) Thus, the total recognition vocabulary turned out to be of 8,915 words. In order to find the sex differences and area differences in the recognition vocabulary, a special vocabulary test consisting of 100 multiple-choice items was constructed and administered to 2,020 pupils covering the six geographical districts of Saurashtra and having roughly an equal representation of both sexes and rural-urban areas.

The study also made the following findings : (i) Boys were found to be superior to girls in written vocabulary and oral vocabulary. (ii) With reference to the written vocabulary, the urban pupils used more running words and more different words than the pupils of rural areas, but the rural pupils used more new words than the urban pupils. (iii) So far as oral vocabulary was concerned, the urban pupils used more running words but the rural pupils used more different words. (v) Girls performed better than the boys and the rural children performed better than the urban children on the vocabulary test (both results being significant at 0.01 level).

- \*389. **BHARATENDU PRAKASH**, *Introduction of the Discovery-Oriented Approach in Science Teaching at the School Level*, Vigyan Shiksha Kendra, Banda, 1976. (NCERT financed)

On the basis of eight monthly meetings and a teachers' orientation course, a workbook for science teaching for class VI was developed. It was tried out on a large number of students and teachers which provided a good deal of feedback for its revision and finalisation. The final version of the workbook comprises curriculum, practical work and experimentation, involving the use of local resources. The contents are related to the common needs of the village community.

The curriculum thus devised aimed at improving the process of learning science and inculcating positive scientific attitude both among the students and the teachers. The philosophy of the discovery approach formed the very basis of the development and practice of this new curriculum.

- \*390. **CHATTERJEE, S.**, *Teaching Bengali as a Second Language in Anglo-Indian Schools in West Bengal*, Dept. of Comparative Philology and Linguistics, Cal. U., 1976. (NCERT financed)

The task of linguistic analysis was undertaken because no standard work on these lines was available in Bengali. This project was undertaken on the basis of samples collected both of written and spoken Bengali for the purpose of selecting structural patterns for incorporating them in the lesson materials. The actual needs of the learners, from classes II to VI, and the different levels of Bengali — morphology, vocabulary, syntax and phonology, were determined.

Graded materials were prepared. In preparing the graded materials, a compromise had to be made between the principle of ease of learning of the children and the structural approach.

- \*391. **CHATURVEDI, M. G.**, *The Graphemic Analysis of the Devanagari Script as used for Reading and Writing Hindi*, Dept. of Education in Social Sciences and Humanities, NCERT, New Delhi, 1974.

The aims of the study were: (i) to analyse the letters of the Devanagari script in terms of graphs, strokes and number and order of the strokes; and (ii) to find out the phoneme grapheme correspondence and work out the rules of Hindi orthography along with the use of punctuation marks.

The letters of the script were analysed formally

and the allographs were worked out along with their distribution. For the purpose of stroke analysis, the mode of writing of a sample of Hindi teachers from all the Hindi speaking states and union territories was analysed. The phoneme grapheme correspondence was studied and rules of Hindi orthography were worked out.

The study revealed the basic graphic components which made Hindi letters. The stroke analysis of Hindi teachers revealed the number and order of strokes in the formation of Hindi letters. The rules of Hindi orthography and punctuations were established.

- \*392. **CHAUDHARI, I. S.**, *A Critical Evaluation of School Textbook Improvement Programmes in India*, Ph.D. Edu., Punjabi U., 1977.

The objectives of the study were: (i) to assess the nature and extent of improvement in textbooks that the textbook improvement programme has brought about; (ii) to reveal the bottlenecks and hidden malpractices in the way of textbooks improvement; (iii) to assess the efforts of various textbooks agencies in writing, publication, production and revision of textbooks; and (iv) to determine the value of existing textbook improvement programmes with a view to making these programmes more fruitful and productive. The evaluation criteria for testing the textbook improvement programme included worthwhileness, relevancy, adequacy, definiteness, specificity, practicability, consistancy, objectivity and inter-pretiveness.

Both historical method and survey method were used in the study. For the historical method the sources of data were reports of various commissions and committees set up by the central and the state governments, reports of textbook nationalisation agencies in the state, relevant publications on the textbooks produced by NCERT, NBST and private publishers, survey conducted on textbooks in Japan, USA, etc., articles in magazines and research monographs, investigator's personal experience in attending conferences, seminars and workshops, reviews appearing in daily newspapers, magazines, and journals. For the survey part a representative sample of 198 was drawn to cover all important subjects, classes and the states. The sample textbooks included both nationalised and non-nationalised books. For evaluating the textbooks, an evaluation instrument of 100 statements was constructed. The tool was validated against pupil achievement.

It was found that existing tools and techniques of textbook evaluation were based on such principles,



theories, approaches and criteria which were selection oriented and not improvement oriented. Even agencies like CBTR, NCERT and NBST had not contributed much to this effect. Deficiencies were there in the aspects of textbook content, organisation, presentation, language, illustration exercises and other aspects. These deficiencies were reflected in the ratings or scores, but these were accepted as such before the books were prescribed. This only meant that in spite of evaluation, substandard textbooks were in vogue. This was only because tools and techniques of evaluation for selection did not contain inbuilt provisions for improvement before approval. From the survey of textbooks it was found that (i) all nationalised textbooks were written strictly according to prescribed syllabus; (ii) answers in some mathematics textbooks, maps in geography textbooks, and certain facts in science textbooks were erroneous of serious nature; (iii) latest approach in content presentation were perceptible in some books produced by NCERT; (iv) illustrations were the best features in some English textbooks, but mathematics textbooks suffered much due to poor illustrations; (v) syllabus, objectives, and bibliography were usually absent in nationalised textbooks; and (vi) on the whole, books used in English medium public/convent/anglo-Indian schools were rated high, whereas the nationalised books and those produced by reputed publishers were, by and large, rated as of medium quality with respect to content, language, illustrations, exercises, printing, paper, binding and pricing.

\*393. CHAUDHARI, U. S., *An Evaluation of Nationalized Hindi Text books (Classes I through VIII) of Madhya Pradesh, Ph.D. Edu., Indore U., 1976.*

The main objectives of the study were : (i) to analyse the strength and weakness of the nationalized Hindi language textbooks, i.e., Bal Bharathi series; and (ii) to evaluate the textbooks in terms of values, needs, themes and questions with the help of the opinions of the teachers, students and experts.

Thirtythree rural and seven urban middle schools of Indore district were randomly selected. Eight teachers and eight students (representing every class) were selected from every school to fill the questionnaire. Thus 320 teachers and 320 students from forty schools formed the final sample. The evaluation of the textbooks was done by a group of fifty experts. The classification of 711 textbooks were referred to a group of four judges. Two questionnaires, one for the teachers and other for students were designed and their reliabilities were found out. With

the help of these tools evaluation scores of textbooks from both the groups were obtained. Occurrence of values and needs in the textbooks was done through content analysis and was compared with the scale of values obtained with the help of experts. Similarly the 'likings' of the students for the themes, in terms of yes-responses, were compared with the frequencies of themes occurring in the textbooks. To know the cognitive level of questions given at the end of the chapters, they were classified into seven hierarchical categories of Bloom-Sanders' taxonomy. The data were descriptively and statistically analysed.

The main conclusions of the study were : (i) The students had a more favourable opinion of all the eight textbooks than their teachers. (ii) There was fairly good agreement between the socio-cultural values reflected in the textbooks of classes I through IV and the values recommended by the experts for these classes. There was no agreement between the values presented in the textbooks of class V to VIII and the values recommended by the experts for these classes. (iii) There was no correspondence between children's needs presented in the textbooks of classes I through VIII and the needs recommended by the experts for these textbooks. (iv) There was no relationship between the themes presented in the textbooks of classes I through VIII and the themes liked by the students of these classes. (v) The questions given in the exercises of the textbooks were predominantly at low cognitive level — 51.476 percent of questions were of memory type and only 1.969 percent of questions belonged to synthesis category. (vi) The female teachers and female students had more favourable opinion of the textbooks than their counterparts. (vii) There was no rural-urban differences in the opinions of the teachers or the students regarding the textbooks.

394. CHICKERMANE, D. V., *Impact of Bilingualism on the Progress of Children in Primary Schools in Rural Areas, G. K. Institute of Rural Education, Gargoti, 1967. (NCERT financed)*

The objectives of the study were : (i) to find out whether different types of bilingualism affect the progress of unilingual children; (ii) to determine the stage of education at which bilingualism affects the progress of children; and (iii) to suggest remedial measures to overcome deficiencies of children whose progress is affected adversely by bilingualism of a particular type.

The sample was selected from bilingual areas on the border of the two states, Maharashtra and Mysore. A subsidiary area was also taken on the border of Maharashtra and Gujarat. The selected sample con-

sisted of : (i) Bennadi area, where Kannada and Marathi were equally prominent; (ii) Nippani area, where Marathi was the school language and also the local language, and (iii) Halkarni area, where Kannada was the home language and also the local language, while Marathi was the school language for Kannada children. Data were collected using an achievement test and through interviews and discussions with the teachers who handled children in bilingual classes. The test was administered at two levels, lower primary and higher primary. The test was constructed and standardised by the Institute. The difficulty value of items was the Z-score corresponding to the percentage on the normal curve. Tetrachoric correlations between items and the test as a whole were computed and items with low correlation were deleted. Finally, the tests were administered to children in grade IV as well as grade VII.

The major findings of the study were : (i) three situations, namely, the home, the environment, and the school influenced the language development of a bilingual child; (ii) of these three, the environmental influence was the deciding factor and was more powerful than the school or even home influence; (iii) when the language in the environment was identical with that of the home, there was no perceptible effect of bilingualism on retardation of school progress; and (iv) when the environmental language differed from school language, children felt handicapped in acquiring a mastery over the school language.

395. *CIIL, Recall Vocabulary in 13 Indian Languages, Mysore, 1971.*

The study aimed at compiling a recall vocabulary in the active command of the educated native speakers of a language to meet the immediate needs of people engaged in the teaching of Indian languages to adults.

A total of fortyfive semantic categories were given to educated native speakers of Indian languages who were asked to recall from their memory vocabulary items connected with those semantic categories. The categories were compiled so as to include items related to familiar objects and day to day experiences. No dictionary or written record was used for collecting this material. Attempts were made to compare the vocabulary lists of more closely related cognate languages. A numerical grid was prepared to indicate vocabulary items common in the cognate languages.

The recall vocabulary lists were found useful to teachers to build up instructional materials.

396. *CIIL, Hindi - Regional Language Common Vocabulary, for 13 Languages, Mysore, 1972.*

The study aimed at compiling common vocabulary items between Hindi and other regional languages.

The vocabulary items found common between Hindi and regional languages were classified to include same words with same meaning and same words with different meaning, with further classification to include same word, same shape and same meaning and same word, different shape and same meaning. The other classifications were same word with expanded meaning and same word with restricted meaning.

The study resulted in the development of Hindi-Tamil common vocabulary, Hindi-Malayalam common vocabulary, Hindi-Kannada common vocabulary and Hindi-Kashmiri common vocabulary. Work on the development of common vocabulary for Hindi and other regional languages was also complete.

\*397. *DASGUPTA, A. A., and ABAD AHMAD, A Study of the Problems of the Book Trade in India with a Special Reference to Production and Marketing, Faculty of Management Studies, Del. U., 1971. (NCERT financed)*

The main objective of the study was to identify the main problems in production and marketing as faced by the publishers and booksellers in India, particularly those dealing with textbooks and other books of professional and technical nature.

About 50 publishers and booksellers in the country were contacted through the survey and case study method. Among the findings, the following are of significance : (i) One of the major problems pertained to finance. Booksellers and publishers were not given bank loans for financing their business. They suggested that the book industry, including retail book business, should be treated as industry and loans for their business should be available from different banks on a short-term as well as long-term basis. (ii) The other major problem pertained to the shortage of paper. (iii) Most of the booksellers and publishers complained about the difficulties posed by different libraries in the purchase of books. Libraries generally took a long time in getting the books approved for purchase and payment was also invariably delayed. Therefore, most of the booksellers and publishers preferred to sell these books to individuals rather than to libraries. (iv) Some of the booksellers were emphatic about the problem posed by the impact of foreign-aided books. It was also revealed that about twentytwo percent of the booksellers were importing technical, scientific and reference books from abroad,

particularly from U.K., U.S.A., Japan and West Germany. About thirtyfive percent of the publishers were also exporting books to European countries, particularly, books on History and Political Science. However, they felt the lack of facilities for book promotion in foreign countries. (v) The majority of the publishers did not own a printing press. However, none of them raised any major problem about getting their books printed at different presses. (vi) Most of the publishers printed school and university books. None of them claimed speciality in one particular area. The Indian book industry felt the dearth of books in pure sciences. (vii) Most of the publishers followed the practice of paying a percentage of royalty on sales. This percentage ranged between ten and fifteen. About one-third of the publishers preferred to purchase the manuscript outright. (viii) The publishers felt a need of on-the-job training for their own recruits, particularly in the areas of accounts, book-keeping and publishing. (ix) It was estimated that the average production cost of a book was about twenty percent of the price, the average discount to trade was about thirtyfive percent, the royalty about fifteen percent and the overhead charges about twenty percent. This left the publishers with the margin of about ten percent including taxes. (x) The association of booksellers felt a need to evolve a code of conduct for all its members. (xi) A major weakness of the Indian book trade was the absence of a powerful and effective wholesale distribution system.

\*398. *DASGUPTA, T., A Study of Basic Vocabulary (Bengali), Ph.D. Edu., Gau. U., 1978.*

The major objectives of the study were: (i) to construct a glossary of basic vocabulary for classes I, II, III and IV; (ii) to construct a glossary of all words of basic vocabulary of classes I, II, III and IV containing the difficulty value in respect of the students of class IV only to ascertain whether more than one year of exposure has any significant impact on the vocabulary performance of the pupils; (iii) to identify the best, worst and medium scores on the vocabulary test batteries; and (iv) to compare the performance of class IV students of Shillong and that of two districts of West Bengal to ascertain whether the glossary has wider applicability.

Students were drawn from the schools of Greater Shillong, Jalpaiguri district and Coochbihar district. The mode of drawing the sample, though on random basis, differed at different stages of the study. Also, forty parents/guardians and fifteen teachers were involved in obtaining the data for the study. Eight batteries of vocabulary test, one rating scale,

one schedule and one verbal fluency test were prepared and employed for collecting the desired data. For computing the estimated vocabulary for classes I, II, III and IV, four textbooks from each class were chosen and analysed in terms of vocabulary, and different words for each class were tabulated alphabetically in four progressive glossaries.

The major findings were: (i) In all 26.96 percent of the total 1209 words in the four glossaries formed the basic vocabulary of class I, 33.01 percent of class II, 16.04 percent of class III and 23.57 percent of class IV. (ii) The rate of increase of words was quite significant, from class I to II being 29.28 percent and from class III to class IV being 43.22 percent. But there was a rate of decrease of words from class II to class III, that being 50.13 percent. (iii) Out of the total number of 1209 words, 32.01 percent were the words of medium difficulty value, 59.64 percent were with low difficulty value and 8.33 percent words were with high difficulty value. (iv) It was found that the glossaries had applicability beyond the territorial limits of the original sample.

399. *DESHPANDE, V. S., Teaching Reading to Beginners - A Methodological Study, Ph.D. Edu., Poona U., 1973.*

The objectives of the study were to evolve a process for (i) general improvement in school learning; (ii) improvement in the thought process; (iii) improvement in the preparation of vocabulary lists and reading materials; (iv) improvement in the methodology of teaching reading in the beginning; and (v) improvement in the methodology of evaluation of the reading programme. The hypotheses tested were: (i) the present beginning reading programme would be based on the old concept of reading and it would fail to create readers who would read with the expected speed of comprehension; (ii) the new reading programme, based on the modern concept of reading would create good readers who would be able to read with the expected speed of comprehension; and (iii) if the above hypotheses are experimentally tested, the difference between the means of the speed of comprehension of both the groups would be favourable to the new reading programme and would be statistically significant.

The sample consisted of 2,000 pupils who entered the first grade of the primary school. These subjects were selected from fortyeight classes from the city of Poona and adjoining villages. Again, these students were selected on the bases of intelligence, physical maturity, socio-economic status of the parents and educational facilities available. To match the



parallel groups, the principle of normal probability curve was used for the bases of intelligence and physical maturity. The schools were equated with the help of the inspection reports of the previous two years. Each of the two groups, experimental and control, consisted of nearly 1,000 pupils. With a view to comparing the achievements of both the groups in the speed of comprehension and with a view to finding out how people would accept the new reading programme in future, a reading test, questionnaires for the teachers and the headmasters of the experimental group, and experts' opinions were used.

The study revealed that (i) the total performance of the experimental group children on the reading test was better than that of control group children and the difference between the mean scores of both the groups was found to be statistically significant; (ii) the experimental reading programme made no extra demands on the time of teacher and was carried out in normal conditions and the new reading programme was approved and appreciated by the teachers, headmasters and the experts also; and (iii) it was found that the hypotheses were found statistically significant and the reaction of those who implemented and did not implement favoured the experimental reading programme.

\*400. DEWASTHALEE, R. B., *An Investigation into the Present Secondary Education Curricula (Std. V to X) in the Maharashtra State with a view to revision in the Context of Vocationalisation of Education at all levels, Ph.D. Edu., Bom. U., 1978.*

The important objectives of the study were : (i) to investigate the nature, degree and extent of vocationalisation achieved through the present secondary education curricula; (ii) to locate different areas in which vocationalisation can be achieved; and (iii) to frame syllabi of different vocationalised courses in different areas that can be introduced at all levels of secondary education.

Two main methods of the study were : (i) survey of vocationalisation achieved, which was descriptive in nature, and (ii) the construction of new syllabi of vocational courses suitable to secondary school children. The techniques used for data collection were (a) interviews, (b) observation of teaching, and (c) visits to vocational and industrial institutions.

The main conclusions and recommendations of the study were as follows : (i) The academic atmosphere was in favour of vocationalisation. (ii) Vocational education should begin from standard V. (iii) Some vocational courses should be introduced for the dropouts. (v) Vocational courses should not be treated as 'extra'.

(v) A pupil must be given a certificate for successfully completing a vocational course. (vi) In vocational courses emphasis should be on practical aspects. (vii) A comprehensive programme of vocational guidance is essential. (viii) A common vocational school should be set up to meet the needs of various neighbouring schools.

401. GAGNEJA, S. C., *The Treatment of America, England, Russia, Japan, China and Pakistan in Social Studies, History and Geography Textbooks for High/Higher Secondary Schools Published in Hindi since 1947, D.A.V. College of Education, Abohar, 1974. (UGC financed)*

This study aimed at evaluating social studies, history and geography textbooks which were the primary formal sources of information to children, the evaluation being in terms of comprehensive, accurate and balanced treatment of the six countries in such books. The specific objectives of the study were : (i) to determine the percentage space devoted in social studies, history and geography textbooks to the treatment of the six countries; and (ii) to evaluate the treatment for comprehensiveness and accuracy of the six countries.

A list of five broad categories was formulated. Information was gathered from selected Indian social studies, history and geography textbooks for secondary schools published from 1947 to 1972, and a number of authoritative works on the selected countries were also used for collecting materials.

The findings revealed that : (i) in case of each selected country, the treatment was found to be progressively decreasing in geography textbooks over the periods 1947-55, 1956-64, and 1965-72; (ii) compared with the other countries, USA got the maximum attention in all the three periods, UK came second, and the third place went to China in the first and third periods and to Japan in the second period; Russia ranked fifth in the first and third periods and fourth in the middle period and Pakistan ranked sixth in all the periods; (iii) in history textbooks treatment of America increased and of Japan decreased in each subsequent period; treatment of England was more in the first period and less in middle period as compared to the last period treatment, while Russia, China and Pakistan were treated more in the last period and less in the middle period as compared to the treatment in the first period; (iv) the largest amount of the space had been given to Geography in each period for the selected countries except for Russia in the period 1947-55 where economics was treated

slightly more; (v) culture got little attention in aggregate except for the period 1947-55 where minimum space had been given for history; and (vi) China's overall first rank might be due to its geography, size and long historical contacts with India; England ranked second because our history, economy and culture had been influenced by the English rule; America's third rank might be due to the historical relations between England and America; Japan got better treatment than Russia; Pakistan's rank changed from the sixth to the fourth after the confrontation with India in 1965.

402. GHOSAL, T., *An Inquiry into the Curricular Trend in the Secondary Schools of India during the British Rule : (a comparative study)*, Ph.D. Edu., Cal. U., 1973.

The objectives of the study were : (i) to test the validity of the educational system of the country which had always been, to some extent, the microcosm of the larger social system; and (ii) to analyse the curricular trends in secondary education in India in context with the developments in England.

The study was chiefly based on library resources, authentic works on education in British India, reports and minutes of government officials. Critical study was made on : (i) indigenous Hindu and Muslim education in the first half of the nineteenth century; (ii) general assembly institution, Calcutta; (iii) Hindu Collegiate School; (iv) matriculation examination of the University of London; (v) entrance examination syllabus of the Calcutta University; (vi) entrance examinations in Calcutta, Madras and Bombay; (vii) Rabindranath's School at Shantiniketan; and (viii) the National Council of Education.

The study revealed that (i) the secondary school curricula, both in India and England, had during the period of the inquiry, introduced reforms as and when it needed an adjustment with the changes in the social, economic or political spheres; (ii) curricular reforms, when introduced gradually and at a lower pace, generally suited well with the system into which they were introduced, whereas quick and involuntary changes had an apparent risk of ignoring the interacting influences of many institutions which were closely connected with the reforms and whose impact on the intended reforms was immense; (iii) Indian secondary education at the end of the British rule was much the same as it was in 1904 and had changed a little from what it was in 1884; (iv) the reformers of Indian education studied foreign systems of education and tried to derive benefit from it, which resulted into a system unsuitable to the Indian situation;

(v) the first quarter of the present century witnessed in India a reaction against the lowering down of the standard of the secondary education; and (vi) the secondary school in India had failed to deliver goods for the simple reason that its curriculum was an imitation of the British model without proper consideration of the social, economic or cultural context of the nation.

\*403. GHOSH, A., *Study of Backwardness in English in the Secondary Schools of West Bengal*, Ph.D. Edu., Kal. U., 1977.

The objectives of the study were : (i) to carry out a survey of the attainment of pupils in English; and (ii) to diagnose the backwardness in specific areas of English.

The study was limited to the pupils of classes VI to IX of the schools of West Bengal. The study involved : (i) construction, standardisation and administration of an attainment cum diagnostic test in English; (ii) finding the teachers' rating on the causes of backwardness; and (iii) undertaking case study of randomly selected samples to determine the causes of backwardness.

The findings of the study were : (i) Thirtytwo to thirtyfour percent of children of West Bengal schools were backward in English; (ii) backwardness in different aspects of English taken in order of their intensity were, use of capital letters and punctuations, comprehension, usage, spelling, vocabulary and sentence construction; and (iii) causes of backwardness were unscientific curriculum, lack of attention at home, unsuitable teaching method, poverty, maladjustment, absenteeism, bad company, want of necessary books and teaching aids, congestion at home, lack of proper place to study, poor health, and substandard attainment in English at primary stage.

404. GUPTA, P. K., *A Critical Analysis of the Elementary School Curriculum in NEFA (Arunachal) with Suggestions for Improvement*, Ph.D. Edu., Gau. U., 1973.

The following were the objectives of the study : (i) to analyse critically the elementary or junior school curriculum in NEFA on the basis of an examination of its socio-economic and cultural conditions; and (ii) to offer suggestions for improvement.

The study was divided into two sections. Section one explained the purpose, need, scope and methodology and gave the socio-economic survey of the place. The second section provided an account of the progress of education in NEFA from 1947 to 1970. Information regarding the socio-economic sta-

tus and educational progress was sought from the village elders, teachers, village level workers and officials of the medical and agriculture departments working in the area, directorate of education, state department of education and Report of Education Commission.

The findings of the study were as follows : There was an increase in the number of primary schools with emphasis on agriculture and crafts. Schools of NEFA suffered from problems of low enrolment and irregular attendance. The following were the defects of the existing curriculum — over emphasis on the three R's, isolation from life outside the school, inadequate provision for the needs of child life, subject-centred rather than child-centred, dominated by examination, inadequate as a preparation for life, and not related to the NEFA environment. Some of the modifications suggested in the basic school curriculum were : (i) emphasis should be on the child rather than the craft; (ii) music and fine arts must be included for the emotional growth and aesthetic development of children; and (iii) concept of work experience should be included in NEFA schools.

\*405. *INDAPURKAR, C. D., A Linguistic Study of Errors in English of Middle School Pupils of Chandrapur (Chanda) District of North-East Maharashtra, Ph.D. Linguistics, Poona U., 1968.*

The objectives of the study were: (i) to describe the various types of errors found in the spoken and written English of the middle school pupils; (ii) to classify the above errors suitably; (iii) to find out whether there are any common trends in these errors; (iv) to find out the errors which continue throughout the middle school standards; (v) to find out the probable causes of these errors with special reference to the interference of Marathi, the mother tongue of these pupils; and (vi) to have a comparative study of some frequent errors in written and spoken English.

The sample for the study included the students of two coeducational middle schools (standards V to VIII), many of whom came from rural area where sufficient and proper facilities of secondary education were not available. Data were collected through oral tests (N=240) to examine errors in spoken English, administration of written tests (N=320) to examine the errors in written English, and assessment of annual examination answer papers (N=160). Students of standard VIII were not included for oral test which was the main basis of the study. The tests used were developed for the present study and they assessed the

errors committed in grammatical structures in English. The errors located through the study were classified as lexical errors, morphological errors, errors regarding function words, errors at the phrase level, errors at sentence level and errors regarding the writing system. The frequencies and percentages of errors committed by pupils were computed.

The following were the findings of the study : (i) The lexical errors were not frequent in any standard as revealed in oral test. But the assessment of annual examination papers revealed that the error of replacing proper word to phonetically resembling word was very frequent both in standards VII and VIII. (ii) Regarding morphological errors, the analysis of annual examination answer scripts revealed that in standards VI, VII and VIII, the error of verbal inflection type was very frequent. The oral test revealed that in standard VIII, the error of verbal inflection was very frequent in standards V, VI and VII. The written test revealed that in standard VIII, the error of verbal inflection was very frequent. (iii) The errors of pronouns were very frequent as revealed in oral test. Very frequent errors regarding articles were revealed in oral test and analysis of annual examination answer scripts, but were missing in the written test. (iv) The analysis of annual examination answer scripts revealed that in standards V, VI and VII, the very frequent errors were regarding nominal phrase structure. The oral test revealed that in standards V and VI, very frequent errors were found regarding verbal phrase structure. The written test revealed that very frequent errors regarding prepositional phrase structure were found in standard VIII.

\*406. *JAIN, D. C., Mistakes in Written Hindi and Try out of Remedial Measures, Ph.D. Edu., Agra U., 1978.*

The objectives of the study were : (i) to study errors in written Hindi of students; (ii) to tryout some remedial measures for correcting these errors; and (iii) to assess the effectiveness of the above remedial measures.

Both descriptive survey method and experimental method were adopted in the study. A survey of mistakes of students was made and these mistakes were categorised and quantified. A pretest of errors in written Hindi and a post test to evaluate the achievement of students which was used after the tryout of remedial measures, were developed. The following techniques were used as remedial measures apart from the individual correction technique : (i) large group correction technique, involving the use of planned



group discussion of common mistakes and following-up programme in full classroom setting; (ii) reinforcement of the above technique with a guided extensive reading of books and magazines of general interest to the students.

The major findings of the study were : (i) reinforced correction technique was more effective than individual correction technique in remedial teaching; (ii) reinforced correction technique was more effective than large group correction technique in remedial teaching; and (iii) large group correction technique and individual correction technique were equally effective in remedial teaching.

\*407. JAIN, K. C. S., *Evaluating Commerce Curriculum at the Under-Graduate Level in Relation to the Job Requirement of the Bank Employees*, Ph.D. Edu., Raj. U., 1977.

The main purposes of the study were : (i) to analyse and critically examine the prevalent B.Com. (pass) curriculum for the year 1976 of the University of Rajasthan, with a view to assessing its efficiency in preparing graduates for performing the required bank jobs successfully; and (ii) to study the magnitude of contribution of the independent variables, namely, B.Com. degree, job experience, age, and intelligence, on the job success of bank employees. The two hypotheses formulated were : (i) there would be no difference in the job performance of commerce graduates and non-commerce graduates employed in the banks, and (ii) there would be no contribution of commerce courses at the undergraduate level in preparing students to undertake the jobs in banks.

The sample consisted of 85 commerce graduates and postgraduates and 85 non-commerce graduates and postgraduates working in the banks, and 31 bank managers working in the banks of Udaipur and Ajmer cities. The college teachers and managers of banks helped in assessing the curriculum in relation to the banking skills. The tools used were : (i) a personal data blank, and (ii) a scale to assess the employees by the managers. The data were also collected through interview. The statistical techniques used for the analysis of data were correlation and partial correlation techniques, analysis of variance and analysis of covariance.

The major findings of the study were as follows : (i) Over-all job performance in banks of commerce and non-commerce groups was approximately of equal standard. (ii) The non-commerce group was found to be superior only in punctuality and attendance to work, whereas there was no difference in

various other aspects of job performance. (iii) It was found that there was correlation between age and job performance, but the other statistical techniques established that age does not affect job performance. (iv) There was no correlation between job performance and job experience in banks. (v) When commerce and non-commerce groups were studied separately, it was found that intelligence was not related to job performance. But on combining the two, significant correlation was found between intelligence and job performance at 0.05 level. (vi) More than fifty percent of the college teachers, bank managers and bank employees opined that eleven, seven and eight banking skills respectively were included in the curriculum (out of 34 banking skills). (vii) All the three groups opined that only a part of banking skills were included in commerce curriculum and because of this there was no significant difference in the job performance of commerce and non-commerce graduates in the banks.

\*408. KALRA, J. N., *An Investigation into the Basic Hindi Vocabulary of Children of Third Class (usually of 8+) in the State of Haryana*, Ph.D. Edu., Kur. U., 1977.

The purpose of the study was to investigate into the basic comprehension vocabulary in Hindi of the children of class III in Haryana.

The study was undertaken at two stages, viz., the pilot study and the main study. For the main study, textbooks of class III and other reading materials were analysed for collecting words. The other sources for collecting words were, children's writings and words used by teachers while teaching these children. The total number of words finally collected was 1632. These words were arranged in alphabetical order and distributed into fourteen checklists each containing 116 to 120 words. Against each word five alternative meanings were given and the children were asked to underline the correct meaning and also to write its serial number on the space given for the purpose. The sample, which consisted of about one percent of the population of children of class III in Haryana, was 1450. This sample of children was taken in clusters from class III of different schools. The scripts of these children were analysed.

An alphabetical list of words was prepared showing the percentages of the students in the sample who knew the meanings, and confidence intervals of these percentages for the population. The glossary of words thus prepared could be used by the textbook writers in the subjects of Hindi, social studies and general science for class III in Haryana.

Empirical research studies, experiments in schools, incidents in planned change, and the relevant papers available in this respect were then examined. Lastly, a survey was made. Questionnaire and interview were the tools of collecting information. The questionnaire sought information relating to use of non-directive techniques in the instructional programme of the institutions, details about the organisation of such techniques, their periodicity, types of activities entailed, average size of the groups, role of the teacher, and objectives of adopting them, and evaluation or at least a general assessment of the impact of these techniques. Seven types of institutions were involved in this survey, viz., training colleges, education and other departments of universities, miscellaneous colleges, institutes of technology, public schools and other institutions. The sample of the study comprised 201 institutions to which the questionnaire was mailed, but the responses came from 101 only. Representatives of ten institutions were also interviewed. Qualitative analysis of the responses was made.

The following were some of the main findings : (i) Mainly four nondirective techniques were found to be in use, viz., T-Group, Team Teaching, Group Discussions, and Working in Groups. (ii) Teacher education institutions were found to use 'group discussion' method by way of tutorial groups, and working in groups' method was utilised in organising cocurricular activities. (iii) Team teaching in various modified and quite often truncated form, was also employed by some of the institutions. (iv) These techniques were employed in other institutions in the regular educational system, to some extent in institutions of higher education, and to a negligible extent in school system. They were used to a significant extent in specialised institutions for training inservice high level personnel for administration, management and planning, etc., in educational, governmental, health and such other fields. (v) It appeared from the responses that T-Group technique was very little known to our academic community. There were a few T-group trained people in India, who were making efforts to use and propagate the technique. However, the technique seemed to be very far from the actual educational system. (vi) Group discussions were organised by a large number of institutions formally or informally. (vii) According to responses, activities involved in the nondirective techniques include discussions, projects, reading together, panel discussion, symposium, workshop, seminar, paper reading, preparation of teaching aids and instructional materials, etc. (viii) The size of the groups quite often varied according to the enrolment in an institution and in the particu-

lar class for which the activity had been organised. (ix) The teacher's role as expected in these techniques, was that of a participant guide. (x) In the application of these techniques more of cognitive objectives seemed to be in view rather than affective or psycho-motor objectives. (xi) Very few institutions systematically evaluated the effectiveness of these techniques, although most people admitted that these techniques would improve the quality and tone of work in an institution. (xii) Team teaching introduced in some institutions was slowly gaining acceptance. (xiii) More and more institutions were organising their instruction in smaller groups to supplement the larger classroom work.

412. MISHRA, J. N., *A Study of the Problems and Difficulties of Hindi, English and Sanskrit Language Teaching at Secondary Stage*, Ph.D. Edu., Sag. U., 1969.

The study aimed at (i) illustrating the importance of language in all round development of child's personality; (ii) finding out the reasons of deterioration of the standard of Hindi, English and Sanskrit languages among the students at higher secondary stage; (iii) knowing the practical problems and difficulties of Hindi, English and Sanskrit language teachers in their daily language teaching; and (iv) giving the various practical and constructive suggestions for improving the standard of Hindi, English and Sanskrit languages among the students.

A questionnaire containing twenty-nine different common parts of Hindi, English and Sanskrit language teaching was developed. It was sent to 1,000 Hindi, English and Sanskrit language teachers of higher secondary schools of Madhya Pradesh. Data were also collected through interviews, observation and a survey of literature of Hindi, English and Sanskrit language teaching.

The main findings were as follows : (i) Ninety percent teachers experienced the difficulty of explanation in prose teaching; more than seventy-five percent teachers used translation method. (ii) Only thirty-two percent teachers inspired the students for general reading. (iii) Nearly ten percent of the teachers were found to motivate the students to note certain important language material in the class. (iv) Forty percent of the teachers did not give practice of loud reading and less than fifty percent of the teachers asked the students to memorise certain good pieces of prose and poetry. (v) Very few teachers gave practice of correct pronunciation. (vi) Seventy-five percent of the teachers recommended oral and writing practice to improve upon correct spelling. (vii) Majority

409. KRISHNAMURTI, R., *Preparation of Materials to develop Reading Readiness in Children of Pre-School Age, S.I.T.U. Council of Educational Research, Madras, 1971. (NCERT financed)*

The objectives of the project were: (i) to prepare materials such as pictures, charts, etc., for the development of reading readiness; (ii) to prepare reading readiness tests and administer them to the pre-school children; and (iii) to determine the reliability and validity of the developed tests.

The sample consisted of 342 children (boys = 203, girls = 139) attending ten nursery schools in the city of Madras. The number of children varied from test to test from 80 to 342. The sample was purposive. Reading readiness was measured by (i) the Word-Meaning Test (Verbal); (ii) the Sentence Meaning Test (Verbal); (iii) the Word Meaning Test (Non-verbal); (iv) the Visual Perception Test (Similarities); (v) the Auditory Discrimination Test; and (vi) the Copying Test. Reliability of the tests was found by the method of rational equivalence. Reliability coefficient of the Reading Readiness Test was found to be 0.94.

The major findings were: (i) Children of 4+ were ready to take instruction in reading. (ii) Girls of 4+ to 5+ did better in reading readiness tests than boys of the same age. (iii) The copying test was not so easy to the children as the visual perception test. (iv) Nursery school children from the low income group were as able as those from high income group in their performance in the reading readiness tests. (v) Children exhibited equal ability in taking verbal and nonverbal tests. (vi) The pre-school age children possessed essential language elements to profit by reading. (vii) There was an urgent need for attractive get up of (a) reading readiness workbooks, (b) pre-primers, and (c) card boxes of letters and words, for building words and sentences. (viii) The tests were useful for preparing language materials of pre-primers and primers.

410. MEHROTRA, R. C., *Deviations from Standard Hindi Available in the Written Hindi of the Native Speakers of Other National Languages and Different Dialects of Hindi, Dept. of Linguistics, RSU, 1974. (NCERT financed)*

Finding out the impact of different mother tongues on Standard Hindi was the main objective. This was studied in terms of (i) spellings, (ii) grammar, and (iii) meanings.

Informants were of three grades: (i) junior high

school, (ii) high school/higher secondary school, and (iii) degree class — one each from each place. Twentytwo places in the entire Hindi-speaking area were visited for the twentytwo dialects of Hindi for bringing out the regional standards of Standard Hindi. The dialects along with the names of the respective places were: (a) Western Hindi Group — (i) Regional Standard Hindi (Moradabad), (ii) Kauravi (Meerut), (iii) Bangru (Jeend), (iv) Braj (Mathura), (v) Kannauji (Etawa), (vi) Bundeli (Jhansi), (vii) Nimari (Khandwa), (viii) Dakkhini Hindi (Gulbarga); (b) Eastern Hindi Group — (ix) Awadhi (Rai Bareilly), (x) Bagheli (Rewa), (xi) Chhatisgarhi (Raipur); (c) Pahari Hindi Group — (xii) Kumauni (Naini Tal), (xiii) Garhwali (Narendra Nagar), (xiv) Mandeali (Simla); (d) Rajasthani Hindi Group — (xv) Mewati (Alwar), (xvi) Dhundhari (Jaipur), (xvii) Marwari (Pali Marwar), (xviii) Harauti (Kota), (xix) Malvi (Indore); and (e) Bihari Hindi Group — (xx) Bhojpuri (Ballia), (xxi) Magahi (Gaya), (xxii) Maithili (Darbhanga). Two sets of data were collected from each informant; (i) one hundred test sentences supposed to be containing almost all spelling types and constructions of Standard Hindi, and (ii) extempore writing of a passage of about one thousand words. The base material, thus, was of six thousand and six hundred restricted sentences and unrestricted passages having six thousand and six hundred words.

The results of the study were as follows: Hindi speakers taken together committed 44 errors comprising 111 sub-errors, out of which 5 belonged to 'augment', 9 to 'elision', and the rest 97 were related to 'substitution'. According to the findings, Dakkhini fell farthest which showed 28:46 deviations, and the second most distant dialect from the set point of view was Kauravi which deviated 27:39. The nearest to the widely accepted standard, i.e., National Standard Hindi, was, of course, the Informants' Standard Hindi, i.e., Regional Standard Hindi, which deviated 10:13.

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The present project was an attempt to find out how far the personnel engaged in educational activity in our country were knowledgeable and were using in their work the methods and techniques of nondirective teaching like T-Group, Role Playing, Simulated Social Skill Teaching, Team Teaching, etc.

The project started with a look into the tradition of nondirective methods in ancient Indian education,



of teachers considered inductive method of grammar teaching more suitable in language teaching, but eighty percent teachers used deductive method. (viii) Majority of the teachers did not find time for correction of translation work due to heavy workload. (ix) Majority of teachers adopted dictation method in essay teaching. (x) Nearly ninety percent teachers adopted the method of dictation of notes. (xi) Almost all teachers opined homework to be essential, but only twentyfive percent were able to check and correct home work of the students; (xii) Cent percent teachers opined that the courses of all the languages were too vast to finish in time before the commencement of the examinations. (xiii) Ninety percent teachers pointed out that the lessons in the textbooks were above the mental level of the students. (xiv) Ninetyfive percent of the teachers accepted the language examination to be essential.

413. MISRA, B. G., RAO, K. V. V. L. N., KOSHAL, S., and JASWAL, S. C., *Studies in the Bilinguals' Hindi*, CIIL, Mysore 1974.

The aim of the study was to determine the differences in the grammatical structure and in the modes of linguistic expression of Hindi used by non-Hindi speakers at the oral as well as written level. It was assumed that such characteristics would differ for different groups of mother tongue speakers and would correlate with the specific grammatical features and modes of linguistic expressions of the mother tongues. It was further assumed that after a study of this nature for different language groups it would be possible to determine the characteristic features of pan-Indian Hindi different from that of the native standard. It would show how and to what extent features of other languages were assimilated in pan-Indian Hindi.

At the initial phase the grammatical characteristics as well as modes of literary expressions of published Hindi writings by non-native speakers of Tamil, Telugu, Kannada and Malayalam were analysed. A contrastive analysis of grammatical and literary features was presented in this analysis. Thus separate studies of Tamil-Hindi, Telugu-Hindi, Kannada-Hindi and Malayalam-Hindi at the written levels were made in this framework.

It was found that the Hindi used by the speakers of any one of these languages carried over grammatical features as well as modes of literary expression from their mother tongues into Hindi. Some of these were in the process of being assimilated. It was further found that there were some features which were common to all the four varieties of Hindi which could then be considered at least pan-South-Indian fea-

tures in the bilinguals' Hindi.

414. MITRA, K. R., *Evolving a Method of Teaching English as a Second Language for Higher Secondary Classes in Delhi Schools*, Ph.D. Edu., Del. U., 1974.

This study was an attempt to guide Delhi teachers through the perplexing problems of English language teaching, to place at their disposal some positive resources which could be used sensibly and constructively for reorganising the teaching techniques for better results. The study was undertaken with the following hypotheses : (i) In spite of adverse political propaganda and contrary educational policy of the government the attitude of the students towards English has not been adverse. On account of so many obvious reasons English is even now very much wanted by the parents and students alike. (ii) The deteriorating standard of English calls for a rethinking and reconsidering commonly accepted psychological principles of foreign language teaching. (iii) The study of English does not stand in the way of learning Hindi. On the other hand a contrastive study of English and Hindi language should show that achievement in one facilitates that of the other. (iv) In view of the newly postulated aims of teaching English to Delhi students and the targets to be achieved by them with minimum possible resources in shortest possible time, the urgency of the need for a radical change in the teaching method can never be undermined. (v) The newly evolved method is to be more sound from the standpoint of psychology of foreign language teaching. It is to be more purposeful and thus more effective.

The techniques of research comprised observational studies, questionnaire, interview, documentary analysis and desk study. The sample of the study was different according to the technique of data collection. The questionnaire was administered to 406 students of class IX in five Kendriya Vidyalayas in Delhi, in order to know their attitude towards English and their preferences for medium of instruction. With the help of an interview schedule quite a number of teachers, educators and officers of Delhi were interviewed. Marks in English and in Hindi in the middle school examination obtained by the holders of first ten positions in nine government schools of Delhi were collected and analysed to find out the relationship between the students' performance in the two subjects. Through the desk study a contrastive analysis of Hindi-English phonemes and stresses was made. The methodology of teaching English suggested at the end of field work was put to classroom experimentation for the sake of validation and necessary modification.

Fortytwo students of class X of a Central School in Delhi comprised the sample for the first experiment which was of single group pretest-posttest design. In the second experiment control and experimental groups were taken and the groups were rotated. Twentyone and twenty students of class IX were in each group respectively. Data of the two experiments were analysed statistically.

The findings of the study were as follows : (i) No steps were taken to help students to develop proper attitude towards English. (ii) By far the majority of the teachers were found dissatisfied with the existing methodology of teaching English. (iii) There was a positive correlation between the students' achievement in English and Hindi. (iv) Oral instruction was found to be essentially important and the teacher had to be the active model in the English class. (v) The results of the experiments also indicated the effectiveness and superiority of the evolved methodology.

- \*415. NAIR, K. S., *A Study of the Concept of Standards in English through an Analysis of the Textbooks prepared for Secondary School Pupils in Kerala State since 1952*, Ph.D. Edu., Ker. U., 1976.

The main aims of the study were (i) to analyse the textbooks in English prescribed for study for the secondary school pupils in Kerala since 1952, in terms of the accepted criteria for evaluation of textbooks; and (ii) to compare the findings of the analysis of the textbooks to find out the concept of standard in English.

The textbooks and supplementary readers prescribed for study in secondary schools in Kerala since 1952 were analysed on the procedure adopted by the methods department of the Central Institute of English and Foreign Languages at Hyderabad. A questionnaire, which incorporated the main criteria for arriving at the concept of standards which were tentatively set on the basis of the hints indicated in the textbooks, was administered to experts in the field of teaching of English. The concept of standards in English was studied based on the analysis of textbooks and the responses of experts. The results of the Secondary School Leaving Certificate Examinations for which the selected textbooks were prescribed, were analysed to find out the level of achievement of pupils in English.

The following were some of the salient findings of the study: (i) The analysis of textbooks showed that the concept of standards of attainment in English had changed with change in textbooks. (ii) Indo-English writings were not given proper representation in the early books. (iii) The vocabulary load on the basis of

density indices was found to be very high in the early books and it seemed to become progressively lower in later books. (iv) The density index of new words in the textbooks was satisfactory. (v) The textbooks showed improvement in the use of structure over the period particularly in standards VII and IX. (vi) The phrasal verbs and idioms used in the readers were in accordance with the linguistic attainment of pupils. (vii) The analysis revealed that the standards of attainment in English as indicated in the textbooks for the period had fallen. The opinion of experts confirmed this conclusion.

- \*416. NISCHOL, K., "Prakriti Vihin Purush" — *Delhi Prashasan Ke Shiksha Vibhag Dwara Prakashit Hindi Bhasha Ki Pathya—Pustakon Men Nari Aur Balika Ke Chitrana Ka Ek Adhyayana*. All India Women's Conference, New Delhi, 1976. (NCERT financed)

(Women and Girls as Portrayed in "Prakriti Vihin Purush"—the Hindi Language Textbook published by the Education Department of Delhi Administration).

Following the same procedure and methodology as in the case of English textbooks, Hindi textbooks published by the Education Department of Delhi Administration were evaluated.

The findings of the study showed that the total number of references to men's life was 94, while that of women's life was 16. Women had limited field of work. They had generally been portrayed as mother in these books and it appeared that men and women did not work together.

- \*417. NISCHOL, K., *Women and Girls as Portrayed in the English Language Textbooks Published by the Central Institute of English, Hyderabad*, All India Women's Conference, New Delhi, 1976. (NCERT financed)

This study investigated the role of girls and women portrayed in search of a sexist bias or stereotypes inconsistent with the principle of equality between the sexes.

A questionnaire and a checklist were modified, retested and used by one expert and two evaluators for evaluating these books.

Biographical references to males outnumbered the references to females by 78 to 3. The male-oriented stories outnumbered the female-centred ones by 81 to 9. Women were either invisible or having no roles, nor names, as non-achievers and non-initiators. Many such glaring trends were noticed statistically and analytically.

418. PAI, P., and JEYAPPAUL, V. Y., *Survey of the Active Vocabulary and Structure Types of Tripuri speaking Children, CIIL, Mysore, 1974.*

The objective of the study was to find out the active vocabulary and structures that would be found in the speech of Tripuri speaking children of the age groups 4+, 6+, 8+ and 10+.

The investigators visited homes, schools and play grounds where the Tripuri children could be found and interviewed them in natural settings. The children were selected randomly from both sexes. Roughly twentyfive children in each age group were interviewed in three to six different villages. The investigators used question and answer method. Questions were asked with the help of a teacher. Different types of questions were put to different age groups depending upon their comprehension level and verbal capacity to answer. Induced conversation method was also used in some cases by asking one of the children to put a question to another and that child, after answering, put a question to the first child. Clues were given for questions wherever conversation stopped. The children talked more freely. The answers to questions and conversations were recorded, transcribed, analysed and classified.

The findings revealed that (i) the active vocabulary showed a gradual and constant increase with respect to age; (ii) the syntactic complexity also was found to increase progressively in the higher age groups; (iii) the children of lower age groups were not able to give long narration or stories; (iv) the children of lower age groups were familiar with less number of semantic domains than those of higher age groups; (v) the girls had a comparatively larger vocabulary in the areas of cooking, pounding etc., and boys in the areas of cultivation, harvesting, house building and liquor making and (vi) Bengali words were almost nil in the speech of 4+ children and were found to increase with age.

- \*419. PAL, A., *Developing a Reading Oriented E.L.T. Strategy: A Psycholinguistic Study, Ph.D. English, CIEFL, 1978.*

The objectives of the investigation were to study (i) the relationship between reading ability in English and intelligence, motivation and selected environmental variables of school and college students in ELT classroom; (ii) basic differences in the requirements for an adequate programme of reading instruction in English in our schools and colleges; (iii) the possibility to synthesise a reading oriented ELT strategy for the

school and college students; and (iv) the essential features of the strategy.

A survey of reading ability in relation to psycholinguistic and sociolinguistic factors was done to examine if significant psycholinguistic and sociolinguistic variations existed in the classrooms of schools and colleges. This was followed by the examination of the relative importance of perceptual, contextual and conceptual reading skills in English at school and college levels.

The findings of the study were as follows: (i) reading-oriented ELT strategy for the school students; in schools as well as colleges was generally dependent on their verbal intelligence and language proficiency. (ii) The reading instruction strategy combining the perceptual and conceptual skills could lead to significant improvement in reading comprehension levels of school students, irrespective of their verbal intelligence and initial reading ability. (iii) The college students with different initial reading efficiency level required training in different types of reading skills. Poor readers were found to have responded most favourably to a strategy based largely on the perceptual skills. Those with high initial reading efficiency levels were found to respond most favourably to the training in advanced conceptualization and comprehension skills. (iv) Contextual presentation of the vocabulary and structural items was found to be an effective and practicable reading-oriented ELT strategy for the school students; students taught according to this strategy not only registered significant improvement in the overall language proficiency but also improved their reading comprehension levels significantly. The strategy was also found to be equally favourable to the students with different intelligence and initial reading abilities.

- \*420. PARIKH, V. P., *An Inquiry into Factors Affecting Reading Speed and Comprehension, Ph.D. Edu., MSU, 1976.*

The objectives of the study were: (i) to study comprehension; (ii) to study the effect of sizes of letters on reading speed and comprehension; (iii) to study the effect of contents of reading material on reading speed and comprehension; and (iv) to study the interaction between types of format, sizes of letters and contents of reading material upon reading speed and comprehension.

A factorial group design 2 x 3 x 3 was employed in order to study the interactions between types of format, sizes of letters and contents of reading material upon reading speed and comprehension. The data were analysed by controlling the effect of levels of intelligence and vocabulary of the students. In each of



the 18 cells, 100 students of age group 11+ were observed. They were from the elementary schools of Municipal Corporation of Baroda. The tools used were : (i) Group Intelligence Test by Lele (1936), (ii) a vocabulary test, (iii) reading material, (iv) reading speed measure, and (v) a reading comprehension test. Measures of central tendency and dispersion and covariance techniques were used in the analysis of the data.

The findings of the study were as follows : (i) Reading speed is influenced positively by printing the material in two narrow columns, having printing size as 10-point, and having history type of content. Within the limitations of criteria selected and studied, reading speed is also positively influenced by having two narrow columns with 14-point of letters or a single broad column of 10-point type of letters. It was found that reading speed is high when different contents are printed in two narrow columns with 14-point type of letters. (ii) Reading comprehension is positively influenced by size of letter (12-point type) and story type but not by the type of format. With regard to the history, biography and story content type, 10-point type was found to have better influence. History type of content in single broad column of 10-point type or two narrow columns of 14-point type and story and biography types of content in two narrow columns of 10-point type or 12-point type of letters aid better reading comprehension.

\*421. PATEL, D. N., *A Study of Readability Indices of the Prescribed Science Material for Class VIII and Its Effectiveness on Reading Comprehension*, Ph.D. Edu., SPU, 1976.

The major objectives of the study were : (i) to prepare a list of impediments from the chapters of the textbook; (ii) to select suitable readability formula and to study its reliability; (iii) to determine the readability index of each chapter; (iv) to prepare a tool for measuring comprehension based on the three chapters having highest readability index; (v) to rewrite the chapters to a lower level of readability; (vi) to study the effect of materials having high and low levels of readability on pupils' comprehension; and (vii) to study the effect of materials having high and low levels of readability on the comprehension of students who are intellectually below and above the average value and of those who are below and above the average value of the reading ability.

In order to achieve the above objectives an experimental method of equivalent groups was designed. Fourteen classes of ten schools were arranged into seven pairs of equivalent groups thus comprising seven

replications of the experimental design. In each replication of the two groups, one was control and the other was experimental. In all 588 pupils participated in the study. The data were collected with the help of following tools : (i) a reading ability test, (ii) a non-verbal intelligence test, and (iii) a comprehensive test in science. The control group read original textual material of high readability while experimental group read rewritten textual material of low readability for specified time. After reading, comprehension test in science was administered.

The major findings of the study were : (i) in general, the pupils could comprehend the low readability material better than the high readability material; and (ii) reading ability and IQ were found to have an effect on the reading of the materials at different levels of readability.

422. PATTABHIRAM, G., *An Evaluation of Nationalised Textbooks for Higher Classes in Social Studies in Secondary Schools of Andhra Pradesh*, Ph.D. Edu., MSU, 1973.

The objective of the study was to evaluate the nationalised textbooks in social studies, in order to locate their defects and deficiencies and to suggest remedial measures.

The evaluation of the textbooks was done with the cooperation of teachers, headmasters, pupils, teacher educators, administrators, and educational publishers. The characteristic features under study were : (i) the design and the lay out, (ii) the content, and (iii) the objectives to be attained by the pupils. Data were collected from different sources like, Andhra Pradesh government orders relating to nationalisation of textbooks, Director of Public Instruction of Andhra Pradesh, proceedings related to nationalisation of textbooks, educational reports from 1921 to 1958, the Central Bureau of Textbook Research, Ministry of Education and Social Welfare, and the Government of India. Views expressed in educational journals, periodicals and dailies were also analysed and studied.

The main findings of the study were : (i) all the nationalised textbooks were rated as satisfactory with regard to their mechanical characteristics, but there was room for improvement of design, stitching and wrapper; (ii) all the books, in general, had adequate content but readjustments in some units were necessary; (iii) the presentation of content was below average in the nationalised textbooks meant for class X; (iv) because of the ambiguity and vague presentation of matter, the illustrations in the textbooks for classes VIII through X were inadequate and below average;

(v) inadequate assignments and exercises in the textbooks needed restructuring based on the objectives of the course; (vi) bibliography, unit references, and chapter summaries were not giving due and adequate weightage to current events; and (iii) the nationalised textbooks were better in quality and quantity as compared to old textbooks, but there was enough room for making qualitative improvement.

423. PATTANAYAK, D. P., DAVE, P. N., VARADABHATTACHAR, S. V., and UPADHYAYA, S. P., *Improving Language Skills in the Mother Tongue (A Developmental cum Experimental Bridge Course Project for College Entrants Studying through the Medium of Mother Tongue : Kannada)*, CIIL, Mysore, 1972.

The objectives of the study were: (i) to prepare a test that can be used as a pre- and post-test for evaluating language skills, namely, Listening Comprehension (LC), Listening Note taking Competence (LNC), Reading Comprehension (RC), Guided Composition (GC), and Epitomising an English passage into Kannada, of college entrants; (ii) to analyse the data obtained through the pretest in order to determine the levels of attainment in language skills of college entrants with respect to Kannada; (iii) to prepare a bridge course of 100 hours with respect to the above mentioned five skills: (a) to develop graded instructional materials of 100 hours with respect to all the skills, (b) to construct test for evaluating the continuous progress of students during the conduct of the bridge course, and (c) to prepare the teacher's manual for guiding teachers in their teaching and testing procedures; (iv) to train a selected group of lecturers in making use of instructional and evaluation materials in the conduct of the bridge course; (v) to test experimentally the effectiveness of the bridge course; (vi) to investigate the relationship between the content input (instructional material in the bridge course: analysed language content in terms of skills), the process (instructions given in teaching passages), and the output (learning outcomes indicating the level of attainment of language skills); (vii) to examine the possibility of existence of an independent hierarchical structure in language attainment; and (viii) to study relationship between language skills and variables such as sex, parental education, parental occupation and parental income.

The hypotheses tested were: (i) college entrants in the preuniversity courses trained through the bridge course in the mother tongue (Kannada) would show greater improvement in their language skills and aca-

ademic performance than those who were not so trained, (ii) language skills would be hierarchically related, (iii) significant differences would exist in language skills of students coming from homes having different parental incomes, education and occupation, and (iv) significant differences would exist between the language skills of males and females. The sample consisted of firstly, 730 P.U.C. students from thirteen colleges located in the cities of Bangalore, Bijapur, Dharwar and Mysore who were selected and given a pretest comprising eight subtests and secondly, eightyfour students from three colleges in Mysore and two in Bijapur who volunteered for the course and given an intensive training in their own colleges by the lecturers specially trained at CIIL, Mysore, for conducting the same. After the training the experimental and control groups were administered the same pretest and post-test. The data collected were analysed through analysis of covariance, t test, and chi-square.

The analyses of results gave support to the hypotheses and revealed that (i) the college entrants in the P.U.C. courses who were given intensive training through the bridge course showed greater improvement in their language skills and academic performance than those who were not; (ii) significant differences existed between the language skills of males and females; (iii) significant differences existed in some language skills of the students coming from homes having different parental incomes, education and occupation; (iv) the test and the subtests possessed a substantial amount of validity and a fair proportion of reliability.

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The major objectives of the study were: (i) to prepare a list of impediments out of all the chapters of Geography textbook prescribed for class VIII by the State; (ii) to select a suitable formula for assessing readability of each chapter of the textbook; (iii) to study the readability of the selected formula; (iv) to determine the readability index of each chapter; (v) to find out the chapters having high readability; (vi) to prepare a tool for measuring comprehension in Geography for three chapters; and (vii) to study the effect of materials of high and low levels of readability on the comprehension of pupils falling in upper and lower quartiles of distribution of scores on reading ability test in Gujarati.

The sample consisted of 472 pupils of class VIII of ten secondary schools of Kaira District in Gujarat. The tools used for the study were teacher-made tests, reading ability test (prepared by B. V. Patel and R. S. Trivedi) and a comprehension test in Geography having reliability index 0.84. The study was experimental in nature. There were two groups – control and experimental – matched on mean and SD. The control group was given to read the original material of the three chapters while experimental group was given the rewritten version. To analyse the obtained data analysis of variance technique was used.

The major findings of the study were: (i) the range of readability levels of thirty-two chapters of the book under study was awfully large; (ii) the chapters of textbook were not arranged in ascending order according to their level of difficulty; (iii) the technical words not explained; and (iv) it was found that low readability materials had positive effect on reading comprehension of pupils having low and high reading abilities and also of pupils having low and high intelligence.

\*425. PILLAI, V. A., *A Critical Study of the Basic Structures in English and the Corresponding Structures in Malayalam and its Implications in the Design of a Course for Secondary Schools, Ph.D. Edu., Ker. U., 1976.*

The study attempted: (i) to select and adapt from among the many descriptions of English syntax, a form which would be suitable for the purpose of contrastive study with Malayalam syntax; (ii) to produce a short contrast grammar of Malayalam and English restricting to the area of syntax; (iii) to compare the basic structures in English and the corresponding structures in Malayalam; and (iv) to suggest a suitable methodology of teaching emphasising a productive use of the contrastive findings.

Ninetyfive pupils of standard X selected from ten schools belonging to the government and private managements from urban and rural areas, their teachers and twentyfive administrators (fifteen principals plus ten inspecting officers) formed the sample. An English attainment test on vocabulary, sentence building, and comprehension was administered to the students. Two questionnaires, one for teachers and one for students, were also administered. The syllabus in English for standards VIII, IX and X were analysed. Interview was carried out with administrators.

The following were some of the salient findings: (i) A comparison of the students' native language and the language to be learned would furnish a basis for better description of the language learning problems

involved and for preparation of better teaching materials. (ii) Many syntactical features in English structures that were similar to that of Malayalam structures were located. (iii) The structures of English and Malayalam, when subjected to contrastive analysis, produced a list of differences about the ways in which meanings would be signalled in the two languages. (iv) It would not only be possible to predict problems of interference in learning a foreign language structure, but also to rank them into different levels of difficulty. (v) It would be possible to rearrange the existing structures in a foreign language course on the basis of ease or difficulty of learning. (vi) The priority to be given to a structure in a foreign language course could also be determined on the basis of the contrastive findings.

426. RAO, A. S., and PATIL, V. A. M., *A Study of the Present set up of the Intramurals and Inter-School Competitions in Games and Sports in Schools, with special reference to the Method of Classification and Type of Programme for Achieving Aims of Such Competitions, Dept. of Physical Edu., Mysore, 1965. (NCERT financed)*

The study aimed at investigating into the intramural competitions in games and sports in schools with reference to (i) the group formations; and (ii) the type of activities for achieving the aims of such intramurals.

Three groups of boys were selected in each of the selected schools. Groups 'A' and 'B' served as experimental groups, whereas group 'C' worked as a control group in each school. Each group was divided into two teams of ten to twelve members. In the first phase, groups 'A' and 'B' were subjected to competitive and cooperative activities respectively. Group 'C' was left to continue with its normal school sports and games activities. In the second phase, the two teams of 'A' and 'B' groups were interchanged among themselves without changing their respective activities. In the third phase, the activities of 'A' and 'B' groups were exchanged. At the end of the third phase, the modifications in the group structures were studied. Four questionnaires were constructed and administered to the subjects.

The major findings were: (i) competitive activities increased both 'like' and 'dislike' attitudes; (ii) cooperative activities also increased 'like' attitudes, but decreased 'dislike' attitudes; (iii) change of membership of teams decreased 'like' as well as 'dislike' attitudes; (iv) the continued membership in a group increased the formed attitudes and hardened them;



and (v) the regular school life resulted in an increase of 'like' and decrease of 'dislike' attitudes, though it consisted more of competitive activities.

427. *RASTOGI, K. G. and Others, A Comparative Study of Mother Tongue Textbooks Prescribed for Primary Classes in Bengali, Gujarati, Hindi (Delhi), Hindi (U.P.), Telugu and Urdu, NCERT, New Delhi, 1975.*

The objectives of the study were : (i) to study the text books with special reference to (a) lessons, (b) exercises, (c) illustrations, (d) ancillary material and (d) physical aspect of textbooks, (ii) to analyse the content of textbooks and find out the weightage allotted to different components of the content, e.g., ideational content, linguistic content, etc., and (iii) to find out the relative weightage given to different instructional objectives.

An explanatory note on the aspects and criteria of textbooks was prepared to explain the content of study and to solve the problem of semantics, and an analysis sheet was prepared to analyse the textbooks on seventeen variables. Frequency distribution, range and percentage were used to analyse the data.

The important findings of the study were : (i) in regard to the 'Lessons', the most popular items were tales, fun and recreation, nature and natural environment, home, school and neighbourhood; the least popular items were 'Patriotism' and 'Technology'; the minimum and maximum number of new teachable words in different textbooks were as follows : (a) for Class I, minimum was 176 Hindi (Delhi) and 810 Urdu was the maximum, (b) for Class II, minimum was 215 Hindi (Delhi) and maximum was 785 Gujarati, (c) for Class III, minimum was 193 Urdu and maximum was 699 Hindi (Delhi), (d) for Class IV, minimum was 192 Urdu and maximum was 928 Hindi (Delhi), (e) for Class V minimum was 219 Telugu and maximum was 875 Hindi (Delhi); (ii) in connection with the exercises, there was more emphasis on 'expression' in Bengali series, whereas in Gujarati series, the exercises were focussed on 'information' and 'comprehension', exercises in Hindi (Delhi) series were 'expression' and 'comprehension' loaded and Hindi (U.P.) series was mostly 'comprehension' based while Telugu and Urdu series were 'information' loaded; inferences were drawn likewise on the following variables : themes, values, psychogenic needs, vocabulary, sentences, instructional objectives, exercises, illustration, ancillary material, length of lesson, presentation of content, cover page, printing, paper, binding, volume and size, and price of the book.

428. *RASTOGI, K. G. and Others, Preparation and Evaluation of Textbooks in Mother Tongue — Principles and Procedures, NCERT, New Delhi, 1975.*

The main objectives of the study were : (i) to develop the principles for the preparation of textbooks of mother tongue, (ii) to develop the aspects and criteria for the preparation and evaluation of textbooks of mother tongue, and (iii) to develop the tools and techniques for evaluating the textbooks of mother tongue.

The first draft was discussed in a workshop of experienced and knowledgeable persons in the area of textbook preparation. In order to make the tools valid and reliable, some textbooks were evaluated with the help of the tools. The tools used were : (i) the analysis sheet for content analysis, (ii) the evaluation proforma to evaluate the textbooks for selection as well as improvement, (iii) questionnaire for teachers, (iv) questionnaire for students, and (v) reporting card for reporting the evaluation of textbooks. Five point scales were developed to evaluate various aspects and subaspects of a textbook. Weightage to different aspects of textbooks and criteria against which they were to be evaluated, were defined in terms of percentage.

As a result of the investigation, the following items had been developed : (i) principles for preparation of mother tongue textbooks; (ii) aspects of textbooks and the criteria for evaluating these aspects; and (iii) tools and techniques for evaluating the textbooks.

- \*429. *SAKSENA, M., A Critical Study of Hindi Composition of the Students of VIII, IX and X of Hindi Medium Secondary Schools of Greater Bombay with a view to Improve their Linguistic Expression, Ph.D. Edu., SNDT, 1977.*

The aim of the present investigation was to study the Hindi composition of students of VIII, IX and X classes with a view to improving their linguistic expression.

The sample consisted of 100 teachers, 1050 students, 100 composition periods and 344 composition note books of Hindi medium secondary schools of Greater Bombay. The data were collected with the help of questionnaires, interview schedule and observations.

It was found that the problems of linguistic expression originated from four corners — teachers, schools, students and the curriculum along with the textbook.

- \*430. *SALKAR, K. R., A Study of Population Awareness Among School Students in Goa (Std. VII-XI) as well as Teachers and Parents and Their Reactions to the Inclusion of Population Education in the School Curriculum, Ph.D. Edu., Bom. U., 1975.*

The study aimed at finding out: (i) whether the school students, teachers and parents in Goa were informed of the economic consequences of rapid population growth in the country; (ii) whether they had a liking for small families; (iii) whether the school students realised the advantages of small families and the disadvantages of over population; (iv) whether the teachers and parents were informed about the new area of study, viz., population education; (v) whether the teachers and parents were in favour of sex education; and (vi) the way in which population education could be introduced in the school curriculum.

It was a descriptive survey research. The sample consisted of 2039 students studying in standards VII to XI in Goa district, their teachers and parents. Data were collected through a questionnaire and also by documentary analysis.

Some of the salient findings of the study were as follows: (i) The students, teachers and parents were aware of the population problem and the social effects of population growth. (ii) The students, in general, were not well conversant with the causes that had led to a decline in child mortality and death rate in the country. (iii) The students were unaware of cause - effect relationship that exists between the rise of standard of living, lack of education, entertainments on the one hand and the birth rate on the other. (iv) That a small family can provide proper education to its children was considered by the students as the most important advantage of small families. (v) Teachers as well as parents were willing to have population education in the school curriculum. (vi) A considerable number of students, teachers, and parents preferred population education to be taught in schools as integrated with other subjects like language, science, social studies, mathematics, etc. However, about one-third of students and more than one third of parents were ready to give population education the place of a separate subject in the school curriculum. (vii) A sizeable number of teachers felt that population education be introduced in the school system only from standard IX onwards. However, a considerable percentage of teachers were of the opinion that the subject be introduced from standard VIII onwards. (viii) Majority of teachers and

parents did not favour separate classes for boys and girls to teach population education. (ix) About 63.8 percent of teachers and forty-nine percent of parents favoured sex education being included along with population education.

431. *SEETHARAMU, A. S., An Experimental Study of the Problem of Moral Instruction in Upper-primary Schools, Ph.D. Edu., Mys. U., 1974.*

The study aimed at finding the effect of direct moral instruction on the moral development of children.

For the purpose of the investigation, the test of moral development was developed. It comprised thirty-four situations involving moral judgment. The situations were reflective of life incidents in children's day to day activities. The test covered various aspects of the morality like honesty, truth, responsibility, generosity, courtesy, kindness, service and sacrifice, love of fellowmen, patriotism, revolt against injustice, etc. Suitable modifications in the test were made after a tryout. The study employed an experimental method having experimental and control groups. The dependent variable was the moral development in students. Moral development, intelligence, and socio-economic status of 562 children studying in standards VI and VII of four schools located in the different localities of the Mysore district were measured. From among them, the experimental and control groups were formed by matching on means and standard deviations on the tested variables. The experimental group was taught the moral lessons by the investigator himself for a period of twelve weeks to avoid teaching variations. The experiment ended with the post-testing of moral development. Analysis of the data involved chi-square technique.

The following were some of the findings: (i) Instruction of honesty and responsibility was more effective for girls than boys. (ii) Boys improved on the nondeceitful behaviour by the moral instruction. (iii) A definite improvement in moral judgment was brought in by moral instruction. (iv) There was a definite improvement on the subscale of kindness by moral instruction. (v) Scores on the fair play or the democratic character improved significantly for the experimental group while not of the control group for both boys and girls taken together and separately. (vi) On the subscale of items on courtesy even to an enemy, no significant improvement was observed either in the case of the experimental or control group.

432. SHAH, J. G., *A Critical Inquiry into the Programme of Home Science Education in the Secondary Schools of India*, Ph.D. Edu., MSU, 1975.

The main objective of the study was to have a deep look into the programme of Home Science education and to propose an improved four year programme for secondary schools. The study was undertaken with the following hypotheses : (i) Adequate finance and physical facilities are the main contributing factors which are vitally correlated with the achievement in Home Science programmes. (ii) The girls are being benefited through this programme due to the facilities available from the department of education and the institutions of their own. (iii) The syllabus meets the needs of the teenagers as the individual authority is authorised to make it problem oriented. (iv) Finance, lack of physical facilities, lack of trained and experienced teachers have hindered the development of the programme of Home Science education at secondary level. (v) Like other subjects, Home Science also has its worthiness in the field of education. (vi) Being a new subject, it is continuously developing and improving.

All the secondary and higher secondary schools offering Home Science in all the states of India were taken up for the present study. The union territories, except Delhi, were not included. In this way, 594 higher secondary and 595 secondary schools formed the sample of the study. Questionnaires, observations and discussions were the main techniques for data collection. Mean and percentage were the main statistical measures used for the analysis and interpretations of the data.

Almost all the hypotheses formulated were accepted. In addition, some salient findings were as follows : There were more than one thousand multipurpose schools with Home Science wing in India. The educationists emphasised the importance of scientific knowledge in day to day affairs and recognised Home Science as a major activity in terms of work experience but it failed to achieve the goals due to academic, financial and other physical hindrances. The methods employed for Home Science teaching and evaluation were inadequate. There were reasons that the Home Science teaching was not related to the expectation. Internal assessment was impracticable mainly on account of lack of funds, facilities, and enthusiasm of both the administrators and the teachers.

433. SHAH, M. C., *The Scope, Utility and Limitations of Educational Television in India*, Ph.D. Edu., MSU, 1973.

The study aimed at gaining an understanding in-

to the planning, production and prospects of ETV, with a view to judging the scope, utility and limitations of ETV in India. It was based on assumptions as under : (i) ETV is helpful in promoting mass education particularly when student population increases rapidly in India; (ii) ETV brings experts to the rural school children to whom the services of the subject experts in mathematics, science and English are not easily available; (iii) ETV is useful for teacher education, preservice and inservice education, and professional programmes of education; (iv) ETV works effectively in eradicating illiteracy from amongst the adults.

The study was conducted in two phases : (i) a pilot survey; and (ii) the actual survey. For pilot survey, the sample included seventeen schools, four education colleges and four coordinating agencies. The actual survey was conducted employing Delhi schools as the sample, which included four nursery schools, thirty primary and middle schools, 113 higher secondary schools, four colleges of education, and eleven AIR and TV personnel. The tools used were : (i) observation; (ii) interview schedule; and (iii) questionnaires. The questionnaires were administered to the higher secondary school personnel such as principals, subject teachers, students and parents. Interview schedules were employed to study the administrative set up. Interviews were conducted with TV centre personnel such as TV teachers, producers, programme executives and the audience research officer.

The major findings were: (i) the planning for TV lessons was not taken up well in advance; (ii) the quality and quantity of programmes had remained the same for a long period; (iii) the present duration of twenty minutes for a programme seemed quite appropriate; (iv) the pamphlets and the guidance notes were not available to the subject teachers in due time; (v) the selection of TV teachers and the lesson supervisors, and the assignment of work to them was not satisfactory; (vi) the training and guidance was not provided to the TV teachers continuously; (vii) due importance was not given to the evaluation of TV programmes; (viii) the existing set allotment systems seemed to be defective as the number of sets supplied varied from school to school; (ix) the service and maintenance of TV set was not quick and efficient; (x) the TV had been confined to direct teaching and so it did not cover general knowledge or cocurricular activities; (xi) educational personnel were not involved in the planning, production and utilisation of school telecasts; and (xii) special TV courses were not offered in education colleges.



- \*434. SHARAN, P. B., *A Contrastive Study of Bhojpuri and English with Special Reference to the Teaching of English and to the Influence of Hindi on Bhojpuri Speakers*, Ph.D. Linguistics, Poona U., 1971.

The aims of the study were : (i) to locate the areas of difficulty faced by the learners of English in Bihar (especially those who speak Bhojpuri as the first language and Hindi as the regional language); and (ii) to study the Bhojpuri speakers' use of English.

The study is based on the preparation of descriptive sketches of phonology, morphology, syntax and vocabulary of Bhojpuri, Hindi and English and the contrastive studies following therefrom. In order to study Bhojpuri, Hindi, Bhojpuri English and Hindi English forms, the towns of Bihar were visited. The library was also one of the important sources of data. Descriptive and contrastive analysis of Bhojpuri, Hindi, and English were made.

The study revealed that : (i) there were number of similarities and dissimilarities among Bhojpuri, Hindi, and English; (ii) these created areas of difficulty and brought about problems of language learning for the speakers of Bhojpuri and Hindi; (iii) the affricate in English as compared to that in Bhojpuri and Hindi was an area of difficulty for the learners of English, although not a very significant one as the English affricates were different from the Hindi palatals in respect of structural features and articulation; (iv) the subjunctives posed a great problem for the Hindi or Bhojpuri learners of English because these were absolutely absent in Hindi and Bhojpuri; (v) the habit of 'drawing back' on the mother tongue accounted for another difficulty in this connection; (vi) the system of aspect caused a major problem for the English learners of Hindi or Bhojpuri origin — they usually confused between tense and aspect, moreover, the subtle difference between the present perfect and past tense in English had no parallel in Bhojpuri and Hindi; and (vii) the use of auxiliaries created another significant problem for the English language learners of Bhojpuri and Hindi origin.

435. SHASTRI, S. V., *The Teaching of English as a Second Language in Bombay with special reference to Structural Approach at Work*, Ph.D. Edu., Bom. U., 1972.

The purposes of the study were : (i) to ascertain the existing position of teaching English as a foreign language in the secondary schools in Bombay; (ii) to detect and locate the areas of students' weaknesses with regard to their knowledge of certain structures and vocabulary at the secondary school level; and (iii) to provide a basis for teaching English to the first year

college students.

The study was divided into two phases, namely, the pilot study and the final investigation. For the pilot study, a proforma for collecting data was prepared and sent to 261 secondary schools in Bombay. A supplementary survey was conducted after a period of three years with the same proforma and the same schools. The data were analysed quantitatively. The second phase started with the construction of an exploratory test in English meant to serve as a tool for collecting data. The test was first administered to forty-two Gujarati speaking students and forty Marathi speaking students, who had completed their S.S.C. course and were about to appear for the public examination. It was also administered to a batch of ninety-six students attending the practice teaching classes attached to the Summer Institute in English Language Teaching. In the light of the results obtained the test was modified and finally administered to a sample of first year arts and science college students. The sample was planned to be representative of all the three classes of first, second and pass classes on a proportional basis. The size of the sample was planned to be ten percent of the total college population. The four parts of the test constructed on the basis of the Helen Bernard's Vocabulary Test, covered 1,200 vocabulary items and 108 verb form items. The test was designed to be a test of recognition consisting of four sections. In order to analyse the data, simple frequencies, percentages, and product-moment correlations were used.

The major findings of the study were : (i) the performance of the students on the vocabulary test had a significant correlation with their performance at the S.S.C. examination; (ii) the average vocabulary of a student was 1,800 assuming the first 1,300 untested words; the range of the vocabulary was from 1,000 to 2,000; (iii) nearly a quarter of the tested vocabulary was known by sixty percent of the students; (iv) over half of the tested vocabulary was known by forty percent of the students; (v) over three quarters of the tested vocabulary was known by twenty percent of the students; (vi) out of every 100 items answered, only sixty were correct; (vii) the frequency distribution curves for all the sections — separately and put together — were skewed to the left; (viii) a closer analysis of several random scripts revealed a variety of errors which the students had committed.

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The objectives of the study were : (i) to collect

and study the active vocabulary (reproduction) of students studying in classes I to V in the age group of six to eleven years; (ii) to ascertain the range thereof; (iii) to compare the vocabulary of the urban and rural students; (iv) to study the impact of foreign languages on Gujarati; (v) to classify the wordlist of students into various parts of speech; and (vi) to compare the reproduction vocabulary of the students obtained under (i) above with the wordlists of the nationalised Gujarati Readers for standards I to V.

The sample consisted of 1100 students from both urban and rural areas. The selected students who represented different social and economic strata of society were drawn from five schools from the city of Surat and five schools from adjoining villages. Ten students each from standards I and II and thirty students each from standards III, IV, and V represented girls and boys equally. It was a survey type of research. Students of standards I and II were tested orally and students of standards III, IV, and V were asked to write answers. Questionnaire and interview were also used to collect the data.

The findings were as follows: (i) The students' writing yielded 1,11,869 running words. (ii) Of these 1973 new words used by them were enlisted. (iii) All the 1100 students used 434 words for the first time in standard I, 238 in standard II, 556 in standard III, 408 in standard IV and 337 in standard V. It was observed that the growth of the students' vocabulary was uneven. (iv) Of the total 1973 words, 1412 were nouns, thirtythree pronouns, 184 adjectives, 229 verbs, ninetyfour adverbs and twentyone participles. It was felt that students should have observed more verbs, adverbs and other participles in their active vocabulary that would have helped them in raising their expressional ability. (v) Analysing the 1973 words according to frequency it was found that no word was repeated by more than 886 students and the highest frequency of one word was 13,169. A total of eightyfive words was included in the above range, whereas 1788 words were repeated by only ten percent of the students. Of 1788 words 381 words were used only once by one student. (vi) Comparing the wordlist used by urban and rural students it was found that of the total number of 1973 words, 958 words were used by the urban students, 580 by the rural students, and 435 were common to both. (vii) English, Arabic, and Persian words had become part of the spoken vocabulary of the students as well as Gujarati community, especially in urban areas. (viii) Not much difference was found between the words used by the students from the city and the village.

\*437. *SIE (Orissa), Development of an Evaluation Form and Evaluating Effectiveness of the Experimental Textbook "Science is doing" for Class III prepared by NCERT, in the Orissa Schools, 1975. (UNICEF financed)*

The objective of the project was to evaluate the effectiveness of the experimental text book, "Science is doing" for class III prepared by the NCERT in the schools of Orissa.

The sample consisted of fifty primary schools and the teachers who taught the textbook "Science is doing", besides the supervisors. Questionnaire was used to have the opinions of the respondents on different aspects of the book. The questionnaire contained two parts: one part dealt with the physical aspects of the book, e.g., size, binding, paper, printing, type (size of the letters), colours used and the get up of the book while the other part included the aspects like suitability of content, arrangement of the chapters, experiments, illustrations, pedagogical principles implicit in the presentation, evaluative questions given at the end of each chapter, suggested homework, effect of the textbook on the blind faith and superstition of the children and on their attitudes, suitability of language used and finally the time required to teach the book.

The major findings of the study were as follows: All physical aspects of the textbook were judged to be good except the get up. The teachers suggested to eliminate some portions of the textbook as they were not suitable for the pupils of the age group 7+. A change in order of arrangement of the chapters was demanded by as many as thirtytwo teachers out of fortyseven. Some of the experiments were considered difficult for the class. In some experiments the pupils failed to reach the desired conclusions. More illustrations were required to be given in the book. However, the pictures given were all useful. The teachers demanded four periods, each of forty minutes, a week to teach the book. The extra classroom work under the caption, "Things to do at home" was found to be dissatisfactory by the teachers.

438. *SINGH, H. N., and SRIVASTAVA, I. S., Common Errors in Written English — Their Prevention and Cure, T. D. College, Jaunpur, 1960. (MOE financed)*

The purpose of the study was to develop effective remedial and preventive techniques for spelling mistakes committed by pupils, and which could easily be applied by average teachers in Indian conditions.

The study was confined to 322 pupils of class VIII of five boys' higher secondary schools of Jaun-

pur city. The half-yearly and annual examination answer books, class exercise books and the word dictation lists were used as the sources for collecting spelling mistakes. The dictation lists were selected from the word vocabulary for secondary schools suggested by Herman. The other sources employed for this purpose were a list of 2,600 words suggested by the Government Central Pedagogical Institute, Allahabad, and the General Service List edited by West. Spelling mistakes from written English were collected, lists of spellings with difficulties and hard spots expressed in percentages were prepared and the nature of misspellings obtained from written English and word dictation lists were closely scrutinized. The total number of misspellings collected was 15,856, but the actual number of words misspelt was 1,368. On an average, every word had 11.6 varieties of spellings.

The study revealed the following specific reasons responsible for a large number of errors in the fundamentals of written English : (i) pupils were drilled too soon into the use of the pattern, the significance of which they did not understand; (ii) the teacher was not aware of the point of difference between the foreign language he was teaching and the native language of the pupils; and (iii) pupils were constantly influenced by the familiar patterns of their native language which caused mistakes in the use of the foreign language.

\*439. SINGH, I. P., *A Critical Assessment of the Teaching of Punjabi in the Punjab State at the School Stage*, Ph.D. Edu., Punjabi U., 1978.

The main objectives of the study were (i) to study the status of the Punjabi teachers, (ii) to study the place of Punjabi in the school syllabi, (iii) to analyse the teaching aids and techniques used for teaching Punjabi, (iv) to study the guidance facilities provided to the teachers, and (v) to study the major problems confronting the development of Punjabi teaching in the State.

A total of 300 teachers of Punjabi language formed the sample. Questionnaires and interviews were used for collection of data. The data were analysed qualitatively.

The main findings of the study were as follows : (i) the status of the Punjabi teachers was low; (ii) the time allotted to teach Punjabi was less in terms of its importance and in comparison to other subjects; (iii) there was very little provision for use of audio-visual aids for teaching this subject; (iv) the educational administrators did not show favourable attitude towards Punjabi; (v) different objectives like development of reading, writing and oral work had not been

given proper attention; (vi) library facilities were very poor; (vii) the teachers had inferiority complex about their qualifications and pay scales; (viii) high standard students were not attracted for getting trained as Punjabi teachers; (ix) the teachers gave little attention to emotional, imaginative and creative development of the students; (x) the state department of education was not taking interest in supervision and guidance work; and (xi) standard literature in Punjabi was not available for teachers.

\*440. SINGH, U. S., *Development of a Curriculum in Science for Secondary Schools in the State of Maharashtra*, Ph.D. Edu., Bom. U., 1977.

The objectives of the study were : (i) to evaluate the present science curriculum of standard VIII in vogue from 1972; (ii) to modify the present curriculum with a view to achieving Skill Oriented Objectives of the teaching of science; and (iii) to finalise a practical and progressive science curriculum, after a try-out.

The existing science curriculum was evaluated by questionnaire and interviews. On the basis of the opinions of experienced and trained science teachers, the curriculum was modified and made more skill-oriented. Two groups of students of standard VIII of six English medium high schools in Bombay were selected for experimentation. The two groups were matched on the basis of achievement of the pupils in science in standard VII. The previous knowledge of the two groups was measured by a pretest based on the curriculum of standard VIII. The modified curriculum was taught to the experimental group and the existing curriculum was taught to the control group. After teaching both the curricula, a posttest was administered to both the groups. Significance of the difference between means was computed.

The major findings of the study were : (i) significant difference between the means of achievement in knowledge objective was found in three out of six schools; (ii) significant difference between the means of achievement in skill objective was found in all the schools; and (iii) significant difference between the means of achievement in application objective was found in five out of the six schools. The investigator concluded that the curriculum suggested was more suitable than the existing curriculum and that the existing science curriculum in force in the State needed modification.

\*441. SINHA, D. K., *Evaluation of Curricular Materials in New Mathematics*, Jad. U., 1976. (NCERT financed)

The main purpose of the investigation was to



establish some broad outlines of criteria for evaluation of curricular materials in new mathematics. Therefore, an attempt was made in this investigation to set forth in quantitative terms some yardsticks of evaluation.

In keeping with this central objective, a procedure was adopted which had essentially three phases: namely, the review of extant literature, spadework for field studies, collection of data, and analysis and interpretation of the sample. In the second phase, tryouts in schools were undertaken so as to elicit responses from students in actual classroom situations. A broad-based questionnaire was prepared and sent to schools using materials in new mathematics, particularly those under the Central Board of Secondary Education and the Council for Indian School Certificate Examinations. A sample of answers to the questionnaire from 125 schools was scanned and analysed statistically. Notions of acceptability or otherwise of topics were introduced. Statistical analyses brought out one aspect of criteria of evaluating such materials.

A quantitative analysis from statistical considerations on the basis of the questionnaire and tryouts showed that materials in new mathematics, rather on topics with a different slant, were by and large acceptable. Materials did not reflect necessarily the spirit of the so-called new mathematics; it had often been mixed up with a ritual, in the shape of rote learning of techniques.

442. SINHA, N. K., *A Survey of active vocabulary of Mundari Children, CIIL, Mysore, 1975.*

The study aimed at making a comparative assessment of the quantum of active vocabulary of Mundari children of age groups 4+, 6+, 8+, and 10+, in their mother tongue.

During the pretryout stage a questionnaire was designed so as to elicit two types of responses, one involving enumeration of items and the other involving spontaneous speech by way of narration. This was administered on twenty boys and girls. During the final tryout stage two different questionnaires were prepared, one meant for 4+ and 6+ age groups which did not involve abstract items, and the other meant for 8+ and 10+ age groups involving some abstract items also. The sample for final tryout consisted of twenty-six children in 4+ age group, twenty-four in 6+, twenty-six in 8+ and twenty in 10+. The children of 4+ age group were selected from houses and the rest from schools of twenty villages in south of Ranchi. Fifteen of those villages were inhabited by standard variety (Hasada variety) of Mundari speakers and the rest by those speaking nonstand-

ard Hasada dialect. Questions were put to the individual child, when he was alone, by the investigator who was accompanied by a school teacher to assist. After the rapport was established, information was elicited from each child in two sittings on an average, each sitting being for forty-five to sixty minutes. Each child's responses were either transcribed directly or taped.

The following were the findings of the study:

(i) The children of 4+ age group had minimum number of borrowed words from other languages, namely, Hindi and Sadani which were spoken in the villages. Their efficient control of native vocabulary without any prompting or suggestion came to about 300 words, largely nouns and verbs. There was no sexwise differentiation of vocabulary items at this stage. (ii) The children of 6+ age group had more enriched vocabulary than those of 4+ age group. Their vocabulary included certain Sadani and Hindi items, although the maximum number of Mundari words elicited was nearly 500. There was no sex difference in the vocabulary in this age group. (iii) The use of Mundari words of children of 8+ age group declined in general. There was marked difference in both the sexes. Girls retained the household words, while boys learnt professional words, mostly relating to farming. Children of this age group used a maximum of nearly 600 words in Mundari and about 100 common words in Hindi which they used very frequently. (iv) The children of 10+ age group exhibited less knowledge of Mundari words. Although they could very well speak in Mundari, Hindi and Sadani words crept in profusely. The best informant in this age could not give more than 600 Mundari words. There was no sex difference in this age group of school going children as regards vocabulary in Mundari.

443. SOCH, H. S., *An Investigation into the Basic Panjabi Vocabulary of Fifth Class Students (10+) in the State of Panjab, Ph.D. Edu., Pan. U., 1974.*

The study aimed at investigating into the basic Panjabi vocabulary of the fifth class students (10+) in the state of Panjab. The main objective was to prepare a glossary for fifth graders comprising general words of common usage distinct from specific or technical terminology.

The sample consisted of 2000 fifth grade children selected from twelve districts of Panjab on the basis of multistaged randomisation of clusters. In all 1229 words were collected from various sources wherever the child communicated. Five alternatives

were provided to each word as its meaning. These words were divided into seventeen checklists and were administered on the sample selected. Data were analysed by finding out difficulty level of words, standard error of proportion, and difficulty level corrected for chance.

The study revealed the following: (i) The values of corrected proportions ranged from 0.03 to 0.90. (ii) The split of words by difficulty level were 16 between 0.01 and 0.10, 190 between 0.11 and 0.20, 406 between 0.21 and 0.30, 344 between 0.31 and 0.40, 150 between 0.41 and 0.50, 91 between 0.51 and 0.60, 27 between 0.61 and 0.70, 5 in difficulty range of 0.71 and above.

\*444. SONAR, M. S., *An Analytical Study of the Use of Filmstrips in Teaching of Science*, Ph.D. Edu., Shi. U., 1975.

The major objectives of the present investigation were as follows: (i) to study the available filmstrips and filmstrip projectors; (ii) to locate the spots in the primary school syllabus wherein filmstrip teaching can be resorted to, either to supplement laboratory work or to revise, present new matter, and stimulate interest; (iii) to design new strips where they are not available at present and try them out in teaching with a view to watching their impact; and (iv) to draw up a plan of popularising the use of filmstrips in primary schools through various ways.

The study was mainly analytical. Filmstrips and filmstrip projectors were analytically studied with respect to design, content, utility, and correlation with primary science syllabus and textbooks. Twenty filmstrips in Marathi on general science were prepared on the basis of textbooks prescribed by the government. For evaluating the produced text filmstrips, evaluation forms were developed, and these were filled in by the teachers after seeing the filmstrips. The produced filmstrips were tried on students in standards V, VI and VII. Different filmstrip projectors were examined and their technical data also were analysed to find out their suitability for use in primary schools. An improvised filmstrip projector operating on solar energy was developed. In the analysis of syllabus and textbooks topics were isolated wherein no suitable filmstrips were available. Statistical information about primary schools, teachers and students was also analysed.

The main findings of the study were as follows: (i) Very few filmstrips produced and available at present in the country correlate with syllabus and textbooks. (ii) Filmstrips correlated with text and in regional languages help to increase the knowledge of

students. (iii) Almost all topics in general science syllabus and the textbooks can be effectively taught with the help of filmstrips. (iv) The cost of filmstrips can be largely reduced if they are produced in large quantities. (v) Systematic planning is essential in using filmstrips and filmstrip projectors in primary school teaching. (vi) The use of these instructional aids indicates the possibility of improvement in the methodology of science teaching, raising the standard of science education in primary schools, and development of taste and interest in the younger generation for the science subjects.

445. SRIVASTAVA, N. P., *Teaching Social Studies in Secondary Schools of Uttar Pradesh*, Ph.D. Edu., Luc. U., 1969.

The aims of the present study were: (i) to assess the achievements of the students of social studies in regard to developing certain democratic understandings, attitudes and abilities; and (ii) to see how far the students of social studies were superior to their counterparts who had not studied any of the subjects of social studies at all.

A stratified random sample of 1147 students was drawn from all the eight educational regions of Uttar Pradesh. From each of the regions, two cities and from each city, four schools were selected. Thus, in all, the data were taken from sixteen cities and sixty-four schools of Uttar Pradesh. The data were collected through a questionnaire and t test was applied to analyse the data.

Some of the findings were as follows: (i) teaching of civics was found to be successful in developing the understanding that a high standard of honesty and honour, a sound system of education, a sound public opinion, respect for the right of the minority, strong and independent judiciary and goodwill of the masses were necessary in democracy. It was further observed that civics supplied information to the students that democracy provided equal constitutional rights, recognised the worth of individuals and developed social sensitiveness and political consciousness; (ii) the role of geography and economics is worth mentioning in regard to developing the above stated understandings; (iii) the teaching of history could develop an awareness only towards the need of 'a high standard of honesty and honour' consciousness about the community and the need for a sound public opinion; it failed to make pupils realise that a sound system of education, respect for the right of minority, strong and independent judiciary and goodwill of the masses were of vital importance in democracy; (iv) the students of non-social studies did not know at all

any value of 'a sound system of education' and need of a strong and independent judiciary in democracy; this was true even in case of other essentials of democracy.

\*446. SRIVASTAVA, P. L., *Development of Home Science Degree Programmes in India*, Ph.D. Edu., MSU, 1976.

The objectives of the study were : (i) to record the development of home science programme in different types of institutions leading to university degrees; (ii) to study critically the administrative planning; (iii) to present a picture of factors affecting acceleration and inhibition of the growth of the discipline; (iv) to assess critically the availability of human and material resources for the successful implementation of programmes undertaken; (v) to recommend planning of programmes and suggestions for the growth and enrichment of the discipline for future.

A questionnaire was employed to collect data from all the institutions offering home science degree programme either as full fledged or as major in M.Sc. programmes. It had three sections to be answered by heads of the institution/department, heads of undergraduate programme, and heads of the postgraduate programme. An open-ended interview schedule was used for the pioneers and leaders regarding the development of home science. The programmes developed between 1942 and 1974 were arranged chronologically and were categorized on the basis of teaching arrangement and were again tabulated according to different dimensions and objectives. Percentages were calculated and growth rates were computed for enrolment, degrees and development of the discipline.

The major findings were as follows : (i) Home science degree programmes developed in different types of institutions which could be classified on the basis of teaching arrangement. (ii) Different trends were revealed in the programmes. (iii) The programmes developed earlier were looked upon as ideal and others followed them. (iv) In the development of programmes both planned and unplanned factors helped. (v) Postgraduate programmes developed after 1955. (vi) The institutions revealed problems in establishing master and doctoral programmes. (vii) It was found that higher staff positions were vacant and the institutions accorded the need of experienced and qualified senior staff. (viii) Laboratory facilities were available in all the institutions.

447. SUBRAHMANYAM, M., *A Critical Review of Grammatical Essentials required for Telugu Speaking Students at the Stage of Secondary*

*Education with a view to determine their Gradewise Standards of Correct Written Expression in Telugu*, Ph.D. Edu., Osm. U., 1974.

The main objectives of the study were : (i) to develop the ability of correct written expression in Telugu among the students studying at the stage of secondary education; (ii) to review critically the grammatical content in Telugu language from the specific point of view of its simplification of teaching; and (iii) to classify the minimum grammatical essentials for the purpose of determining the gradewise standards of the correct written expressions of the students at the secondary education stage.

The sample consisted of 210 qualified and experienced teachers teaching Telugu in classes VI to X in government, quasi government or private schools recognized by the state department of education, selected from ten districts of Andhra Pradesh. Questionnaires having 156 grammatical essentials based on the analysis of the textbooks of classes IX and X, and the review of Balvyakarana and Prowdhavyakarana were administered. Besides, the interview technique was also employed for the collection of data. For analysing the data statistically, frequency tables were arranged for all the 156 grammatical essentials with eight columns.

The major findings of the study were : (i) The total number of cases which had their fixation of grade at the level of one percent significance, was 100; (ii) the total number of cases which had their fixation of grade at the level of five percent significance, was only fifteen; (iii) considering the errors committed by the students for want of knowledge, twentyeight grammatical essentials were to be included in grade VI, thirty grammatical essentials in grade VII, thirtynine grammatical essentials in grade VIII and twentythree grammatical essentials in grade IX; (iv) competent judges, on their investigation, found that ten sutras out of eleven, which were once disputed upon and later recommended, need not be included for study at the secondary education stage; and (v) the essentials which were exclusively determined to be included in one grade, were found distributed in different grades without any order, and hence the analysis of the textbooks for classes VI to X did not help the investigator to determine the gradewise standards of the 156 essentials.

448. SUBRAMONIAM, V. I., *Further Testing and Expansion of the Cognate Method*, Dept. of Linguistics, Ker. U., 1975. (NCERT financed)

The major objectives of the study were : (i) to re-



design, improve, and test the teaching materials designed to teach adults in the intensive courses for Malayalam, Tamil, Kannada and Telugu, for school going children in the high school stage; (ii) to prepare bilingual dictionaries based on modern lexicographic principles, which could be used as reference materials by the learners (school children), on the basis of frequency of the cognate and other words; (iii) to prepare script readers for these languages with which the script could be taught more effectively by introducing the common features found in the four scripts; (iv) to prepare frequency of cognates for these languages on the bases of the newspaper language, language spoken by school children and teachers, and books meant for children; and (v) to prepare master tapes.

The sample consisted of students of grades VIII and IX with whom lessons, prepared for the purpose of investigation, were tried out. A daily newspaper was selected from each of the four languages namely, Kannada, Tamil, Telugu, and Malayalam for preparing the teaching materials. The common vocabulary items found in the four languages were collected. The phonology was prepared on the basis of the pronunciation of a native spoken of the respective languages and the news broadcast by the All India Radio for intonation patterns. Phrase, clause and sentence indices were prepared individually, their frequency of occurrence was noted and then contrasted with other languages. A questionnaire having questions regarding vocabulary and grammar with four stories for writing, four stories for oral work to be recorded on tapes, was prepared and mimeographed. Lessons were framed with a basic understanding that in the cognate method words, phonemes, grammar phrases, clauses, and sentences shared by the four languages should get preference. At the end of the course, experts from outside evaluated the attainments of the students, and also the teaching material prepared for the course.

The study revealed : (i) the cognate method was found to be useful for teaching related languages to school children; (ii) similar sets of lessons were not useful for both children and adults; and (iii) lessons for children should have less orientation in grammar, whereas for adults the lessons should contain more of grammatical details.

\*449. SUBRAMONIUM, V. I., *Pilot Project on Graded Grammars*, Dept. of Linguistics, Ker. U., 1976. (NCERT financed)

The purposes of this investigation were (i) to prepare a graded grammar in which the family rules would be collected as the basic level grammar (F.R.),

sub-set rules (S.R.) as the second level grammar, language rule (L.R.) as the third level grammar, for Malayalam, Tamil, Telugu and Kannada separately, and try them out with high school boys; (ii) to find out the frequency of each rule and note them in order to ascertain whether frequency matches with F.R., S.R. and L.R. already identified; and (iii) to test whether in language acquisition of children the innate capacity for learning language is the internalisation of the rules.

The main focus of this study was on a few aspects of the grammar, phonology, morphophonemics and morphology based on the material already collected in view of the limited time of five months. The phonemic units set up had been compared for (i) allophonic distribution, (ii) distribution in the word initial, medial and final positions, and (iii) distribution in clusters in the word initial, medial and final positions.

The major findings were as follows : (i) The common phonemes in the whole family were mostly the proto-phonemes of the family and a few of them had been introduced due to loan words from Sanskrit and English. (ii) No language phonemes were found. (iii) The sub-set phonemes were from Sanskrit loans which were heavy in Malayalam, Telugu and Kannada. (iv) The distribution of allophones in one language may exactly resemble another or partially resemble another. (v) Two sets of paradigms had been introduced in the analysis, viz., synchronic paradigms (near similar forms within the corpus of a single language) and cognate paradigms (near similar forms from the four languages). By these cognate paradigms a uniform segmentation on the four languages was possible. The confusing terminologies adopted by linguistics such as verbal participle, gerund, infinitive, adverb, etc., which were deterrent in comparison could be avoided. (vi) The cognate approach was oriented towards finding out the commonness shared by the four languages for using in teaching.

\*450. SURAKSHA, *An Experimental Study of the Effectiveness of Audio-Lingual and Cognitive-Code Methods in the Teaching of Hindi Sentence Patterns to Non-Hindi Speaking Students*, Ph.D. Edu., HPU, 1976.

The objective of the study was to examine the effectiveness of audio-lingual and cognitive-code methods with regard to different levels of intelligence and socio-economic status.

The study was conducted on a sample of 180 students of class IX following a 2 x 3 x 3 factorial design. Three factors — methods, intelligence and

socio-economic status were studied simultaneously. Eleven basic Hindi sentence patterns were developed by the investigator and were taught to non-Hindi speaking children belonging to different levels of intelligence and socio-economic status. An achievement test on these sentence patterns was prepared and validated. Gain scores of students in both the methods of teaching — audio-lingual and cognitive-code — were made the basis for advancing generalisations. The F test was used to analyse the single effects of methods, intelligence and socio-economic status, and their interaction.

The findings of the study were: (i) cognitive-code method (CCM) was more effective in the teaching of Hindi sentence patterns to non-Hindi speaking students as compared to audio-lingual method (ALM); and (ii) ALM and CCM were equally effective for low attainment at all the three levels, viz., high, average and low levels, of socio-economic status.

- \*451. UMAMAHESAN, P., *Practices and Prospects of Physical Education in the Colleges under the University of Kerala, Ph.D., Edu., Ker. U., 1976.*

The objectives of the study were: (i) to study the existing organizational, administrative and financial set up for conducting physical education; (ii) to study the current procedures and practices in physical education; (iii) to study the availability of material facilities; (iv) to study the difficulties experienced by teachers; and (v) to study the attitude of students towards physical education.

The following tools were prepared and used: (i) a questionnaire to students, (ii) a questionnaire to teachers, (iii) a questionnaire to parents, and (iv) a scale for measuring the attitudes towards physical education. Interview technique was used to collect more information from specialists in the area, administrative authorities and student athletes. Data were also collected from selected institutions through observation. The questionnaires, interviews, etc., covered 92 out of the 103 colleges affiliated to the University of Kerala. The data were analysed both qualitatively and quantitatively.

The major findings were: (i) The organizational structure of physical education in the university and the constituent colleges had a statutory board at the apex, and below it were the Directorate of Physical Education and committees for individual colleges each with its specified functions and powers. (ii) Statutory provisions had been evolved for conducting intra-mural and inter-collegiate meets. (iii) Materials and

facilities available in the different colleges were seen to vary widely from college to college. Out of the 92 colleges, 12 were identified as 'superior', 31 as 'average', 32 as 'below average', and 17 as 'inferior'. (iv) The attitude of a representative group of students and the different subgroups of the general sample was positive towards physical education. Between the subgroups the attitude of men students was significantly more favourable than that of women students. While there was no significant difference between the attitude of rural and urban students, athletes were seen to have a better attitude towards physical education as compared to non-athletes. (v) Difficulties of physical education teachers varied from lack of facilities and equipments to procedural drawbacks, lack of student initiative, etc. (vi) Difficulties of students varied from insufficiency of ground and material facilities to difficulty to catch up with portions taught in the class.

452. VERMA, V. P., *Methods and Means of Teaching Hindi, Ph.D. Edu., Bih. U., 1971.*

The present investigation was undertaken to identify the needs of children literature according to their interests, requirements and mental development and to develop curricula in Hindi for different standards in the schools. It was attempted to study the place of Hindi in the curricula of schools and to define an outline of literature for children and adolescents.

The investigator has traced elaborately the origin and development of Hindi. He has also tried to discuss the psychological bases, general principles and the new trends in Hindi teaching. In addition, qualities of textbooks and rapid reading materials, use of instructional materials, audiovisual aids and inclusion of cocurricular activities have been studied.

On the basis of this study the investigator found that curriculum occupied a very important place in the process of education. But it had not received due importance in the system of our education with regard to importance of Hindi; it was found that without proper teaching of Hindi there was no possibility of effective teaching in other subjects. It was also pointed out that the teaching of Hindi in lower classes should stress on hearing, speaking, reading and writing. In the long run the aim of language teaching should be to develop cultural and social interaction of people.

453. WANCHOO, V. N., and SHARMA, H. L., *Survey and Development of Research in Science and Mathematics Education, NCERT, New Delhi, 1974.*

The following were the objectives of the study : (i) to survey the research conducted in science and mathematics education in the country; (ii) to locate gaps and to evolve programmes for development of research in these two subjects; (iii) to coordinate the researches done in the NCERT, universities and other agencies; and (iv) to disseminate the information so as to reach the consumer and curriculum development agencies.

A questionnaire was sent to all training colleges, universities, state institutes of education and state institutes of science education to know the position of

science teaching and the researches done at M.Ed. level. The information available was classified into different areas as (i) syllabus, (ii) teaching materials, (iii) audiovisual aids, (iv) laboratories and equipment, (v) teaching methods, (vi) evaluation, (vii) inspection and supervision, (viii) preservice science teaching training, and (ix) inservice science teaching training.

The important findings were : (i) the quantum of research done at the primary level was meagre; (ii) the research work done in the area of evaluation was mostly confined to test construction; and (iii) the work done in the area of concept development was practically negligible.