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Curriculum, Methods and Textbooks

A Trend Report

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INTRODUCTION

Indian education has been characterised by rigidity in all aspects—organisational rigidity, rigidity in the curriculum, textbooks, teaching methods, etc. The school curriculum in India has not changed for years together even after independence. This has been so inspite of the suggestions put forward by various commissions and committees at national and state levels for radically changing the curriculum. It is true that most of the suggestions were of a broad and general nature, even then the suggestions could not be translated into action within a reasonable time. The time lag in developing and implementing a new curriculum has been to the tune of about fifteen years in some of the states.

The second feature of curriculum development in India is that it is not based on empirical research findings. With the dawn of independence, the need for a central agency to undertake research in the area of curriculum was felt. The National Institute of Basic Education engaged itself in research in the curriculum of Basic schools. The All India Council for Secondary Education initiated efforts in developing a new curriculum at the secondary stage. The Central Bureau of Textbook Research was established to undertake research in the area of textbooks. The National Institute of Basic Education undertook some commendable studies in the area of curriculum of Basic schools. The Central Bureau of Textbooks developed criteria for evaluation of textbooks and the All India Council for Secondary Education gave a model syllabus for higher secondary education. However, no programme of sustained and long term research in curriculum was drawn out by any of these institutions. In the states no agency existed for undertaking research in the area of curriculum with the exception of bureau of curriculum research in a couple of states. If research in curriculum did not exist, equally absent was research in the area of textbooks. Research in curriculum got some impetus with the establishment of National Council of Educational Research and Training (NCERT) with which the Central Bureau of Textbook Research and National Institute of Basic Education were merged. In the course of a couple of years of establishment of the NCERT, the Department of Curriculum, Methods and Textbooks was established. The NCERT undertook studies about allocation of time to various subjects at school stage, improving the methods of teaching and developing new textbooks. A major developmental research project was undertaken through its department of science to develop a new curriculum for science at the middle school stage with the assistance of UNESCO in the first stage and development of science curriculum at the primary stage with the assistance of UNICEF. The NCERT presented a model approach to curriculum development to all agencies concerned with research in curriculum in the country. During late sixties, with the efforts of the Ministry of Education, State Boards of School Textbooks came into existence. Each board accepted curriculum and textbook research as one of its objectives. If the curriculum development has not been based on empirical research findings in India, it can be said that necessary organisational and administrative structure has been created to achieve the same.

IN RETROSPECT

Behavioural Science Research in India, a Directory, 1925-65 (1966) and Directory of Indian Behavioural Science Research (1971), both compiled by Pareek, gave a more or less exhaustive list of titles of published as well as unpublished Indian researches in this field. The NCERT (1966 and 1968) published the titles of Ph.D. theses in education and M.Ed. dissertations or theses completed 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 Ph.D. level. The present report is based on studies at Ph. D. level and also research projects undertaken at institutional levels. In all sixty-nine studies are divided into two broad categories—Ph.D. theses and projects.

All the Ph.D. theses are in education except one which is in sociology. 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:

1. General Curriculum
2. Languages in general
3. English in particular
4. Vocabulary
5. Mathematics and Science
6. Social Studies
7. Textbooks

METHODOLOGY

In research work the importance of methodology can hardly be underestimated. It is the proper methodology that gives weight to the research findings. It may be noted that educational research in India is gradually adopting scientific methodology. The studies under review show that experimental designs with rigorous statistical analysis, although not a rarity, are conspicuous by their lesser number. The tools used and techniuqes adopted vary from simple observation and study of records to administration of sophisticated tests. Some of the important tests used in these investigations are : 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 Letter Recognition Test, the Word Recognition Test, the Edward Fry Test and the Algebraic Concept Test. Quite a large portion of the studies are survey type with one field study and two opinion surveys. Questionnaire technique is very often used. Control and experimental groups method is also sometime taken recourse to. As many as fifteen studies are more or less experimental, while only two studies are based on the use of sophisticated experimental design and statistical analysis. There are two longitudinal studies, but quite a few of the studies try 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 adopted. The size of the sample varies from a couple of hundred to a few thousand. In major cases, the samples have been taken from the urban areas. In as many as twelve cases, statewise studies have been made, whereas only in four cases all India studies (in a very limited fashion) have been conducted. By themselves, the studies on languages and vocabulary comprise a separate category in respect of methodology. These studies adopted different linguistic methods suited to the purpose. 'The research worker cannot learn too early that even the best statistical techniques are unable to make bad data yield valid results.' The major portion of the studies under review are correlational.

General Curriculum :

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, Chanana (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. In a useful study, Pillai (1968) investigated into the changes in the content and scope of the primary and secondary school curriculum in Kerala during the last thirty years since 1934.

In the above three studies, broader aspect of curriculum was dealt with. To see the curriculum with a narrower range is no less important. 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, while Vasantha (1972) investigated into the work values of students in relation to their intelligence, achievement and socio-economic status. Research Wing of Bombay

Municipal Corporation made two experiments (1955--57 and 1969). In one it studied the effect of child-centred teaching practices 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.

Our curriculum is criticised for being too bookish. It has very little scope for physical education, crafts and various cocurricular activities. Four studies drew attention in this respect. Daisy (1963) analysed the need for physical education for girls in India, Agarkar (1947) recommended introduction of folk dance in the school curriculum as a means of physical education, Chaturvedi (1957) discussed the role of craft as a medium of education in elementary schools, and Pani (1969) found that participation and achievement of pupils in cocurricular activities are intimately associated with the personal development of the pupils.

Keeping in view the urgent need of reorientation of the present school curriculum, Prasad (1970) pleaded that the best wealth of folk culture and folk literature should be fitted into it.

Languages in General :

Studies on Indian languages in general have assumed added importance in the context of need for emotional and national integration. The three language formula, although in force in the schools, has raised doubt about its validity in the minds of educators. Chaturvedi and Mohale (1972) assessed the position with regard to the study of different languages at different stages of school education in India. They significantly found that time allotted for language teaching and learning is more than forty percent of the total time in school time-table. Modi (1966) made a comparative study of English and Gujarati syntaxes. Jagannathan (1969) collected Hindi and Tamil words having same source but differing in meaning, and analysed their nature. Vishwamitra (1969) compared Hindi and Telugu phonetic sounds. The above comparative studies of different Indian languages would help language teaching.

A group of three studies dealt with different aspects of Marathi language. Patankar (1964) attempted to evaluate improved methods of teaching Marathi and developed new textbooks, Dongre (1968) investigated into the functions of some Marathi auxiliary verbs, and Sawant (1970) studied composition teaching in Marathi in its different aspects.

Language communication is a problem that has always attracted the attention of researchers. Research Wing of Bombay Municipal Corporation (1970) sought to improve and develop spoken and written language of the children and establish in them firm habits of language communication. Javli (1949) made an experimental study in teaching beginners to read Kannada. Hindi, the Indian lingua franca, as spoken in different areas in different ways. In order to arrive at a norm of Hindi sounds, Chaturvedi (1972) surveyed the Hindi speech sounds in different Hindi speaking areas.

English in Particular :

There is no denying the fact that English 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 not, therefore, outlived its life. A group of studies have focussed attention on different aspects of learning English language. 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 measure. 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. And, 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 present curriculum. Looking to the needs of the time, he found that position of English in the curriculum should be kept as it is. Theodore (1957) attempted an objective assessment of appreciation of English poetry by intermediate and pre-university students.

A second group of studies centred round different aspects of teaching English. 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. Nagarajan (1970), after comparing under experimental conditions, found that the bilingual method is superior to the direct method in teaching English. A similar

experiment but with a different sample led Murthy (1968) to the same conclusion. Shukla (1968) examined the problems involved in the process of translation and the implication of its use as a teaching device. George (1966) enquired into the scope and effectiveness of audio-visual instruction in improving English teaching. He found that the achievement of pupils taught by using audio-visual aids is greater than that of pupils taught by usual methods and that the use of audio-visual aids does not require more time than what is required for ordinary teaching.

Vocabulary :

Studies on vocabulary comprised one-fourth of the total number of studies under review. Vocabulary is the first step in learning a language. Research on vocabulary is therefore of fundamental importance with regard to curriculum and instruction.

Basic vocabulary of children was studied in Hindi by Rukmani Ramchandra (1960), in Kannada by Chandrasekhariah (1964), in Marathi by Tamhane (1965) and functional vocabulary of pre-school age children was studied by Arunajatai and Srinivasachari (1968). Basic Hindi vocabulary in Haryana was studied in the case of children of class IV by Sharma (1972) and class VI by Shanker (1971). Basic Gujarati vocabulary was studied in the case of children of eleven plus by Vakil (1955), of twelve plus by Raval (1959), of thirteen plus by Lakdawala (1960). Pasricha and Das(1959) studied the written vocabulary of children of class VI. Keskar (1972) produced a 3500 word vocabulary for teaching of English in Indian schools. Recognition vocabulary was studied in the case of PUC students by Bernard (1966) and third year degree students by Chadda (1971).

Reading is one of the essential skills of the learner. Skill in reading is intrinsically connected with vocabulary. That is why a group of three studies centred round different aspects of reading. Narayanaswamy (1969) investigated into reading comprehension at college level, Ansuya (1970) found that reading efficiency, speed and comprehension were related to student performance and Rahman (1959) sought to locate means of encouraging reading for pleasure.

With the attainment of vocabulary comes the problem of supplying books to the children according to their psychological and linguistic needs. With an eye to this problem, Mishra (1972) tried to assess if the juvenile literature of Hindi fulfilled this objective.

Mathematics and Science :

Mathematics and science are related areas. The number of studies in this section was merely ten amongst which five studies were on mathematics, four on science and one on home science.

A group of three studies surveyed the mathematics curriculum emphasising teaching of the subject in secondary schools. 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. Back-dated 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 enumerated. In a similar study, Samant (1944) found that poor teaching method caused the students dislike the subject. Rearranging the topics with definite aims, 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. Components of the mathematics curriculum were dealt with in two studies. Joshi (1970) objectively studied the development of algebraic concept in pupils at the junior secondary stage. Gupta (1972) attempted to provide a standardised tool to diagnose the weak areas in mathematics and basic arithmetic skills.

Three studies concerned themselves 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 teachnig 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. The suggested course in general science consisted of ten units each of which represented some major problem of living, a wide area of human experience or an important aspect of environment.

In only one study on home science, Deulkar (1967) evaluated home science curriculum with special reference to its functional implementation and the

personal and professional satisfaction of the students.

Social Studies :

Although the facts of history and geography have their place in social studies, yet social studies is not merely a combination of these two subjects as is sometimes popularly misconceived. Rather, social studies is growing as a new discipline of human relations. This new aspect of the subject has not yet been paid adequate attention in the field of research. A group of three studies has 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 the important current events. Narayanaswami (1960) made an enquiry into teaching of social studies in schools in the context of introducing social studies as a single subject instead of as separate disciplines like geography, history, etc. Inadequacy of books and other teaching aids, lack of social studies laboratories and well-equipped teachers, lack of use of audio-visual aids and inadequate evaluation measures were some of the major drawbacks he found. Khushdil (1960) compared the integrated and the traditional methods of aproach in teaching social studies and found that in respect of assimilation and acquisition of knowledge the former was better than the latter.

Two studies related to teaching and learning of geography are reported here. In the study by GCPI (1963), areas of difficulty in the field of geographical concepts were identified. As a remedial measure, emphasis on the practical side of teaching the subject was suggested. D'Souza (1971) experimentally compared the teaching of geography by systematic method, i.e. taking the whole country as the geographic unit with the regional method, i.e. taking a particular region of the country as the unit. The investigator found the regional method to be superior, the variable of school not being statistically significant.

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

Textbooks :

A crash programme to evaluate all the available 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. The study on textbooks under review was done by the Department of Textbooks, NCERT (1970-72). In all, 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 were completed during 1970-72.

NEEDED RESEARCH

Research in curriculum and instruction deserves more attention than it has received so far. The school curriculum is in a state of continuous change all over the world today. Even in the advanced countries of the world it is criticised as being inadequate, outmoded and not properly designed to meet the needs of modern society. Against the background of striking curricular developments in those countries, the school curriculum in India is narrowly conceived and largely out of date. This curriculum places undue weight on bookish knowledge and rote learning. As the development of useful skills and right kind of interests, attitudes and values is not properly emphasised, the curriculum becomes not only out of step with modern knowledge, but also out of tune with the life of the people. There is, thus, an urgent need to raise, upgrade and improve it. And to do this, more and more significant items 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. It is exactly here that educational research in India has to play an imperative role.

When we look into the studies under review from this angle of vision, quantity and quality of them 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 centred round the surface problems, and that too, covering the middle and secondary school stages only. 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 of 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. In a word, no approach was made towards a consistent theory of teaching. Another most significant fact about these studies under review was that quite a large number of them was not grounded on sound methodology. The limited scope of their sampling restricted, to a great extent, the validity of their generalisations.

The foregoing resume has brought into sharper relief some features of research on curriculum to which the educational technologists have to pay increasing attention in the coming years. For the development of a scientific curriculum, modern experts are focussing attention on such aspects of curriculum and instruction as needs, individual differences, child growth and development, classroom interaction, social structure, etc. An example will, perhaps, make the problem clear. We know that India is wedded to the idea of establishment of a socialistic pattern of society. Now, to the curriculum researchers, the problem is how to break up this broad concept into suitable behaviour patterns that could be the objectives at different stages of curricular development. In a similar way, every school subject awaits a breakdown in terms of its peculiar concepts and methods, and then their grading according to the age and attainment of the pupils. Changes needed in curriculum at different stages, growth of curriculum at different stages, resistance to curricular change, and the problem of implementation of the renovated or reoriented curriculum are also some of the areas which the Indian researchers in education should undertake to investigate on a priority basis. It is essential to mention that this has to be worked out as a well coordinated programme of improvement on the basis of valid research findings instead of being rushed through haphazardly and in a piecemeal and ad hoc fashion as has been done so far.

If research in the area of curriculum is to point out the lines that future developments in education should take, the selection of topics and subjects as well as specification of areas for research has a significant role to play. The school curriculum in India is in a state of continuous change and innovations are entering the field of education. Against the background of these curricular developments in the advanced countries the school curriculum in India is narrowly conceived; therefore, it is urgently needed that fundamental research should be emphasised and executed to provide empirical foundations to curricular changes. The research areas may include: (i) bases of curriculum on which the extent is to be reared; (ii) components of curriculum in different subject areas; (iii) exploratory studies in the area of growth of curriculum; (iv) barriers to curriculum change; (v) case studies of specific problems in relation to particular subject field; (vi) analytical studies on Indian languages; (vii) teaching of reading and writing; and (viii) teacher involvement in curricular change.

Along with the areas cited above, comprehensive statewise studies and studies on change in curriculum and art of innovations in curriculum may be thought of. Experimental studies in the area of methods of teaching and surveys of historical approaches of teaching also demand the attention of the researchers. Content analysis of textbooks at different levels, viz., their publication require exploration and are urgently needed. Textbook writing, editing and publication of textbooks require exploration and sustained research. Research in the area of vocabulary will provide needed information to textbook writers for writing books for different age groups. It may well be concluded that researchers in above areas may provide needed guide-lines in planning, analysing content of curriculum, developing techniques and tools of teaching, writing and publication of textbooks.

ABSTRACTS : 311-379

311. AGARKAR, A.J., Folk Dance and Physical Education (with special reference to Maharashtra), Ph.D. Soc., Bom.U., 1947.

The study aimed at finding out folk dances of Maharashtra that could be introduced in the school curriculum as a means of physical education.

A detailed study of the various aspects of folk dance of Maharashtra was made. The various aspects were the occasion of dancing, movements and formations, dress and accompaniment, music, songs and notations, dancing in early societies, dance and culture.

The observations made were : (i) group dance suits both the boys and girls and hence overcomes the trouble of training in physical education in co-educational institutions; (ii) this can give rise to better social intercourse; (iii) the wide range of movements of folk dances can be utilised as an aesthetically satisfying and interesting form of physical exercise; (iv) the folk dance combination should be preferred from the point of view of such neuro-muscular movements being old and fitted with man's expressive life; and (v) folk dance is psychologically sound as it is recreational and joyful activity.

312. ANSUYA, R., The Improvement of Reading Efficiency at the P.U.C. level, Central Institute of English and Foreign Languages, Hyderabad, 1970.

The main aim of this project was to establish criteria for the improvement of reading efficiency of the preuniversity students. The hypothesis was that the reading efficiency which consists of speed and comprehension is related to the students' performance.

The sample consisted of five groups of 400 students of class XII, higher secondary, preuniversity and junior intermediate levels.

The students' vocabulary and reading efficiency were tested and their weaknesses were diagnosed. These students were then given some topics to read. These included: (i) the value of reading; (ii) the elements of reading skill and improvement; and (iii) common faults in reading and their elimination. The students were then given some exercises constructed for the improvement of reading efficiency. After administering the standard tests, the final tests in reading efficiency were administered. One group technique was used, i.e. a group of pupils was given equivalent forms of standard reading tests (The Edward Fry Test) in succession. The score of reading efficiency was computed by multiplying the rate (words per minute) by the comprehension score (the percentage of correct answers on the tested material).

The major findings were as follows. After having made a sharp increase in the reading rates, the students seemed to comprehend less for a short interval. However, with continued practice the comprehension skill was regained at a higher rate. At the end of the experiment it was found that the reading efficiency of all the groups had increased from 48 words to 270 words per minute. Concrete improvement can be achieved in the reading efficiency of students by adopting suitable methods. A spread-over simultaneous training during the course of factual study was given to the class XII students. The improvement was very high in the case of bright students, considerable in the case of average and satisfactory in the case of backward students. An intensive training of about six weeks, by way of reorientation before the students actually began their studies, was given to the students in the second experiment. This method was also found quite effective. Both the methods required almost the same amount of time. Considering the dearth of trained personnel, the intensive course method may be preferred, as various groups of students can be trained simultaneously.

For building up a successful reading programme and for organising it, care should be taken that previous experience of the students and level of their mental development are taken into account. Pupils should be allowed to pass through a series of stages of progress in becoming good readers.

313. ARUNAJATAI, V., and SRINIVASACHARI G., Functional Vocabulary of Pre-School Children, The S.I.T.U. Council of Educational Research, Madras, 1968.

The purpose was to study the functional vocabulary of children of age group four to seven, so as to develop quickly the abilities of children to read and write.

Four supervisors and thirty trained observers collected data relating to the thought and language of about 700 children of thirty to sixty months. The words listed related to children's most vital experiences and activities. Seventy study sheets chosen at random and tape-recorded speeches of seventyfour children were used to supplement the interim report.

It was revealed that four hundred and twenty-five new words appeared in the fresh study sheets mainly because varied situations were utilised to stimulate the children. In the entire study, the functional vocabulary of pre-school age Tamil children ranged from 1500 to 2000 words. Non-school going children had a significantly higher mean than school going children. In the age group fortyeight to sixty months, the vocabulary range of the girls was considerably higher than the boys. Children had considerable command of terminations of three persons and singular and plural, and used them in ordinary speech. They were capable of using basic sentence patterns and about fifty percent of them were capable of constructing simple complex sentences. The mean number of words used in a sentence was 3.7 and the mean number of syllables was 9.7. The average vocabulary of children of comparatively low socio-economic level, except in the first age group, was higher than that of children of the upper income groups. The average vocabulary of the majority of children with brothers and/or sisters was higher than that of single children; the difference was not significant. Nearly 39.5 percent of speeches could be classed as ego-centric and 60.5 percent as socialised speech. They compared favourably with American and English children of the same age.

314. BERNARD, H., A Test of P.U.C. Students' Vocabulary in Chhotanagpur, Central Institute of English and Foreign Languages, Hyderabad, 1966.

The project aimed at getting a detailed picture of the English reading vocabulary of P.U.C. and final year of secondary school students in Chhotanagpur area. It was hypothesised that the results of this project would form the first step towards a comparative study of P. U. C. students' recognition vocabulary in Hindi speaking areas and in India as a whole.

The tested vocabulary consisted of 1500 words from the General Service List by Michael West together with 100 words from the Central Institute's P.U.C. Vocabulary which was compiled from current textbooks. The basic item of the test was a structurally simple sentence containing one underlined word for translation into the student's mother tongue. There were 1600 such sentences divided into four main sections A, B, C and D. Each section was again, divided into two parts. Each part of the test represented a single sitting of about two and a half hours duration. The students answered two sections in two separate sittings. Tests were held in Ranchi women's college and St. Xavier's college.There were 1253 Hindi scripts, out of which 233 were prepared by women and the rest by men. The sample consisted of mainly arts students, a few commerce students and a small group of science students (about 40) in the women's college.

The major findings indicate : (i) the average recognition vocabulary of the students in the area, (ii) the familiarity status of each word on the tested list in the Chhotanagpur students' vocabulary; (iii) the strength and weakness of the students in different subject categories of vocabulary; and (iv) the strength and weakness of the students in grammatical categories — verbs, nouns, adjectives, etc.

315. BOMBAY MUNICIPAL CORPORATION, Experiments in Standard I Teaching—A Study of the Effect of Child-Centred Teaching Practices and Correlated Play Activities on the Quality of Attainment, Attendance and Discipline in Standard I, Primary Education Department, 1957.

Educational surveys in different localities in Greater Bombay have consistently shown that the incidence of dropping out from school is highest in standard I, and that on an average the daily attendance in this class is the lowest compared to that in the other classes. Consequent wastage is staggering. For this reason it was decided to study in minute detail how to hold the interest and attention of the six year olds and how to improve the quality of education in standard I.

Experiments in teaching method based on purposeful practical work and active participation of children were conducted in two divisions of standard I in the Dongri Lower Primary School for a period of two years. Day to day teaching was planned out and teaching aids were used for group activities. Play activities related to academic subject matter formed a special feature of the programme. The total sample consisted of ninetyone children. Four main aspects were observed, viz., (i) educational attainment; (ii) regular attendance; (iii) general tone and discipline; and (iv) cooperation with the group. A comparative study of the effect of psychological teaching methods and planned programme of work on the educational attainment—both quantitative and qualitative, discipline, reading habits and regular attendance of children in the experimental classes and a more or less equivalent group of children in two other divisions of standard I of the same school working under ordinary condition was made. Sample for the final experiment consisted of 128 students.

The findings of the study were : (i) the controlled group was found to be not only superior in educational attainment to the uncontrolled group but also to the children in the experimental group. As a result of this, the average attendance went up considerably, and very few dropouts were recorded; (ii) out of the 128 children who were on roll in three divisions in standard I under experiment, 116 children who attended school regularly were found to have completed the course satisfactorily; (iii) it was found that 38, i.e., about 30 percent, could be granted a double promotion due to the fact of having not only successfully completed the standard I course, but also covered the course of standard II and this was ascertained by the inspecting officer after having carefully inspected the progress of these children; (iv) even in a backward area like Dongri, children who were more or less regular were able to complete the academic course without any undue strain when the instruction was well planned, the environment was enjoyable, and sufficient play activities were introduced; (v) the present curriculum is not at all heavy and children with average ability can easily complete the course satisfactorily without doing any work at home; (vi) in this particular school, it was noticed during the past ten years that about 20 to 30 percent of the children failed to return to school after the recess hours, but it was noticed that hardly any child remained away after recess during the two years of the experiment; (vii) the average attendance went upto 90 percent; (viii) the tone and discipline in the experimental group was appreciably superior and the children in the experimental group were found to be aware of their social responsibilities; and(ix) the experiment may be said to have instilled in these children a feeling of consideration for the others, which is the basis of good citizenship, from very early age.

316. *BOMBAY MUNICIPAL CORPORATION, Ungraded Unit Experiment, Primary Education Department, 1969.*

The experiment was prompted by the need of convenient yet scientific and appropriate method of dealing effectively with failures and underachievers in different school subjects. Since the lag in the educational achievement of children who fail is generally not more than six months, instead of keeping them back for the repetition of the same class, they were to be streamed for teaching in groups, in which they were required to complete the lag in their standards. The purpose of the study was thus defined to reduce incidence of stagnation and raise the standard of achievement in municipal schools.

In standard I, percentage of children who passed, who were promoted or who made up the lag was found to be 75.21 and 14.98 percent was asked to repeat the standard. About 9.81 percent students did not appear for the examination. In standard II these percentages were 78.53, 12.94 and 8.53, respectively. In standard III the percentages were 82.85, 12.70 and 4.45 respectively. In standard IV these percentages were 84.29, 12.40 and 3.31 respectively.

317. *BOMBAY MUNICIPAL CORPORATION, Language Development Project, Standards III and IV, Primary Education Department, 1970.*

The objective of this investigation was to improve and develop spoken and written language and establish in children firm habits of language communication. As many as 432 and 564 children from standards III and IV, respectively, were placed in the experimental group and 468 and 427 children in the control group. In both standards, the experimental group of children were given carefully planned teaching programme. Special attention was given to the sentence formation, writing, reading aloud in the classroom and library reading. Children were tested periodically to find the level of improvement. Children in the control group were taught in the usual way.

The evaluation conducted at the end of the experiment showed that 57.79 and 25.08 percent of children of standard III and IV, respectively, obtained marks which were above 40 percent as compared to 23.22 and 23.26 percent obtained by the control group. Moreover, an opinion survey of teachers and headmasters of the experimental school revealed that children, particularly younger ones showed marked improvement in speech, conversation, writing and answering questions in the classroom.

318. *CHADDA, U., An Investigation into the Vocabulary Resources of Third-Year Degree Students, Central Institute of English and Foreign Languages, Hyderabad, 1971.*

The main purpose of the study was to investigate the vocabulary resources and to evaluate scientifically the range of recognition vocabulary of the third year degree students.

The study was conducted in five constituent and five affiliated colleges—four women's, three men's and three coeducational.

The important findings were: (i) the highest score on the test is 282 and the lowest is 10, out of 300; (ii) the total average score is 52.2 percent; (iii) the average score of the science students is 54.1 percent whereas that of the arts students is 48.3 percent; (iv) the average score of the female students is slightly higher than that of the male students—53.1 percent for females and 50.7 percent for males; (v) the total of mean score on all the three forms is 156.21; (vi) the reliability of the tests is .90; (vii) the performance of the students at the preuniversity examination correlated with the performance in the vocabulary test, indicating thereby that a good vocabulary is an index of general intelligence and knowledge; (viii) there are less number of grammar and construction errors of the students who scored high on the vocabulary test whereas those scoring low are unable to express themselves correctly or idiomatically.

319. CHANANA, P. S., A Critical Study of the Development of the High School Curriculum in the Punjab during the Twentieth Century, Ph.D. Edu., Pan. U., 1967.

This study inquires into the development of the high school curriculum in the Punjab during the twentieth century.

The author makes the following observations. With the inception of British administration in the Punjab after its annexation in 1849, there was a spontaneous enthusiasm for English education. Incentive to this was provided by the acceptance of the scheme of studies for the entrance examination of Calcutta University. The anxiety was felt on the part of the government to diffuse European knowledge among the people and keenness for better social status and employment under the new regime. In consequence thereof, by 1869 the high school was a well defined institution in the Punjab.

The college, established in Lahore in 1870 was converted into a full fledged university in 1882 and the high school was given wider and better curriculum. At the close of nineteenth century the Panjab University had approved a large number of courses with wide scope for choice that a high school student could have in India. There was provision for English, several classical and modern languages, mathematics, history and geography, physics and chemistry, botany and zoology, agriculture, drawing and commercial courses of shorthand, accountancy, book-keeping and correspondence. It was an undifferentiated curriculum drawn on the pattern of London Matriculation.

Lord Curzon's drive for qualitative improvement of education in the beginning of the present century had little impact on the high school curriculum in the Punjab. Tied to the apron strings of the university, the high school continued to serve the college preparatory functions and the requirements of subordinate services in the state. It had no vocational bias and was dominated by English.

The period after the first world war witnessed in the Punjab, an intellectual discontent with the traditional system of education. The unemployment among the educated and consciousness of the national pride led to the condemnation of narrow and transplanted curriculum. The National Education Movement inspired by the non-cooperation movement highlighted the weaknesses of the educational system and forced the government to admit that the discontent was genuine and that the content of education must change in harmony with the changes in the social environment.

A survey of secondary education undertaken in 1923 at the instance of popular Ministry in the Punjab revealed many weaknesses. The difficulties created by the merger of alternative courses of the high school in 1919 were referred to the school board of the university, but the procedural bottlenecks and general apathy to change delayed reforms for quite long. The twenties, however, saw the widening of the curriculum through the provision for extra-classroom activities and the introduction of the subjects of arithmetic and domestic economy, and civics and hygiene in 1927 and household accounts for girls in 1935. By this time, the process of spelling out contents of subjects, started in 1906, was completed.

In forties of this century, there was a growing realisation of the need for modernising the curriculum of the high school. The changes contemplated in Britain's schools and conditions in India favoured changes in the high school programme, but the second world war and the political unrest in the country distracted the attention. Even recommendations of the reports of Abbot and Wood (1936) and the Central Advisory Board of Education (1944) were only thought of and not implemented.

The indifference on the part of the Britishers to vocationalising secondary education was in conformity with the tradition in their own country of keeping secondary schools as schools for general education. While the intelligentsia thought the vocationalisation of secondary education would lead to

the creation of more work for employment and less dependence on soft collared jobs, the general mass of people felt contented by giving their children the prevalent high school education for its social value and probable changes of employment. Emphasis upon English contrary to the advice of English and Indian educationists, neglect of the mother tongue and modern Indian languages, overcrowding of ill-defined contents of subjects, remoteness of studies from the social and economic circumstances, national outlook and aspirations on one hand, the nature and problems of the adolescents on the other, narrowed down the nature and scope of the high school curriculum in the Punjab and made it ineffective and traditional subject-centred. The curriculum created among teachers an attitude of resistance to challenging learning experiences. The stereotyped training of teachers, the aversion of authorities to associate teachers in the task of framing curriculum, the helplessness of the spirited few at all levels of the hierarchy for qualitative improvement in the face of the persistent demand for more and more education, the rigidities, oddities and absurdities of the centralised administration of education, and the inability of the masses to judge the quality of education further worsened the situation. The lag between the life of the people and the school widened with time.

The School Board of the University, set up in 1920 to advise and guide in matters relating to the high school curriculum and examination, functioned perfunctorily. On account of its faulty composition and character and its limited powers, it was incapable of giving serious thought to the vital work of curriculum construction and system of the matriculation examination. The high school remained hitched to the wagon of the university which was primarily concerned with higher education.

Inspite of the difficulties created by the partition of the Punjab, things went sooner than expected. The schemes for the curriculum improvement devised in the state were, however, shelved with the publication of the Secondary Education Commission Report intended to give a national plan of secondary education. The ambitious scheme of multipurpose higher secondary schools was launched in the Punjab in 1958. The attempt to supplant the high school by the multipurpose higher secondary school, with its seven streams, has not succeeded, and the dissipation of resources has delayed the improvement of the high school curriculum. Reaction against past lapses and enthusiasm for change, by themselves were not enough for ushering in a new era.

320. CHANDRASEKHARIAH, B. K., An Investigation into the Basic Vocabulary (in Kannada) of Elementary School Children of Standards I to VII of Mysore State, Educational Research Bureau, Bangalore, 1964. (NCERT financed)

The objective was to prepare a comprehensive basic graded vocabulary of about 4,000 to 5,000 words which could be understood by children in all parts of the state and which could be used as the basis for all reading programmes and the production of reading materials for children of primary standards I to VII in Mysore State.

A preliminary list of 5,757 words was prepared from different sources such as: (i) departmental readers, I to VII; (ii) word list published by the Adult Education Council, Mysore; (iii) word list published by V. K. Javli; (iv) word list published by the Mysore Education Federation; (v) word list prepared by Sahitya Rachanalaya trainees; and (vi) miscellaneous. Two hundred primary school teachers, males and females, from urban, rural and slum areas were selected for judging the selection and grade-placement of words in the preliminary list. They included ten teachers from each of the twenty districts in the state.

After the analysis of the grade-placement of the words, 5,000 words were selected to prepare the comprehensive basic graded vocabulary. The allocation of the words in each standard was as follows: standards I, II, III, and VI, 700 words each, standard IV 750 words, standard V 800 words, and standard VII 650 words.

321. CHATURVEDI, M. G., Linguistic Analysis and Description of the Phonological Variations in Standard Hindi, NCERT, New Delhi, 1972.

Objectives of the study were: (i) to survey the Hindi speech sounds in the Hindi speaking areas, (ii) to study the divergent pronunciations of Hindi speech sounds, (iii) to arrive at the norm of standard Hindi sounds and sound-features, i.e., segmental phonemes of standard Hindi, (iv) to describe the segmental phonemes of standard Hindi alongwith their allophonic and dialectal variations, and (v) to arrive at the phonological structure of standard Hindi.

The general standard form of phonology of Khariboli based standard Hindi as spoken by the people of Hindi speaking area, educated atleast upto higher secondary level who were using it in their public life, was examined. Sixty educated persons belonging to and staying in the centres of nineteen

major dialects of Hindi and three informants speaking standard Hindi, i.e. Hindi, Urdu and Hindustani without having any of its dialects as base speech provided the data which were of two types, i.e. the controlled sample and free sample of the language—the controlled sample included 1,000 items of word utterances and 100 items of complete utterances and the free sample included the informal talks of the informants for three to five minutes.

Phonology of standard Hindi was thus studied and dialectal variations as available in the speech of educated people of Hindi speaking area were described. The standard spoken Hindi was found to have segmental phonemes, viz., vowels, nasalization and consonants. Besides the description of the phonemes of Hindi, their allophonic and dialectal variation as available in different dialectal regions of Hindi speaking areas have also been described on the basis of which instructional material for teaching spoken Hindi can be developed on scientific lines.

322. *CHATURVEDI, M. G., and MOHALE, B. V., A Study of the Position of Language in School Curriculum in India, NCERT, New Delhi, 1972.*

The main purpose of the study was to assess the position with regard to the study of different languages, at different stages of school education, in the states and union territories of India in terms of (i) language families to which they belong; (ii) the status (compulsory or optional) of the languages being studied at different stages in different states; (iii) the weightage assigned to different languages in the total instructional programme of curriculum as revealed by instructional time allocation and marks in the examination; and (iv) the stage when second, third and the classical languages are introduced. Information related to the problem was collected through questionnaire, by personal contacts with the education departments, and through other agencies dealing with school education.

The study revealed that there are more than fifty languages taught at schools in different parts of the country and they belong to five major language families of the world, i.e. Indo-European, Dravidian, Austric, Sino-Tibetan and Semetic. The languages taught in schools may be categorised into four groups i.e. modern Indian languages, modern foreign languages, Indian classical languages and foreign classical languages. Modern Indian languages can further be divided into standard literary or official language and nonliterary or nonofficial languages. Literary language is taught as first or second language and is also used as a medium of instruction. Nonliterary language is taught as mother tongue and used as a medium of instruction in first few years of school education in tribal regions only. Modern foreign languages are taught as second language—foreign language. Indian classical languages are taught as classical languages—as second language. Foreign classical languages are taught with Indian languages. The number of languages taught and used as media of instruction at primary stage is larger than those available at middle or secondary stages. Although in each state and union territory only one language is spoken by its majority population, more languages are being taught as mother tongue compulsorily in each state and union territory. At primary stage, children are taught only one language, but after that more than one language is taught compulsorily, besides mother tongue or first language. Usually, English and Hindi or any other modern Indian language are taught compulsorily after primary stage. Since two or three languages are taught compulsorily at middle and secondary stages, time allotted for language teaching is more than forty percent of the total time available for teaching purposes in school time-table. The languages taught in schools are treated like any other subject and are generally given equal weightage in examinations.

323. *CHATURVEDI, S. L., Craft as an Educational Medium in Elementary Schools, Ph.D. Edu., BHU, 1957.*

The author sought to discuss the role of craft as a medium of education in elementary schools.

The major observations are as follows: Craft occupies an important place in the education of the child and teaches the dignity of labour. It helps in maintaining continuity between home and school life. It clarifies other school subjects and makes the child more adaptable to the varying conditions of modern industrial and social living. Physical activity provides for the healthy growth of the mind. Children gradually learn to handle things and their constructive and creative powers can be employed to better understanding of science, geography, history and other subjects in the school curriculum. Hand work should be made compulsory and bear relation to the child's environment and ease in execution. He should be able to produce something as a result of his labour.

The scheme should be flexible to cover diverse capacities. A group job encourages cooperative effort. Skill and discipline should be achieved in their social setting. Children can also be educated through play. As regards the training of craft teachers for elementary schools, the general teacher should be entrusted with the teaching of craft. Pupil teachers should, therefore, be given liberal training in woodwork, metalwork, clay modelling, cardboard work, paperwork and applied arts. Knowledge of the elements of architectural design, applied mathematics, regional geography, economic history, etc., is essential besides practice in class teaching. Selections of crafts in schools should be done according to the stage of development of children. In the manipulative stage lasting upto the age of six years, children are active, their movements are random, instinctive and changing. Variety and capriciousness characterise their activities. During this stage, pliable material like sand, clay, plasticine, etc. may be suitable to attract their interests. In the symbolic state lasting upto the age of nine years, pliable material such as paper, cotton, wool, leather, etc. should be supplied. In the third stage, when the sense of cause and effect and better muscular control is developed, useful articles from materials like, cardboard, cane, bamboo, etc. can profitably be made. The selection of craft is effected also by the conditions like, natural correlation with other important human occupations and other subjects in the school curriculum, the local conditions, finance and facilities, and the staff available. Moreover, the selected craft should be suitable for being adopted either as a vocation in adult life or as a hobby during leisure. As regards the forms of educational handiwork not only cardboard, clay, plasticine, light work, cane, wire, etc., but also the old waste material like empty tin cans, corks, spools, cigarette boxes, etc. may also be used. The craft classes should not have more than twenty students. In the lower classes, the teacher should demonstrate and the children should be required to copy the same. The analytical method should be adopted in upper classes. The students should be encouraged to work out practical drawings and execute models according to their own dimensions.

324. DAISY, J. V., Physical Education of Girls in Indian Schools, Ph.D. Edu., Madras U., 1963.

The aims of the investigation were: (i) to analyse the need for physical education for girls in India; (ii) to review the way in which the needs are at present met; and (iii) to offer suggestions in this regard.

A questionnaire was used to collect data. Several leaders of physical education in India were interviewed. A review of the related literature helped the investigator to highlight the role played by physical education in Indian schools.

Some of the handicaps of physical education in India were: (i) the failure to recognise the importance of special arrangements for training and providing trained and highly qualified women leaders to conduct the programmes in girls' schools, (ii) the failure to give importance to present leaders through commensurate status and attractive salaries; (iii) the lack of adequate amenities in schools in terms of playgrounds, equipment, quantum of time set apart in the time-table for participation or instruction in physical education; (iv) the lack of provision for a variety of physical activities; (v) the unsuitable dress; (vi) the inadequate library for physical education; and (vii) the lack of awareness of the value of student leadership on the part of educational authorities.

325. DAVE, R. H., and SAHA, S. N., A Study of Common Errors in English at the Higher Secondary Level, Report of the Fifth Conference of Chairmen and Secretaries of the Boards of Secondary Education, NCERT, New Delhi, 1968.

The specific purposes of the study were: (i) to locate the common errors in English and (ii) to suggest remedial treatment.

An attempt was made to analyse the errors, both quantitatively and qualitatively, of the English language as found in the ninetytwo answer scripts of English paper I which were taken at random from the Higher Secondary Examination Board of Education, Delhi. For the sake of convenience, the areas of investigation were restricted to errors of grammatical structures, errors of words, phrases and idioms, errors of punctuations and errors of spelling.

The important findings were as follows: Errors of grammatical structures were predominantly pronounced in these pupils' writing, with spelling errors in next coming frequency, the values being fortyfive percent and twentynine percent of the total errors, respectively. Lexical errors and the misuse of usage and idioms found the third place and constituted about nineteen percent of the total errors. Comparatively speaking, errors of punctuation being five percent of the total errors were not significant.

The first three years of the teaching-learning process should be effectively and fruitfully utilised for ensuring consolidation of sentence patterns in pupils' minds. Efforts should be directed towards seeing that pupils' mistakes do not spill over into the secondary course.

326. *DAVE, R. H., and SAXENA, R. C., Curriculum and Teaching of Mathematics in the Higher Secondary Schools, NCERT, New Delhi, 1965.*

The objectives of this study were: (i) to study the existing curricula, textbooks and teaching methods in mathematics in higher secondary schools of various states; and (ii) to develop a new curriculum in mathematics in the light of the experimental curriculum by adopting suitable techniques of teaching and learning.

The analysis of syllabi and textbooks was extended to all states but the study of teaching-learning situations was confined to only four states, viz., Bihar, Gujarat, Mysore, and the Punjab, and the Union Territory of Delhi. The study was confined to general mathematics course. For survey and analysis of the present syllabi in mathematics, Information Blank was prepared. For analysis of textbook, a questionnaire for teachers was prepared and mailed to 200 teachers, but only sixty were received duly completed. For study of the teaching-learning procedures, a questionnaire was given to students and classroom obesrvations were made. Teachers were interviewed. Students in groups were also interviewed and general information blank was developed.

The major findings of the study were: (1) most syllabi did not specifically mention any objective of teaching mathematics; (2) even where these were recorded, consideration was given to (i) computational skills and abilities including knowledge of mathematical concepts, facts and principles, (ii) utility of mathematics, application of mathematical knowledge to solve everyday problems, select the relevant facts, reject the irrelevant ones, etc.; (3) in listing the content, all syllabi had followed the logical sequence of different mathematical processes; (4) the content was arranged under topics, further divided into subtopics; (5) basic concepts underlying the topics or subtopics had nowhere been indicated; (6) most syllabi did not define clearly the scope of a topic; (7) eleven percent of the authors had a doctoral degree and thirtyseven percent master's degree in the subject; (8) majority of the books were written in regional languages; (9) in about twentyfive percent books, solved examples did not clarify the concepts; (10) in all books problems were provided but no book encouraged problem solving as a method of learning mathematics; (11) of the forty teachers observed during classroom teaching only fourteen usually linked a lesson with the premises; (12) in introducing a new topic, about ninety percent of the teachers talked about the subject and did not encourage pupils' participation; (13) not even fifty percent of the teachers ensured that the new concept had been learnt properly; (14) to a great extent the teachers depended on the text work for selection of problems; (15) about fifty percent of the teachers did analyse the problems on the day of observation; and (16) only about twentysix percent of the teachers corrected the home assignments with or without suggestions for improvement and majority of the teachers just signed the notebooks.

327. *DEPARTMENT OF TEXTBOOKS, Preparation and Evaluation of Textbooks in Mother Tongue, Second Language, English, History, Geography, Social Studies, General Science, Physics and Biology (at Middle School Stage), NCERT, New Delhi, 1970-72.*

The purpose of these nine studies was to develop the basic principles and procedures in the preparation and evaluation of textbooks in the above mentioned subjects.

The basic principles and procedures in the preparation of a textbook in any of the above subjects take into account the predisposing factors and the academic or pedagogical considerations. The predisposing factors comprise planning of the textbooks, consideration of the possible uses of it, promotion of the national goals of education and essential values of life, adjustment to available educational resources, background and needs of the learner, fitness into the total curriculum plan, and optimum utilisation of the facilities offered by book technology. Pedagogical considerations in the preparation of a textbook consist of accomplishment of instructional objectives, application of psychology of learning and consequent pedagogical devices, effectiveness of verbal communication, optimum utilisation of other media of communication, adequate provision for evaluation and use of learning and suitable guidance for learning as well as teaching. With the above broad guidelines in view, the actual preparation of a textbook stresses on the following major steps: selection, gradation, presentation and repetition. With an eye to nature and scope of each subject,

selection of general, linguistic, thematic, cultural and literary content of form and format of the experiment is done judiciously. The syllabus for the particular subject is broken up into units or subunits with meaningful and interesting chapter headings. The method of presentation is decided keeping in view the learning process and the latest information about the subject. Illustrations and their placements are planned with the help of the artists. Language should be simple and specific. Exercises should be given at the end of each chapter or unit and again at the end of the topic, if possible. Good exercises improve the quality of a textbook. The situations should be novel, stimulating and related to life as much as possible. Only one chapter should be written first, reviewed by experts and then tried out. It may be modified in the light of the review comments or try-out experience. Other chapters should be dealt with in the same manner.

The purposes of evaluation are selection, improvement and research. Evaluative criteria take into account objectivity of different aspects of a textbook, needs of the learner, requirements of the subject, interpretativeness of the criteria, and effectiveness in teaching-learning situation. The following tools are used in evaluation: report card, scoring card, scoring sheet, information sheet, profile, observation schedule, interview schedule, analysis sheet, evaluation proforma, questionnaire, checklist and rating scale. Some of the major procedures for evaluation are: (i) evaluation by a panel of experts; (ii) tryout of books; (iii) pooling the opinions of teachers, supervisors, pupils; (iv) content analysis technique; (v) empirical or experimental approach; and (vi) action research design technique.

328. DEULKAR, D., An Evaluation of the Home Science Curriculum, Lady Irwin College, New Delhi, 1967. (NCERT financed)

The study sought to evaluate the home science programmes at Lady Irwin College, New Delhi, with special references to its functional implementation and the personal and professional satisfaction of the students. The objectives of the study were: (i) to ascertain the reasons as reported by the alumni for joining the Lady Irwin College; (ii) to find out the relationship between the subjects taken at high school level and those taken at the college level; (iii) to find out the interest shown in postgraduate work while studying at the Lady Irwin College, and if so, the subjects interested in; and (iv) to find out whether the subjects offered at the college contributed to personal and professional spheres.

Out of 400 graduates of the B.Sc. and M.Sc. degree courses during years 1952-63, only one hundred and ninetyeight alumni responded to the questionnaire mailed to them. The variables studied were: (i) income level of parents divided into three categories—above Rs. 1000, between Rs. 500 and Rs. 999, and below Rs. 499 per month and (ii) educational levels of students. The analysis was done on percentage basis.

The findings revealed that (i) students seek admission to the college primarily because of the interest in home science; (ii) as an elective subject at the high school level, home science is taken more frequently than physics, chemistry or biology, but as a combination, pure science subjects are taken more often than home science; (iii) fewer upper income level respondents had given less preference to home science in comparison to that of pure science subjects; (iv) the area of home management contributes most to their personal lives and yields satisfaction; (v) as regards the professional life, the preference is for biochemistry and then for food and nutrition; (vi) the lower income group prefers food and nutrition to home management for personal living; (vii) approximately two-thirds of the respondents were employed and the main reason for unemployment was lack of time and the other reason was non-availability of home science jobs; (viii) interior decoration was most frequently the first preference for a career and other B.Sc. students preferred teaching at the college level; (ix) consistent with their training, M.Sc., graduates preferred research and nutrition fields to work in; and (x) low and middle income groups gave first preference to teaching at college.

329. DONGRE, P. K., Functions of Some Auxiliary Verbs in Marathi, Ph.D. Edu., MSU, 1968.

The study aimed at investigating the semantic shades of a verb-compound. The knowledge of different semantic shades connoted by the verb-compound enables one to comprehend the profound meaning of the statement and helps in achieving linguistic skills.

A representative sample of 3356 illustrations of verb-compounds was collected from books renowned in Marathi, representing different forms of literature like short stories, short essays, novels, dramas, articles and periodicals. The illustrations were not selected from books of poetry as the forms of verb-compounds in poetry are quite different from those which are ordinarily used. The sel-

ected illustrations reflected regional peculiarities, usually observed in various groups of Marathi speaking people. The following steps were taken in order to facilitate the detailed study of the functions of the auxiliary in the verb-compound: (i) each of the 3356 sentences was written on a separate slip of paper; (ii) the slips were grouped according to the auxiliary verbs; (iii) the frequency of each type was noted, and the percentage as well as per page ratio were computed. The auxiliaries having a frequency of more than 100 were selected for further discussion with regard to their function. There were nine such auxiliaries. The total number of illustrations was 3356, whereas the reading material consisted of 225 pages. The ratio was 3:2. In order to decide the exact semantic shade of the verb-compound, a comparison was made between the sentence patterns with verb-compounds and the sentence patterns without the verb-compounds.

In most of the illustrations of verb-compounds collected from modern Marathi literature, two types of semantic shades were apparent — (A) general, (B) special with reference to the illustrations. The different functions performed by the different semantic shades (with regard to both the categories A and B) of the auxiliary verbs, were enumerated in this investigation. Considering the important role played by the verb-compounds in connoting different semantic shades of meaning, it is necessary that the syllabus of the teaching of Indian languages should include the topic 'verb-compounds'. In order to facilitate the teaching of this topic, some lesson plans which could serve as guidelines have been given in the report.

330. D'SOUZA, A., The Regional Concept in the Teaching of Geography with a Statistical Analysis from actual Teaching, Ph.D. Edu., Cal. U., 1971.

This piece of research was an attempt to study and compare the test scores obtained through an objective test after teaching geography by systematic method, i.e. taking the whole country as the geographic unit and by regional method, i.e., by taking a region of a country as the geographic unit.

The study was conducted on a sample of 486 students of class nine from fourteen English medium schools of Calcutta. The Ballard's Columbian Mental Test was administered to the sample and the scores on the test were arranged in descending order. Taking every alternate score, two groups, each of 243 students, were formed with fairly equal scholastic attainment. One group was taught by the systematic method and the other group was taught by the regional method. After a period of time, objective test was administered. The data gathered were subjected to statistical analysis by using frequency distribution, standard deviation, t test, F test, skewness and kurtosis.

The salient findings of the study were: The frequency distributions, frequency polygons, and ogives showed that scores of the group taught by regional method were higher than those of group taught by the systematic method. The measures of mean, median and mode also represented the same picture. Variability in terms of SD for both the groups was comparable. The distributions of scores under both the methods were normally distributed as seen by chi-square test and skewness and kurtosis. The results due to the application of two-way analysis of variance indicated that F-ratio for 'between method' was significant, at .05 level. The experimental conditions due to 'regional method' resulted into higher achievement in terms of scores on the objective test. The effect of the variable of school was not significant. The application of t test indicated higher mean scores for students under regional method of teaching geography.

331. GEORGE, A., An Enquiry into the Scope and Effectiveness of Audio-Visual Instruction in Improving English Teaching in Kerala State in the first three years of School Course, Ph.D. Edu., Ker. U., 1966.

The study was undertaken to find out: (i) the availability of audio-visual aids in schools; (ii) the attitude of teachers towards the use of audio-visual aids; and (iii) whether the teaching of English with audio-visual aids is more effective than the usual way of teaching.

Data were collected by observing thirty lessons, by administering a questionnaire to 200 teachers from 200 different schools selected at random and by conducting an experiment in actual classroom situation. Information on the following points was obtained through the questionnaire : (i) the availability of the aids in schools; (ii) the frequency of use of aids by teachers; (iii) the facilities to use these aids in the schools; (iv) the reasons for not using aids; and (v) teachers' opinion regarding the use of these aids. The experiment was conducted on children selected from two government schools and two private schools. They were grouped on the basis of their

achievement in English. The parallel group technique was followed. At the end of the term, a test (consisting of essay type and new type of questions) was administered.

The important findings were: (i) the teachers teaching English in grades fifth, sixth and seventh generally used the translation method; (ii) the oral work was neglected in all the three grades; (iii) the teachers' pronunciation was incorrect and they did not pay much heed to the pupils' pronunciation; (iv) due to overcrowding in the classroom, the children did not get individual attention; (v) the type of seating arrangement was neither healthy nor conducive to language learning; (vi) majority of schools did not possess aids like projectors, tape recorders and flannel boards; and aids available in schools were not properly used; (vii) teachers did not use audio-visual aids because of heavy cost, heavy syllabus, insufficient number of material aids, and lack of skill and special training; (viii) the percentage of specially trained teachers in audio-visual instruction was 6.06 only; and (ix) the achievement of pupils taught by using audio-visual aids was greater than those taught by the usual method and the use of audio-visual aids did not require more time than what was required for ordinary teaching.

332. *GHANCHI, D.A., A Contrastive study of the Grammatical Structure of English (as prescribed in the Syllabus of English for Secondary Schools of Gujarat) and Gujarati to suggest a Curricular Programme of English for schools, Ph.D. Edu., SPU, 1972.*

The objectives of the study were: (i) to identify, analyse and describe similarities and contrasts between the grammatical structures of English and Gujarati at different levels; (ii) to predict learning hazards involved in handling specific grammatical structures of English in the background of corresponding grammatical structures of Gujarati at the twin levels of recognition and production; (iii) to prepare a hierarchy of difficulty of various grammatical structures in the context of the various levels of contrast existing between the structures of the target language and the source language; (iv) to prepare a sequential curricular programme based on a calculus of learning hazards likely to be caused by contrasts between the grammatical structures of the two languages; and (v) to suggest areas of further research work in the fields of contrastive analysis and curriculum construction with special reference to English and Gujarati.

The sample consisted of all the grammatical structures given in the syllabus prescribed by the Gujarat State Government for classes eighth, ninth and tenth of secondary schools. The corresponding grammatical structures of Gujarati were taken from the spoken languages of the educated in Gujarat, as found in books used in schools and colleges, and in the actual speech of educated persons. For the study of the morphologies of the two languages, three models, namely, items and arrangement model, item and process model, and word and paradigm model were used as tools of study. For the study of the syntax, four techniques, namely, the base and modifier technique, the slot and filler technique, the technique of immediate constituents and that of phrase structure rules were used. For the location of structural contrasts and prediction of learning problems, Gujarati versions of English examples were also used. The hierarchy of difficulty of various grammatical structures was prepared on a four-level calculus scale prepared specially for the purpose.

Findings of the study revealed that (i) the morphological systems of English and Gujarati at two major levels of content words and function words show numerous contrasts in respect of form, function and meaning. The inflectional categories like number, case, gender, person and tense operate in the two systems in a number of conflicting ways and thereby generate problems of learning. The derivative processes in both the languages also entail grammatical consequences of far reaching pedagogical implications. Besides, the system of function words of English as compared with that of Gujarati, showed deviations in several respects, like form, privilege of occurrence, etc. All these cumulatively give rise to learning problems not only at the level of morphology but at that of syntax also. (ii) The syntactical structures of English as compared with those of Gujarati show four prominent levels of contrast, generating and increasing intensity of difficulty in learning them. The syntactical signals that cause this are inflection, threefold relationship of agreement, function words and word order at phrase, clause and sentence levels. (iii) The greater the positive correspondence between the grammatical structures of the two languages the fewer are the barriers on the part of the learner to master them and vice-versa. (iv) A curricular programme that is based on the hierarchy of difficulty generated by structural contrasts can help the course planners, the textbook writers, the material producers and the teachers to do their job more scientifically and so, more gainfully. It can also help the learner to learn the second language at a faster pace with more pleasure as well as

profit. (v) Contrastive study of the phonology, the semantics and the cultural life of the speakers of English and Gujarati is likely to help the movement for better curriculum tremendously. As a result, the instructional programme of English in the secondary schools of Gujarat can be a more productive enterprise than it has been heretofore.

333. *GOTHIVEREKAR, S. R., The Secondary School Curriculum in the Province of Bombay (A Critical Analysis and Examination of its Basis, Present Structure and Future Reconstruction), Ph.D. Edu., Bom. U., 1947.*

The aims of the study were: (i) to study the objectives and principles underlying the secondary school curriculum in the Province of Bombay, and (ii) to suggest ways for the reconstruction of the curriculum based on a study of the working of the present curriculum.

The study was mainly confined to the Anglo-vernacular and vocational secondary schools in Bombay. The data were collected through survey of past and present curricula and syllabi in the Bombay Province. A sample survey was made in fiftyfive schools in Bombay city and six high schools as well as seven vocational high schools in Navasari. The questionnaire was sent to the principals of these sixtyeight schools. The procedure included the analysis and evaluation of the present curricula of secondary schools in the Bombay province, a critical review of each of the different curricula or syllabi, their comparative study and survey of the reports.

The main conclusions are: (i) due to political pressure, there is undue dominance of the English language since the advent of the British rule to the present day; (ii) the undue importance given to the English language and to the matriculation examination has narrowed the purpose of secondary education; (iii) such subjects as drawing, art, craft, music, physical education, religious-cum-moral instruction, are neglected; (iv) due attention is not paid to practical and vocational education; and (v) undue emphasis is laid on English medium, consequently the mother tongue and the Indian languages are neglected. Some of the suggestions made are: (i) the aim of secondary education should be all sided development of an individual according to his needs, aptitudes and interests; (ii) domination of English should be minimised; (iii) undue importance of the matriculation examination should be minimised; (iv) the mother-tongue should be the medium of instruction; (v) practical and vocational education should be introduced; (vi) the curriculum should provide sufficient choice of subjects; and (vii) religious instruction should be included and physical education should be emphasised.

334. *GCPI, An Investigation into Students' Understanding of some Common terms of Geography, Allahabad, 1963.*

Objective of the investigation was to find out the areas of difficulty in the field of geographical concepts and suggest remedial measures for them.

A group of 303 students studying in class VIII of three local schools was selected. To assess the attainment of students who had completed their course in geography for class VIII, a test consisting of twentyseven questions with 108 items was designed to find out; (i) whether pupils gain anything like a satisfactory command of essential geographical terms, (ii) which terms present the greatest difficulty, and (iii) in which geographical areas pupils experience difficulty. The test items referred to common geographical terms in Hindi occurring in their textbooks. The questions were simple and did not require any previous preparation for answering them. Each item was assigned one mark and the maximum marks were 108. The guess factor was eliminated as the students were asked to give brief answers by studying the data provided. The distribution of the scores was prepared. The analysis of the answers of each question was done on percentage basis.

The result of the test was disheartening and showed that eightyfour percent students scored less than twentysix, i.e., 24 percent marks. The answers showed that the terms were either very well understood or not understood at all. An analysis of the answers revealed the nature of pupils' understanding of these terms and gave some insight into their difficulties. From the survey of the results it is quite evident that very little emphasis is being laid in our schools on the practical side of teaching the subject.

335. *GUPTA, D.N.P., An Investigation into the Present Apathy towards Teaching and Learning of History in our Schools, Ph.D. Edu., Bih. U., 1953.*

The aim was to investigate into the present apathy towards the teaching and learning of history in Indian schools with particular reference to the secondary schools of Bihar.

The investigator reviewed the prevailing practices followed by the teachers of history and made the following observations.

The factors found to be responsible for the present apathy towards history were: (i) the syllabus is rigid and does not take care of individual needs; (ii) care is not taken to produce good textbooks; (iii) teachers do not create interest in history; (iv) examinations claim disproportionate importance on the teaching-learning process; (v) the questions are of traditional nature; (vi) teaching methods either lay stress heavily on the content of education or on the methods of education; and (vii) the administrative machinery in the State Education Department is not adequate to cope with the work in hand.

336. GUPTA, R. C., Backwardness in Mathematics and Basic Arithmetic Skills, Ph.D. Edu., Del. U., 1972.

The purpose was to provide a standardised tool to the teachers and research workers whereby they would be able to diagnose the weak areas in mathematics. The hypotheses were: (i) the backwardness in mathematics in class VIII is due to poor command over basic skills in arithmetic; (ii) low achievers in mathematics have poor command over basic arithmetic skills, whereas high achievers have good command over it; (iii) backwardness is closely related to the attitude towards mathematics; (iv) high achievers have more favourable attitudes than low achievers; and (v) basic arithmetic skills can be mastered easily by means of a suitable remedial programme.

The pretreatment tests were administered to 294 boys and 265 girls of grade VIII from selected eight government schools. Out of these, 180 boys and 176 girls were selected for the final study. The Raven's Progressive Matrices was used to measure general intelligence. An attitude scale was developed to measure attitude towards mathematics. The test of basic skills in arithmetic was constructed to measure command over basic arithmetic skills. The achievement in mathematics was measured by the Mathematics Achievement Survey Test prepared by the NCERT. Diagnostic tests in basic arithmetic skills were developed to determine the exact nature of weakness. Similarly, a course of self-help in basic arithmetic skills, a programme of remedial work was developed by the investigator to use as 'treatment' for this study.

The important findings were: (i) low achievers in mathematics have poor command, whereas high achievers have good command over basic arithmetic skills; (ii) attitudes improve significantly when command over basic skills improves; (iii) low achievers in basic arithmetic skills have negative attitude towards mathematics, while high achievers have positive attitude; (iv) there is a positive relationship between intelligence and basic arithmetic skills but attitude towards mathematics is not significantly related to intelligence; (v) there is a significant positive correlation between intelligence and achievement in mathematics; (vi) basic arithmetic skills can be quickly and conveniently mastered by the course of self-help in basic arithmetic skills; and (vii) there are no significant sex differences either in attitudes or in achievement in mathematics.

337. JAGANNATHAN, V. R., Hindi and Tamil Homonyms (Hindi aur Tamil Ki Samanstrotiya Bhinnarth Shabdavali), Central Hindi Institute, Agra, 1969.

The aim of the study was to collect Hindi and Tamil words having the same sound but different meaning and to analyse their nature.

The study is in the area of lexicology and is based on the language generally used by Brahmins of Tanjore district. This is considered to be standard. Only those words have been taken which are used in Tamil literature. The words have been compared on following criteria: (i) nature of construction — meaning area and cognates, (ii) source word — derivation (iii) bases of source—sound lateral arrangement, meaning, distribution of use and evidence, (iv) comparison of meaning — difference in meaning, symbolical meaning, code transfer and hiatus.

As a result of this study, a word list of 938 words has been prepared. These words have the same source, but differ in meaning. Index, word guide and pronunciation guide are also prepared. A word list of Hindi and Tamil words having the same meaning has also been given. It is claimed the word list would be helpful to both teachers and students of Hindi and Tamil.

338. JAVLI, V. K., Teaching Beginners to read Kannad — An Experimental Study, Ph.D. Edu., Bom. U., 1949.

The objectives were: (i) to modify and adapt the intrinsic method to the teaching of Kannada to pupils of the first grade on the lines of A.I. Gate's work and (ii) to have an experimental investigation of the diagnostic and remedial phases of the reading problem by ascertaining the reading difficulties.

Two groups were formed in each of the two infants' classes chosen for experiment after administering the following tests: (i) Kamat's Intelligence Test; (ii) selection of figures; (iii) selection of the same and different figures; (iv) selection of the same and different letters and words; and (v) selection of words, and phrases and 'blending'. Reading readiness of the pupils was also tested. The two classes were taught by different teachers and one group in each class (group A and C) was taught by the phonic method and the other groups (groups B and D) by the intrinsic method, first in 1945-46 and again in 1946-47. Seven groups from five different classes including the four groups from the two classes taken for the experiment previously, were taught in the second experiment. One of the classes was standard II and the other was standard III. Group A, in the second experiment, was taught by the 'Leela Method', (intrinsic method) and groups B, C, D and E by phonic method. The investigator prepared a cyclostyled book of 75 pages called 'Shankar and Leela' for the purpose of the study. The number of words introduced in it was only 249. Proper nouns were excluded. The vocabulary burden was 8.2. The length of a sentence was restricted to one line. The following tests were administered to all the groups considered for the experiment: (a) letter recognition for letters—seen, spoken, pronounced; (b) word recognition for words—seen, spoken, pronounced and words to cordinate with pictures; (c) silent reading test — coordinating sentences with their respective pictures, following directions, comprehending paragraphs; and (d) oral reading test — reading a short piece.

It was found that the aggregate scores of Group A (with intrinsic method) was 362.5 for the tests a, b, c, while the highest score from the other groups was 357.2. In the test d, the intrinsic method class made 108 mistakes (which is the minimum), the other classes made 111 mistakes. The investigation has also described six cases of remedial instruction regarding virtual errors in letter recognition, the auditory defects reflected through mis-pronunciation, errors in word recognition, word pronunciation and word making. The reasons for these have also been enumerated.

339. JOSHI, J. N., The Development of Algebraic Concepts in Pupils at the Junior Secondary Stage, Ph.D. Edu., Pan. U., 1970.

The purpose was to study the development of algebraic concepts in pupils at the junior secondary stage in relation to grades, sex and levels of intelligence with implications for improving the syllabi, for helping teachers to evaluate their own methods of teaching algebra and for assisting counsellors in providing proper guidance to the pupils. The hypotheses were (i) the levels of instruction, varying according to the content for each grade, are responsible for the variations in the understanding of algebraic concepts from one grade to another; (ii) sex differences exist in relation to the development of algebraic concepts; and (iii) the development of algebraic concepts in pupils depends directly on their levels of intelligence.

An algebraic concepts test in Hindi was constructed using a sample of 1863 cases including both boys and girls in the three stages of the test construction. The preliminary draft consisted of 250 items split into seven broad categories of concepts corresponding to generalised numbers, directed numbers, equations, parentheses, substitution, exponents and graphs. After item analysis, 70 items were included in the final form of the Algebraic Concepts Test. The coefficients of retest reliability for different groups, namely, (i) girls in each grade, (ii) boys in each grade, (iii) girls and boys in each grade and (iv) total sample, ranged between .77 and .92. The internal consistency taken in terms of interconcept correlations, was low, varying between .22 and .65. Factorial validity was established for the test. The significant differences in the mean scores on the test between the various grades established the sensitivity of the test for discrimination. The results of cluster analysis showed that all the subtests (concepts) appeared on only one common factor. The centroid method, however, showed the existence of two common factors to be identified with 'Algebraic Aptitude' and 'Symbolic Substitution'. The concurrent validity coefficients against teachers' evaluation varied from .50 to .71. The Jalota's Group Test of General Mental Ability (1960) was used for evaluating the intellectual status. The Algebraic Concepts Test and the General Mental Ability Test were administered to a sample of 1400 pupils from the states of the Punjab, Haryana and Chandigarh. The data were analysed to test the three hypotheses together by making use of the three-way analysis of variance. The criterion variable was the total algebraic concepts scores which were mutually independent of one another in different cells. Each of the three hypotheses was further tested by employing significance of difference between mean scores. The grade differences were examined by using t test between mean scores on the total algebraic concepts and on individual concepts. Ogives were also drawn. The sex differences were tested by employing the

technique of significance of difference between the mean scores earned on total test as well as on each concept separately by girls and boys in different grades and in the total sample. The product moment relationship among algebraic concepts was established. Item difficulty value for each items was found out for each group.

The following were the conclusions: (i) The algebraic concepts tend to develop from lower to the higher grades except for the concept on directed numbers; (ii) boys have a tendency to excel girls in the understanding of algebraic concepts; and (iii) superior intelligence is associated with higher scores on the algebraic concepts.

340. KELKAR, S. V. A., Tentative Course of Study in General Science, Ph.D. Edu., Bom. U., 1950.

The purposes of the study were (i) to present a tentative course of study in general science for the secondary schools of the province of Bombay, and (ii) to discuss the historical and philosophical background of the new course of study in general science.

The sample consisted of high school pupils of both the sexes in the city of Belgaum. Information regarding their interest was obtained from interest sheets. 'Kirloskar' and 'Sunday Sakal' (the newspapers) formed other source materials. These were analysed for four years and relevant scientific material was compiled in order to locate the scientific interest of the pupils.

The important findings were as follows: (i) the high school pupils are more interested in science than in any other subject; (ii) boys are more interested in science than girls; (iii) pupils' interest in science is more in the beginning but it decreases as the course advances; (iv) the interest is evenly divided between biological and physical sciences; (v) there is no significant sex difference in the distribution of pupils' scientific interest between the biological and physical sciences; (vi) health and physiology, plant life, animal life and astronomy dominate the scientific interests of pupils of both the sexes at the high school stage; (vii) soil, bacteria, air, sound, and water are the topics in which high school pupils show the least interest; (viii) high school pupils seem to be more interested in the fundamentals of science than in its practical application. The suggested course in general science consists of ten units, each of which represents some major problems of living, a wide area of human experience or an important aspect of environment.

341. KESKAR, K., A 3,500 word Vocabulary for the Teaching of English in Indian Schools, Central Institute of English and Foreign Languages, Hyderabad, 1972.

The aim of the project was to produce a list of essential words, which, in the country, should serve both for the teaching of English in schools and as a bridge between core English at school and specialised English after school.

While preparing this vocabulary list, in addition to two earlier studies, the other sources such as (1) the General Service List of Michael West (GSL), (2) the AICSE or Nagpur List, (3) the Minimum Adequate Vocabulary (MAV) of Michael West, (4) the History and Principles of Vocabulary Control by Herman Bongers lists 'K', 'L', 'M', (5) Word Study by J. C. Ricwald, Vols. 1-3, (6) An investigation into vocabulary resources of third year degree students by Usha Chadda, Lists A & D (CIEFL Research Dissertation), (7) Preparatory General English, Physical and Social Sciences (Textbooks prepared by CIEFL), and (8) Thorndike Transposed: A restatement of the 4000 highest frequency items by Michael Dobbyn, were used. Besides these, the concrete nouns from the GSL under the areas such as food, animals and birds, clothing, etc., were listed. The questionnaire was framed and sent to teachers of English, framers of syllabi and writers of textbooks for suggestions. Similar questionnaires for science and technology, and planning and development were prepared and circulated to the staff members, research fellows and research associates at the CIEFL, Hyderabad. The final vocabulary list was prepared considering their opinions. All the non-GSL words in the list were entered on cards with information such as (a) parts of speech a word belongs to, (b) source from and (c) the semantic stretch of words.

The major observations of the study were: (i) this list, carefully prepared for high school students in India, will help textbook writers as well as teachers to set their targets; and (ii) this list gives a realistic and practical suggestions regarding producing materials for textbooks to be used in high schools.

342. KHUSHDIL, M.B.L., A Comparative Study of the Integrated and Traditional Methods of Approach in the Teaching of Social Studies to Class VII, Dept. of Edu., Hindu College, Moradabad, 1960. (MOE financed)

The purpose of this study was to compare

the traditional and the integrated methods in teaching of social studies to class VII on the following: (i) assimilation by children of instruction imparted; (ii) effect of the two approaches on the behaviour and attitude of the children during the session; (iii) areas and aspects in which one is superior to the other; (iv) difficulties experienced by teachers and heads of the institutions during the practice period; and (v) exploring possibilities and scope of integrated teaching in the average school under ordinary circumstances.

Two groups of students of class VII of two schools were selected for the study. They were equated by means of an achievement test based upon the syllabus of class VI. The test was administered to students of two institutions, and forty pupils were equated in each institution on the basis of their raw scores. Two teachers were selected on the basis of general knowledge test to teach for one year to the two experimental groups. Both the teachers put in the same amount of work during the year according to the prescribed work schedule. The assignments and exercises given to the groups were kept equal. The teacher who taught through the integrated method integrated the syllabi of history, geography and civics, which constitute social studies, while the other teacher taught all the three separately. Learning outcomes in terms of knowledge and its application were measured by administering seven objective type achievement and essay type tests to the children during the session. At the end of the session, one attitude test and one behaviour rating scale were prepared and administered to the children. The behaviour rating scale was rated by the parents of the children, the social studies teachers and another teacher teaching some other subject to the group under study. Differences in performances of the two groups were studied in terms of percentages and means, testing them for significance.

In respect of assimilation and acquisition of knowledge, it is found that the group taught through the integrated method did better; in respect of attitude, the integrated group shows more of critical attitude towards authority. The groups are similar in attitude towards the sick. The traditional group is, however, better in 'to help others.' With respect to behaviour norms the parents and the teachers differ, parents rated integrated group to be better, whereas teachers rated traditional group to be better; ordinarily, the heads of the institutions and social studies teacher experience no difficulties in organising and conducting teaching according to the integrated method except that the teacher has to put in more labour in preparing lesson notes and has to devote more time to the study of the subject. As regards the scope and possibilities of integrated teaching in an average school under normal conditions, the answer cannot be categorical. Most respondents felt that it is dependent on the teacher, his mental and professional calibre and the attitude towards the institution.

343. LAKDAWALA, U. T., The Basic Vocabulary of Gujarati Children at the Age of 13 Plus, Ph.D. Edu., Bom. U., 1960.

The objective of the study was to find the reproduction and recognition vocabularies of Gujarati children of 13 plus (standard VII).

To find out the recognition vocabulary, six Gujarati textbooks approved for standard VII were accepted as the base. A consolidated list of all the words in the six textbooks and the frequency of occurrence of each word was found. Words recurring atleast in three textbooks were considered suitable and words occurring in only one or two textbooks were compared with Vakil's list for age 11 plus. Out of 10112 words, 3405 were found to be common to both. The remaining 6707 words were shown to experienced teachers for their opinion. They were unanimous regarding the suitability and unsuitability of some words. From among the words for which there was no unanimity among the teachers, some words were removed as they were proper nouns. The remaining words were classified into three lists and three tests each with ten subtests were prepared. These tests required pairing, multiple choice, giving opposites and identification. The first, second and third tests were administered to 456, 455 and 456 pupils respectively. Words that could be recognised by more than 50 percent of the pupils were accepted. A test of 12167 words (4506 occurring in three or more textbooks, 3405 in Vakil's list, 3949 accepted by all the teachers consulted and 307 known to the pupils according to the tests) was first prepared and all these words were classified according to parts of speech, origin (etymology) into fifteen sublists on the basis of frequency. Separate lists were prepared for homonyms, verbs, 'prayogas' and proverbs. The recognition vocabulary was given frequencywise and was alphabetically arranged. As for the reproduction vocabulary, the Primary School Certificate Examination papers were followed for guidance. Topics were selected from papers of ten years. As many as 281 pupils from twenty rural schools, 360 pupils from ten urban schools and 286 pupils from eleven city schools were asked to write thirty lines on any one of them.

The words used by the pupils in this composition were listed, tabulated and classified according to frequency, grammatical form, origin, etc. Separate lists of joint words, 'prayogas', homonyms, etc., were prepared. The finalised list contained 8570 different words.

On comparing the two lists, it is found that in 12167 recognition words and 8570 reproduction words, 5840 words are common to both. There are only 328 English words in the recognition vocabulary, but in the reproduction vocabulary there are 501 English words. In the recognition vocabulary 63 percent of the words are nouns, 11.54 percent are verbs, 19.42 percent are adjectives, 0.58 percent are pronouns and 5.39 percent are adverbs. The words in both groups are sublisted in ten groups on the basis of frequency (1000 and above, 100 to 999 etc.) indicating (i) the actual frequency against each word, (ii) the credit, (iii) the grammatical group or category, and (iv) etymological category.

344. MISHRA, K. K., Psychological Study of Juvenile Literature in Hindi, Ph.D. Edu., Gor. U., 1972.

The aims and objectives of the study were (i) to find if juvenile literature in Hindi is according to psychological and linguistic needs of children for whom it is written; (ii) to understand the problems and difficulties of boys and girls in connection with the studies of juvenile literature; (iii) to understand the importance of juvenile literature for all round development of boys and girls; (iv) to give proper suggestions for better juvenile literature on the basis of the conclusions drawn from the present study.

A random sample of five hundred books of juvenile literature recommended by the National Council of Educational Research and Training were taken. Fifty monthly magazines of juvenile literature were also included. For trial of this juvenile literature, two hundred fifty boys and two hundred fifty girls from rural area were taken. The same way two hundred fifty boys and two hundred fifty girls from urban area were taken. The age groups of these children were 8-11 and 12-14 years. These children belonged to primary school stage and middle school stage respectively. For study of the selected books on the basis of psychological facts, one questionnaire of twentytwo questions was prepared. Another schedule of fifteen questions was prepared for boys and girls in connection with the study of the books for the children. These questions were asked when the children completed the study of the particular book. The questions pertained to language, subject matter, curiosity, interest, emotional feelings and social development of children.

It is found that very few boys and girls belonging to rural areas get juvenile literature to read. Though the boys and girls belonging to urban areas get this literature a little more than the rural children, yet their percentage is not high. In juvenile literature relating to science there are so many lessons that deal with things which are away from the daily experiences or use of the children. In the science literature importance has not been given to girls' interest. 'Katha Sahitya' does not help in the emotional development of the children. Sometimes the language of 'Katha Sahitya' is not according to the mental level of the children. In this 'Sahitya' the children's limited world has not been considered. One third of 'Katha Sahitya' does not satisfy the children's interests and curiosity. Major portion of 'Jeewani Sahitya' is in the form of narrative history. Sometimes so many incidents of one's life have been given at one place. No logical order has been maintained. No doubt there are inspirational elements in this Sahitya. It was found that the children are generally interested in reading the incidents of childhood and adolescence but attention has not been paid towards this aspect of biographies. The girls are interested in reading the lives of great ladies and ideal women but very few lives of this category have been described.

'Samajik Gyan Sahitya' is not interesting. This Sahitya is generally in the form of narration. A major part of this literature does not develop the social qualities in the children as courage, patriotism, bravery and cosmopolitan outlook. Whatever there is, is in the form of direct preaching.

'Bal Geet Sahitya' is not enough; it lacks humorous and recreational elements. Generally the songs are full of 'Niti', good conduct and national feelings. In monthly magazines the subject matter is not according to the age or educational standard of the children. As material is not according to the age of the children so the children of different ages are not able to find out the literature according to their interests easily. This inconvenience creates feeling of disinterest in them. Generally the literature of these magazines is in the form of stories.

345. MODI, J. J., A Comparative Study of English and Gujarati Syntaxes, Ph.D. Edu., MSU, 1966.

The purpose is to study Gujarati language and to compare it with English language which at present assumes international importance.

The linguistic method is used in this comparative study as it emphasises the learning of patterns rather than rule of drill and constant practice of the language structures. The investigator has given some basic facts about language, viz., sentences, parts of speech, the concepts of doing, doer, underdoer, time and tenses, moods, voice, number, gender, content of person, case, modification, comparison, inquiry and negation. He has discussed the syntactical devices in English and Gujarati.

Following are some of the important findings. (i) The general tendency in Gujarati is to disintegrate consonant clusters. A vowel usually appears between the two consonants. (ii) Loose consonants at the end of the words are usually dropped off. (iii) Gujarati words always end in vowels whereas English words in consonants. (iv) All vowels occuring at the end, in Gujarati, are shortened a bit. (v) Aspiration and negation of vowels in Gujarati have a phonemic significance. (vi) Gujarati is a highly inflectional language. There are inflections of gender, number, comparison, cases, tenses and moods. (vii) The elaborate system of gender inflections is in contrast to genders in English which are only notional and indicative of sex differences. (viii) In contrast to pronouns in English, personal pronouns in Gujarati do not distinguish gender. (ix) The pattern of plural inflections in Gujarati is complicated in contrast to the simple 's' inflection in English. (x) The feminine forms of modifiers and verbs remain unchanged in plural in Gujarati whereas only nouns have separate plural form in English. (xi) There are no irregular plurals in Gujarati as are found in English. (xii) Gujarati does not possess any inflections to indicate the comparative and superlative degrees of adjectives and adverbs. (xiii) Gujarati has no equivalent forms of English pronouns. (xiv) There are very few linking words in Gujarati as compared to English. The investigator has enumerated a number of examples in the appendices to substantiate the findings.

346. *MURTHY, R. V. S., A Comparative Study of the Direct Method and the Bilingual Method of Teaching English, Central Institute of English and Foreign Languages, Hyderabad, 1968.*

The main purpose of the investigation was to compare, under experimental conditions, the effectiveness of the bilingual method and the direct method in teaching English to Telugu speaking pupils, in the realistic setting of a classroom and to verify the validity of Dodson's claims regarding the effectiveness of the bilingual method.

The experiment was carried out on fourth standard students in a government high school typically representative of an average school in the state. The control and experimental groups were formed on the basis of a preliminary test and the pupils were evenly matched in respect of their age, sex, home background and their previous knowledge of English. The control group was taught by the direct method and the experimental group by the bilingual method. The same teaching material prepared by the investigator was used in both the groups and the same tests were administered periodically. The teaching continued for 103 days. A final test was then given to assess the achievement of the pupils.

The important findings were : (i) the bilingual method is more effective than the direct method in developing the pupil's ability in oral reading, oral comprehension and expression; (ii) a considerably greater frequency of contacts with English per pupil, per lesson can be obtained under the bilingual method (14 as against 7 under the direct method); and (iii) the burden on the teacher in terms of the amount of time spent in preparing lesson plans is less in the case of the bilingual method (33 minutes as against 52.4 minutes under the direct method).

347. *NAGALAKSHMI, S., The Comprehension of Oral English at the School Leaving Level, Central Institute of English and Foreign Languages, Hyderabad, 1962.*

The aim of the study was to construct simple oral comprehension tests (not a statistically valid battery of tests), with a view to giving incentive to the training and thereby make oral comprehension a vital part of the teaching programme.

Nearly 400 items were drawn from the syllabi used for the first five years and on the basis of the tryout results, a series of tests in oral comprehension was prepared and administered to about 2300 students of P.U.C. class and XII standard.

The important findings were as follows. (i) The tests show that the oral comprehension test would not only prove to be interesting to the students but also lead to the improvement of teaching in the classroom provided it was accepted as part of the school leaving examination. It would automatically lead to linguistic efficiency. (ii) The provision for systematic training on oral comprehension in class teaching would enhance the ability of the students to comprehend the spoken language.

The investigator felt that one period per week set aside for listening practice and oral comprehen-

sion tests which could be administered with the help of a radio set, would improve the comprehension of spoken (oral) English.

348. *NAGARAJAN, N., A Comparative Study of the Bilingual Method and the Direct Method in Hindi Medium School, Central Institute of English and Foreign Languages, Hyderabad, 1970.*

The purpose of the study was to compare under experimental conditions, the effectiveness of the Bilingual Method and the Direct Method in teaching English to Hindi speaking pupils in real classroom setting.

The experiment was conducted on class VI of a Hindi-medium school in Hyderabad. The class was divided into two groups, the control and the experimental, on the basis of a diagnostic test, class scores, age, home background and such other relevant factors. The controlled group was taught by the Direct Method while the experimental group was taught by the Bilingual Method. Regular and systematic teaching was done for a period of five months. The same teaching material was used by both the groups. All other variables were kept constant except the use of the mother tongue. Both the groups were tested periodically.

The important conclusion is that the Bilingual Method is superior to the Direct Method because of the following reasons: (i) it is simple from the point of view of both the learner as well as the teachers; (ii) it enables the students to speak fluently and accurately; (iii) it increases the rate and amount of learning in the classroom; (iv) it greatly promotes the intercommunication between the pupils and the teacher; (v) it is most effective even in such schools where the equipment is meagre; (vi) it combines the best elements of the Direct Method as well as of other methods.

349. *NAIR, N. S., A Study of the Common Language Difficulties (in English) of Secondary School Pupils in Kerala, Government Training College, Trivandrum, 1966. (NCERT financed)*

The objectives of the investigation were : (i) to find out the common language difficulties in English of secondary school children of classess VIII, IX and X in Kerala; (ii) to find out the causes of these difficulties; and (iii) to suggest methods to prevent and correct these difficulties.

Pupils of fortysix rural, urban, boys', girls' and mixed schools spread over Kerala State were made to write a free composition on 'Our Country'. A few of the urban schools were English medium schools. Altogether 1762 scripts were corrected and the errors were analysed and classified. The criteria followed in locating the common difficulties in English were : (i) if a particular type of error was found common in 10 percent or more of the scripts of a particular standard or class, it was taken as a common difficulty of the pupils of that class; (ii) mistakes of the same type which were found common to the pupils of standards VIII, IX and X, were considered as mistakes emanating from the difficulties in language that the pupils had experienced. Thus errors in different areas of the English language which are found in pupils' writings with a high percentage of frequency and diffusion have been classified as common language difficulties in English of the secondary school pupils. Though a strict classification was difficult as one kind of error merged into another, the common language difficulties as reflected by the errors were classified under the following headings : (i) difficulties with structures and patterns; (ii) difficulties in the area of verbs and verb-forms; (iii) difficulties regarding vocabulary (with words, phrases and idioms); (iv) difficulties with spellings; and (v) difficulties regarding punctuation.

The analysis of the pupils' writing revealed the following mistakes : (i) more than sixtyfive percent of the total errors are committed in the area of grammatical structure; the most alarming mistakes belong to the area of verb and verb combination; the pupils try to do literal translation of their mother tongue into English; (ii) about twenty percent of the total errors in the area of grammatical structure are of the use of articles; (iii) about fifteen percent of the total errors in the same area are of preposition; (iv) nearly twentysix percent of the total mistakes counted from the scripts are of spelling and the mistakes regarding the construction of the sentence are due to the fact that the sequence of words in sentences have a different arrangement in their mother tongue from that in English language; (v) pupils' understanding of the verb and verb-form is quite shaky and the learning of the same is quite unsystematic; (vi) the difficulty regarding the proper use of articles is because of the fact that articles do not exist in their native language (Malayalam); (vii) the causes of the errors of prepositions are because of the inability of the pupils in fixing the prepositions in the groups of words, their inability to understand the function of the preposition in a group of words and the uncertainty of the idiomatic application

of an individual preposition; (viii) the lack of sufficient vocabulary and ignorance of the proper use of words in sentences, cause mistakes in writing; (ix) the inadequancy of reading material, defective methods of instruction in spelling, poor reading habits and lack of awareness of the importance of spelling, contribute to the difficulties of pupils in spelling; (x) the mistakes in punctuation reveal that no systematic teaching in this area is done but it is true that most of the pupils know the use and significance of the fullstop. Comma and other marks of punctuation are not used properly; (xi) the pupils are ignorant of the proper use of 'object' after the transitive verb. These errors are committed because of the misapprehension among the pupils regarding the use of 'objects' in sentences. The wrong practices of correcting the mistakes as well as the desirable methods of correcting them are suggested in this investigation.

350. *NARAYANASWAMI, G., An Inquiry into the Teaching of Social Studies in the Schools of Madurai and Allied Problems, Thiagarajan College of Preceptors, Madurai, 1960. (MOE financed)*

The main purpose of the study was to make an inquiry into the teaching of social studies in the context of the introduction of 'social studies' as one subject instead of as separate disciplines like geography, history, etc., in the new curriculum at the secondary school stage in 1948.

A questionnaire was used to collect data from 321 teachers including headmasters of Madurai district secondary schools. In addition to it social studies classes were observed, discussions were held with the headmasters and assistant teachers of the schools and over 600 social studies valued answer scripts of March 1958, S.S.L.C. examination were analysed to supplement the information available in replies to questionnaires.

The findings of the study revealed that (i) the headteachers say that fund allotted for social studies equipment vary from 2 to 20 percent of the total expenditure, the number of maps and books vary from school to school, the prescription of textbooks varies with the type of management, well-equipped social studies laboratory is rarely found, instead of using objective tests, old techniques are followed in examinations; (ii) although most of the social studies teachers are trained and have experience varying from a few months to over 20 years, in general, their qualifications, accomplishments and the broad bases of their outlook for effective teaching of social studies are hardly upto the mark; (iii) the situation and atmosphere in the social studies classroom are quite inadequate in most cases; (iv) because of dissatisfaction with the curriculum introduced in 1948, the concept of revising it is fundamentally right, but the revision done in 1958 has not been an improvement in every case; (v) in respect of aids and resources and their utilisation it is found that practically no money has been spent on books, maps, other aids, etc., library facilities are there but without proper planning, use of audio-visual aids in teaching and learning of social studies is almost absent, no attempt is made to indicate the available resources in the local community; (vi) 'activities' which are mentioned in the syllabus for learning social studies in a playway are hardly followed; (vii) the new type tests in social studies are not very much in favour; very few schools maintain cumulative records, very few teachers analyse the performance of their pupils after testing them, and there is no adequate attempt at discovering in a scientific manner the defects of the pupils and at remedying them.

351. *NARAYANASWAMY, K. R., Reading Comprehension at the College Level, Central Institute of English and Foreign Languages, Hyderabad, 1969.*

This investigation was taken up with a view to finding out ways of improving the reading efficiency of the school leavers so that they may complete their higher education successfully.

Three groups of students representing three categories of school leavers, namely, (i) those with a high degree of general proficiency as well as proficiency in English; (ii) those with average general proficiency and average proficiency in English; and (iii) those who are low in both the counts, were formed. They were put through the whole or a part of the Fry's reading course, which is designed to improve the students' average reading speed, i.e., the speed at which they may be required to read most of the time. This speed is at 150 words per minute for a 'slow' reader, 250 for a 'fair' reader and 350 for a 'good' reader with about 70 percent comprehension. Tests were administered to those three groups in reading and comprehension and the reading rates and comprehension scores were recorded. The Fry's reading course was found effective only wtih two of the experimental groups. In the case of the third group the gains both in speed and comprehension were minimal. An intensive course in remedial reading was devised for improving the reading rates and comprehension scores of the group.

The important findings were : (i) it is possible to improve the reading of school leavers through reading alone irrespective of the proficiency in other language skills; (ii) all school leavers apparently need to be put through a course in reading; (iii) very few of the school leavers respond to a short term course in reading like the Fry's; (iv) improving reading comprehension at the pre-university course level is really a problem of correcting fairly long established habits, of creating new habits and skills, and of developing them within one year, and hence not much can be attained at this level; and (v) reading comprehension should be improved in the school.

352. *PANI, R. N., Evaluation of Cocurricular Activities in Secondary Schools of Orissa and their relationship with Personal Development of Pupils, Ph.D. Edu., Utkal U., 1969.*

The study sought to find out the relationship of the different aspects of cocurricular activities with personal development of pupils and thus establish the importance of the former in relation to the latter. The major hypothesis was that the participation and achievement of pupils in cocurricular activities are intimately associated with the personal development of the pupils.

The method of field study was adopted. The sample consisted of 1200 pupils of class X (910 boys and 290 girls) drawn randomly from 55 high schools. The study was divided into four parts: (A) evaluation of the provision of cocurricular activities in secondary schools of Orissa; (B) evaluation of participation and achievement of pupils in cocurricular activities; (C) preparation of an inventory of pupils' personal development; and (D) evaluation of the relationship between the participation and achievement of pupils in the light of the provision of cocurricular activities in school and the personal development of pupils. Two score cards for (A) and (B) were prepared. They consisted of a few aspects, viz., physical education and training for discipline, social and welfare activities, school publication and other literary activities, education for national, moral and spiritual integration, speech activities, recreational activities, enrichment programme, dramatics, education for cooperation, education for leadership and democratic living, outdoor education, and education for thrift. A personal development inventory was also constructed. It covered physical, emotional, social and leadership aspects and the attitude towards life. Relationship of participation and achievement of pupils in cocurricular activities with their personal development was determined in three ways—(i) by matching two groups of pupils on the basis of intelligence—one group is chosen from high group of schools and the other from the low group of schools, the schools being categorised as high and low on the basis of provision which they had for cocurricular activities and the personal development of the two groups was compared by computing the critical ratios; (ii) by finding the coefficients of correlation between the total scores and scores in different aspects of pupils' participation and the total scores and the scores on the personal development inventory; (iii) by finding the critical ratios of difference in the personal development of high and low groups of pupils (the terms 'high' and 'low' were used on the basis of the pupils' participation and achievement).

Some of the important findings were as follows: (i) participation of pupils in cocurricular activities is generally poor; (ii) it is highest in 'enrichment programme' and lowest in 'education for thrift'; (iii) pupils getting better facilities for participation have better personal development; (iv) participation in the aspects of social and welfare activities, physical education, literary activities, and speech activities is better related with personal development than other aspects; (v) provision of cocurricular activities in schools is highest in the aspect of 'speech activities' and the lowest in cooperative activities; (vi) provision of cocurricular activities in schools is not well utilised by pupils; (vii) the boys are more developed than the girls; (viii) the pupils develop a more philosophical attitude towards life because of participation in cocurricular activities; and (ix) participation in cocurricular activities is highly related to curricular development.

353. *PASRICHA, P. and DAS, S. K., A Study of the Written Vocabulary of the Sixth Class Children in Delhi Schools, CIE, 1959.*

This study has made preliminary attempts at the analysis of the written vocabulary of the children studying in the sixth grade of Delhi schools.

A sample of 527 students from twelve different schools was selected. There was an equal representation of boys and girls and the three main socio-economic levels. One composition from each student was collected. The compositions were collected on a form which gave the beginning of the composition to every student and after which the students were free to write as they liked. The compositions were analysed for the count of total vocabulary and the counts on the different kinds of words used. Comparisons on all the scores were made on the basis of sex.

It was found that (i) girls are advanced in their language when compared with the boys of the same class and background; (ii) this superiority of girls is consistent and spread over all the categories considered in this study; (iii) children coming from the upper SES show a superiority over those coming from the lower SES; and (iv) the proportion of the different kinds of words is the same for every group of SES. The conclusion drawn from this study was that the development of language passes through the mere accumulation of words and proceeds on to the mastery of some of them, thus adding to the repertoire of correct vocabulary of the child. With better environment and stimulation the child completes this process sooner than the children with poorer environment can afford to do.

354. *PATANKAR, K. A., Teaching Marathi as a Regional Language to Non Marathi-speaking Pupils studying in Standard III in the Anglo-Indian and the English-Teaching Schools in the City of Bombay and its neighbourhood. A Critical Study of the present plan, the course, and the books prescribed, Ph.D. Edu., Bom. U., 1964.*

The main aim of the present study was to develop and evaluate improved methods of teaching and reading Marathi for non-Marathi speaking pupils and to construct a new material for the same.

A critical study of the existing textbooks in Marathi was made and it was revealed that these books had certain drawbacks demanding immediate attention. On the basis of this study new material was prepared with suitable vocabulary. Special attention was paid to the structure of the sentence. A novel feature of the present arrangement was the provision of the workbook in preprimary class which has taken care of all the basic pedagogic principles. At regular intervals provisions were made in the work-books for tests in letter recognition, vocabulary, word comprehension, sentence comprehension, recognition of structure of these sentences, knowledge, etc. While giving lesson with the newly developed textbooks and workbooks teachers used improvised teaching aids like wall charts, word and sentence slips, flash cards, and supplementary books.

355. *PATOLE, N. K., A Study of Teaching of Science in Rural Primary Schools—Standards I to VII, Ph.D. Edu., Poona U., 1967.*

The study was undertaken to explore the existing weaknesses of teaching science in primary schools and devise methods for improvement in the existing situation. It is delimited to rural areas mainly. The following objectives were kept in view: (i) to study the existing facilities available for teaching of science in rural primary schools; (ii) to frame general science syllabus for standards I to VII; (iii) to study the effectiveness of activity based method and traditional method of teaching the subject; (iv) to suggest measures which can help improve the teaching of science in rural primary schools. The area selected for the study was the entire Kolhapur district.

The whole work was divided into three major parts. The first part was devoted to achieve the first objective. A sample of 100 schools was taken and a questionnaire was given to the schools. The school questionnaire covered all aspects of teaching of science such as syllabus, teachers, pupils' work, laboratory equipment, etc. A teacher questionnaire was given to about 550 teachers from the above schools and also to about 550 trainees in selected primary training colleges to find out their difficulties in implementing the syllabus, methods they follow, etc., and spot observation study was made in fiftyone schools. In the second part an effort was made to evolve general science syllabus for classes I to VII based on the following criteria of pupils' interest and needs of the society. An interest study of 2000 pupils studying in class VII was taken up and 16808 items were collectd from them. To know the needs of the society, 200 rural family heads were interviewed. These two investigations were used for framing the general science syllabus for classes I to VII. In addition to this, a comparative study of existing science syllabi in different states of India was done. The new syllabus followed a concentric approach in the following broad areas, viz., (i) human beings, (ii) plant life, (iii) animal life, (iv) weather, (v) machines. A list of scientific equipment required for the course was also given. The method aspect of teaching science was studied in the third part. The controlled group technique was used. A pretest was given to both the groups. It was found that there was no significant difference between the groups. Monthly plans of the syllabus to be covered were given to teachers. Teachers of experimental groups were given a plan of activities to be performed. An effort was made, as far as possible, to control all other factors except teaching methods. An achievement test was administered after four months. The experimental group performed well and the difference in the performances of the two groups was significant.

The following are some of the important findings of the study : (i) about seventyfour percent teachers and sixtyone percent trainees are of the opin-

ion that science should be a separate subject from standard I and should not be integrated with social studies in the first four grades; (ii) sixty percent of the teachers have passed their P.S.C. examination, thirtynine percent have passed the S.S.C. examination and the remaining have taken higher education; (iii) the average number of pupils per teacher in standard I is 73.40 which gradually decreases in upper standards and in standard VII it comes to 27.27; (iv) only ten schools possess a complete set of equipment for the practical demonstration of experiments; (v) none of the schools has a separate science room; (vi) none of the schools subscribes to any periodical devoted to scientific knowledge and information; (vii) there is no significant difference in the boys and girls as regards interest in science; (viii) the number of questions asked by pupils decreases as they advance in age; (ix) the topics in which pupils seem most interested are our body, health and hygiene, mechanics, diseases, heat, senses, air, water and food for plants; (x) the topics in which pupils showed less interest are pests on plants, seasons, insects, fishes, other animals, reproduction of animals, and reproduction of human beings; and (xi) the activity based method was found superior to the traditional one.

356. *PILLAI, K. K., A Survey of Teaching Mathematics in Secondary Schools in Kerala, Ph.D. Edu., Ker. U., 1970.*

This study sought to survey the various aspects of mathematics instruction in secondary schools of Kerala with the following objectives: (i) to study the aims of teaching mathematics in the context of socio-economic conditions; (ii) to study how far the syllabus in mathematics reflected the objectives sought; (iii) analysis of the content in mathematics textbooks; (iv) to study the methods and techniques followed in teaching mathematics; and (v) to study the professional preparation of the mathematics teachers.

Data were collected through the study of literature in mathematics, mathematics textbooks, syllabus published by the Government of Kerala from time to time, and discussions carried out with various people connected with the teaching of mathematics. Questionnaires were administered to the heads of the institutions and the teachers of mathematics to collect information.

The findings of the study revealed that : (i) no syllabus published since 1932 gave any objective of teaching mathematics but syllabi published in 1962 and 1964 gave the objectives of teaching mathematics in secondary schools; (ii) the syllabus framed reflected the objectives of teaching mathematics to a large extent though improvements are needed in certain areas; (iii) the mathematics syllabus followed in the secondary schools of Kerala is superior in certain respects when compared with the syllabus followed in Tamil Nadu and Andhra Pradesh but it is far below the level of the syllabus suggested by the NCERT; (iv) it is incomparable with the syllabus followed in U.S.A. and U.K., the standard of the content is superior in these countries; (v) the content of the mathematics textbooks reveals that algebra taught does not imply functional value of the subject and both analytic and synthetic methods of teaching mathematics are poorly expounded; (vi) many schools do not have facilities to teach graph, lack in instrument boxes and other mathematical models; (vii) reference books in mathematics are rarely found in the libraries of the schools; (viii) about ninetyseven percent of the teachers handling classes in mathematics are having degree in mathematics and are trained in the methods of teaching mathematics; (ix) many teachers lack knowledge of modern trends in teaching mathematics and are not familiar with modern mathematics books and literature; (x) home assignments are given in mathematics, but only thirtyseven percent of the teachers correct them; (xi) teachers complain that they do not have adequate time for handling all aspects of teaching; and (xii) seventyfour percent of the teachers report that the curriculum is heavy in mathematics while fiftyeight percent feel that the methods followed do not inculcate the necessary enthusiasm and interest in the pupils.

357. *PILLAI, K. S., An Investigation into the Changes in the Content and Scope of the Primary and Secondary School Curriculum in Kerala during the last thirty years (Since 1934) with a view to ascertaining how far these have been helpful to the raising of standards, Ph.D. Edu., Ker. U., 1968.*

The objectives were to find out whether the changes brought out during the last thirty year period were helpful for raising standards of education and if they are not adequate enough, to suggest steps which should improve standards further.

A comparison of the prescribed syllabi, question papers and examination systems, textbooks prescribed for study, administration reports and reports of the expert committees appointed from time to time in Kerala was made. Based on these findings an opinion survey was conducted to elicit the views of teachers, heads of schools, administrators and educa-

tional experts regarding the various issues that might crop up.

Investigation revealed that schooling period in Kerala is of ten years, at the end of which is conducted a solitary external examination. Three language formula is in vogue in the schools with Malayalam as the medium of instruction since 1946. Its syllabus was revised in 1962, but people feel that there is still scope for improvement in it. English is taught as second language, its syllabus has been considerably reduced over years. Syllabus of Hindi which is taught as third language has been made heavier and in line with the expected standard. Standard of mathematics has been falling and its syllabus needs immediate revision to make it keep pace with the time. Practical bias and fusion programme are noteworthy features in general science. It appeared that in the light of aims and outcomes listed, the syllabus fulfilled the basic requirements as far as its contents are concerned. The question papers set in the examinations showed the extent of the content tested every year. It showed that the standard of achievement in English has fallen whereas that of Hindi risen and that of Malayalam remained more or less constant. Question paper coverage in mathematics was found to be exhaustive. The ability to discriminate between essential and non-essential and deep knowledge of subject matter were needed to score high in science subjects. Training in setting objective questions and improved scoring procedures were definitely going to help in raising the standards of examinations. Nationalised textbooks have been found cheaper and therefore accessible. Their preparation should be entrusted to the experts and these should be revised after every three years by committees of experts.

358. PIRES, E. A., and KATYAL, K., Building up a Social Studies Curriculum for the CIE Basic School, CIE, New Delhi, 1957.

The purposes of the study were: (i) to develop a social studies curriculum suitable for junior Basic classes; (ii) to demonstrate how Basic school teachers can and should develop their own curriculum; and (iii) to show how current events can be woven into the social studies curriculum at junior Basic stage.

The social studies curriculum was developed on the basis of items selected, based on daily experiences of the pupils and the important current events. The syllabus was chalked out for each week with the help of teachers and pupils and put into practice. The work was done in each of the four grades (II to V) in each week. An attempt was also made to evaluate the attainment of the pupils by administering specially constructed tests based on the syllabus covered.

The syllabus for the social studies for grades II to V for the CIE Basic school was developed. The specially constructed 'Social Studies Achievement Test' based on the syllabus covered, gave the scores ranging from twentynine percent to eightyfour percent for grade II, from thirty percent to eightynine percent for grade III, from twentytwo percent to seventyfive percent for grade IV and from twentysix percent to eightythree percent for grade V.

The tests generally represent only the information part of the curriculum and do not attempt to cover all that has been done in the social studies. They exclude activities altogether.

359. PRASAD, N. K., Educational Value of Hindi Folk Literature with special reference to the Role of Bihar, Ph.D. Edu., Pat. U., 1970.

The present study considered the educative value of Hindi folk literature with special reference to the role of Bihar and its place in the future curriculum.

In the seven chapters the topics, viz., educative value, needs of the state and education, nature and subject matter of folk literature, idiomatic phrases and proverbs, folk tales, folk songs and quizz or riddle, were discussed one by one elaborately, dividing the main topic into appropriate subheadings.

The present study found that : (i) folk literature will help make a good citizen—an urgent need of present day India; (ii) it will influence future education to attain completeness; (iii) to reorientate the present curriculum on a psychological basis, the wealth of our folk literature should be fitted into it; (iv) the folk culture and folk literature of Bihar have an elemental force in them; (v) outward and inner significance of idiomatic expressions and proverbs indicate their educative value; (vi) folk tales of Bihar have got an immense educative value; (vii) the folk songs of Bihar can be classified into different categories and these have their educational importance alongwith their deep influence on Hindi poetry; (viii) the riddles have historical basis and have ample literary, psychological and educational importance; and (ix) over and above the 'three language formula', the folk language and literature should not be yet another burden on the young learners, but it should be placed in the curriculum in such a way as to be a delightful source of inspiration to the educand.

360. RAHMAN, N. A., Reading for Pleasure, CIE, 1959. (MOE financed)

The purpose was to provide a suitable focus for investigation and to conduct research in the problem of encouraging reading for pleasure.

An implementation committee was set up which recommended that seven schools should be taken up in the pilot project and two classes of about fifty students each were to be selected from each school, of which one was to be the 5th, 6th or 7th and the other 9th or 10th. Mainly Hindi reading material was to be tried out in the lower class and English in the upper class.

The steps suggested for encouraging voluntary reading were improvement of the school library, book exhibitions, provision of reading for pleasure in the school time-table, evaluation and review of the work. The project was conducted in the selected seven schools, two sections from each school provided fourteen in all with a total of 435 boys and 179 girls. The total number of books read by these 614 children was 5523, giving an overall average of nine books per child. Some of the significant steps to popularise the reading activity in the selected schools was providing children with a list of famous authors and their books with some comments; reading out passages from these books in the classrooms; inviting children to read and report on a good book to the whole class; and placing a 'reading project box' in the classroom containing fifty to hundred books. The recording of the children's liking was done on a five point scale, the categories being 'not at all', 'very little', 'not much', 'much' and 'exceedingly'. The information on the cards was then transcribed to provide the relevant frequency distributions.

The evidence of the teachers in the experimental schools showed that a taste for good literature was developing amongst the children and they had started reading a large number of magazines and journals in the school library. They were also demanding more books and good stories had been selected for dramatisation by the children.

However, the motivation for reading was not sustained throughout the project period at the same pitch. The pilot project has revealed a real paucity of good English language books in the school libraries.

361. RAIZADA, P., A Study of the Patterns and Problems of Typewriting Education in Indian Schools (with special reference to Secondary Schools in M.P.), Ph.D. Edu., Vik. U., 1972.

The main purposes of the present investigation were: (i) to gain a clear perspective of the present situation of typewriting education, particularly instructional part, in the context of a brief historical development of typewriting education in India and (ii) to determine the necessary changes to improve the teaching and learning of typewriting. The objectives of the study were: (i) to review the significant periods in the history and development of typewriting education; (ii) to analyse the patterns, practices and problems of teaching typewriting in the state of Madhya Pradesh; (iii) to determine changes that might be necessary to make teaching more meaningful to the students of typewriting; (iv) to design a 'model programme of typewriting education' in Indian schools; (v) to determine a suitable and scientific keyboard for Hindi typewriter; and (vi) to study the possibilities of "Art in Typewriting"—as a new skill.

The sample consisted of the typewriting and commerce teachers of secondary schools in Madhya Pradesh and 200 students to assess letter frequency in Hindi language. Fifty employers, stenographers, teachers, and students of typewriting formed the sample of the pilot study. The data were collected through : (i) review of publications, reports and records; (ii) a questionnaire; (iii) two rating scales; (iv) a proforma to assess letter frequency in Hindi language; and (v) a visit to five leading schools offering typewriting in the state of Madhya Pradesh. The scores were converted into percentages for further interpretations. A brief history of the development of typewriting in general and in India in particular has been traced.

Some of the important findings of the study were : (i) the analysis of secondary board syllabus reveals lack of significant and realistic purposes and goals of typewriting instruction; (ii) in the state of Madhya Pradesh the instructional programme of typewriting is mainly in the hands of private typewriting institutes; (iii) no systematic effort has been made so far to develop a course content in typewriting on scientific lines; (iv) the quality of course content, methods of teaching, methods of evaluation, typewriting teacher, and layout and equipment need great improvement; (v) the keyboard of Hindi typewriter is far from satisfactory and needs immediate improvement; (vi) the time allotted in schools for typewriting instruction is inadequate; (vii) the typewriting students in comparison to nontyping commerce students are above average with regard to their achievement and grasp; (viii) eightysix percent of the teachers feel that typewriting theory course should also be included in the syllabus; (ix) generally, typing teachers do not have practical experience of a typist's or stenographer's job; (x) more than fifty percent teachers want that art in typewriting should

be included in the course of study at secondary level; (xi) nearly 67.61 percent teachers want that the Hindi typewriter keyboard should be rearranged on scientific lines; and (xii) nearly 77.15 percent teachers feel that the number keys on the keyboard should be in Hindi. A list of objectives of typewriting education at higher secondary level is developed. The present study has made an important contribution of 'The Simplified Keyboard', which presents a most radical change in Hindi typewriter keyboard. Faster, more accurate and less fatiguing typing can be attained in much less learning time through this improved keyboard.

362. *RAJAGOPALAN, S., A Critical Study of the English Curriculum at the Primary and Secondary Stages of Education in the Madras State (Tamil Nadu), Ph.D. Edu., Anna. U., 1972.*

The main purpose of the present study was, in the light of present position of English in Tamil Nadu, to examine and identify inadequacies in respect of objectives of teaching English, present English syllabus, textbooks used, audio-visiual aids available, methods of instruction followed, organization of English curriculum and the administrative barriers in implementing it, the evaluation procedures utilized, and to suggest remedial measures in all respects.

The normative survey method was used in the study. The tools comprised three sets of questionnaires, interviews and documentary analysis. The views of the teachers of English at the first stage, those of the supervisors of education at the second, and the opinions of the parents at the third and final stage, were gathered by questionnaires. Parents not knowing English were interviewed. As many as one hundred secondary and 104 primary and upper primary schools were involved in the study. The sample was randomly selected at all the three stages. The data were analysed by appropriate statistical techniques.

The findings of the study revealed that : (i) nearly 29.3 percent English teachers are untrained; (ii) majority of teachers and supervisors are yet out of the pail of inservice training; (iii) majority of the teachers, supervisors and parents supported English to be compulsory at school stage; (iv) use of translation method, poor knowledge of English on the part of the teachers have caused the fall in standard of learning English; (v) inadequate syllabus, unsuitable textbooks and very poor methods of instruction are some of the most potential factors in deteriorating the learning situation; and (vi) appointment of subject inspectors for English, offering two courses in the subject--one ordinary and the other advanced, identifying proper objectives of teaching English, use of structural method of instruction and use of suitable audio-visual aids, proper training of teachers, and scientific evaluation of pupils' performance in the subject with more stress on internal assessment and less on public examination are some of the major remedial measures suggested.

363. *RANGACHAR, C. and KULKARNI, S. N., Provision of Teaching Facilities for English at Class V level in Mysore State, M.E.S. Teachers' College, Bangalore, 1967. (NCERT financed)*

The aim of the study was to find out the prevailing facilities for teaching of English with a view to diagnosing its deteriorating standards. Four types of facilities were probed into, namely,(i) the equipment of the teachers of English language, (ii) the methods they know and follow, (iii) the aids they have and (iv) extent of the students' knowledge of English.

In all, 150 representative schools situated in different districts of the Mysore State were selected. Required information was obtained by (i) actual observation of classes when the teachers were engaged in teaching English; (ii) administering questionnaires to the teachers and inspecting officers to ascertain their practices, facilities, and requirements; (iii) holding discussions with them; and (iv) administering the language ability test to the students of standard VI. This test was constructed by the investigators which measured language ability in (i) oral comprehension, (ii) written comprehension, (iii) pronunciation, (iv) reading, (v) vocabulary and (vi) structures.

The findings of the study revealed that a microscopic minority of students had picked up the elements of English. Most of them did not know the spellings of simple words. A vast majority of them did not know the alphabets fully. They could not answer simple questions. They could not read words like 'cap', 'call', 'father', etc. Their pronunciation habits revealed a bewildering variety transcending any imaginable pattern. Their ignorance in each of the skills of language (hearing, speaking, reading and writing) was uniform. English was taught as knowledge subject like history, geography, etc. In the given method of questions and answers, oral work was conspicuous by its absence. For most of the teachers, the objectives of teaching English were not very clear. They could not even rate the language skills in order of their importance. Most of the teachers were unaware of the good "methods" of teaching English. The "Grammar and Translation" me-

thod was followed sometimes even without the knowledge of its principles. Most of the schools had neither school libraries nor any aids in language teaching.

364. RAVAL, R. T., The Basic Vocabulary of Gujarati Children of the Age of 12 plus, Ph.D. Edu., Bom. U., 1959.

The objective was to find out the recognition and reproductive vocabulary of Gujarati children of twelve plus.

In order to prepare the reproduction vocabulary 129 topics were collected with the help of twenty question papers and the suggestions of ten experienced teachers. Of these thirtyfive were selected. On consultation with the pupils twentynine topics were finally selected for essays and five for letters. One essay and one letter were specially written for the purpose by 240 children from Bombay and 1060 children from Gujarat, studying in standard VI of fortyseven schools. Their average age was twelve years. Word lists according to frequency and grammatical classification were prepared. To prepare the recognition vocabulary, six approved Gujarati textbooks were analysed and the data were supplemented by material drawn from related literature and previous researches on the subject. The 1967 different words noted in the recognition vocabulary were classified according to their grammatical form and then according to their 'Tatsama, Tadbhava or Deshya.'

In the recognition word list, 95.73 percent were content words. In the reproduction word list, this percentage was only 69.26. The first 1000 words in both lists were further classified as substantive or words denoting objects, words conveying an idea or denoting an individual, words connoting a quality, action words, words representing the idea of a definite dimension, measure, size, number of numerical order, words of place, time, interrogation and miscellaneous words. After giving oral tests to children, consulting experienced teachers and comparing with Vakil's list, a final list of 1134 words was formed. Tests involving similars, opposites, matching, and filling in blanks in sentences were prepared. Two hundred and ninetytwo children from eight schools were tested for 666 words. Paragraph tests were also devised for difficult words and given to 102 children from two schools. The frequencies in reproduction and recognition vocabularies for each word were compared after finding the words common to both the lists. Lists of words not common to the two vocabularies were also prepared.

365. RUKMANI, R. C., A Study of Children's Vocabulary, Ph.D. Edu., Raj. U., 1960.

This study sought to survey children's Hindi vocabulary. The aims were:(i) to assess the vocabulary of children of age group seven plus reading in the second grade in the schools of Rajasthan on the basis of the results; (ii) to assess the vocabulary used in the nationalised textbooks of the second grade; (iii) to undertake a comparative study of (i) and (ii); (iv) to evolve criteria for vocabulary suitable to the children of age group seven plus reading in the second grade; and (v) to compare the range of vocabulary of boys and girls of age group seven plus.

The study was confined to the spoken vocabulary only. The sample consisted of twenty children of seven plus reading in the second grade and ten children of eight plus reading in the third grade from five different schools in and around Udaipur. Normative survey method and observational method were used for finding out the spoken vocabulary of the children. The spoken vocabulary of the children of eight plus was prepared so as to make out a list of words falling within the appreciation level of the children of seven plus. The spoken vocabulary was collected with the help of various stimuli in the form of pictures of homes, school and playground, story narration and consequent relevant conversation. Each child was observed for a total period of two hours which was divided into five intervals. The first interview was of fifteen minutes and was conducted to establish the rapport with the child. Words spoken by the child were taken down. The duration of the second, third, and the fourth interviews was thirty minutes each. Home-situation pictures and relevant conversation, school situation pictures and relevant conversation and play-situation pictures and relevant conversation were used as stimuli for the second, third and fourth interviews, respectively. The duration of the fifth interview was fifteen minutes and the child was required to narrate a story. The vocabulary was studied in all these interviews. Twenty lists of spoken vocabulary of children of seven plus and ten lists of vocabulary of children of eight plus were prepared. A consolidated list of words of the former consisted of 1232 words analysed and arranged with reference to frequency. Four preference lists were prepared. The first list comprised sixtyfive words having seventyfive to hundred percent frequency, the second one contained 123 words having fifty to seventyfour percent frequency, whereas the third one contained 424 words having twentyfive to fortynine percent frequency. The fourth list included 622 words having one to twentyfour percent frequency. Out of

the 1232 words, 771 were nouns, 241 verbs, 112 adjectives, twentyfour pronouns and eightyfour other words. The vocabulary of children of eight plus was analysed. The total number of words given by these children was 1647. These words were arranged according to the frequency. The words which occured in the list of seven plus were eliminated from this list. Thus the total number of words given exclusively by children of eight plus was found to be 430. Out of these, words having 1 percent frequency were deleted Thus 208 words were upto the level of children's apperception and hence were considered suitable for inclusion in the second grade textbook. It was found from the analysis of the nationalised textbook for the second grade that there were 424 nouns, 149 verbs, 108 adjectives, twentyseven pronouns and 113 other words.

The important findings were as follows : (i) The total number of words in the consolidated list of the spoken vocabulary is 1232, whereas it is 821 in the nationalised textbook. The difference of words indicates that the collective vocabulary output of the children (different number of words known and used by them) is much more than the words included in the textbook. (ii) In spoken vocabulary and textbook vocabulary the nouns predominate, the percentage being 62.58 and 51.85, respectively. (iii) The textbook vocabulary was assessed in the light of the basic vocabulary and the apperception lists. The total number of words common to both the lists was 436 (52.85 percent of the textbook vocabulary and 35.40 percent of the basic vocabulary). (iv) Out of the other words included in the textbook, other than these, 124 words were known to the selected sample of children and eightyone words were of the apperception level of children of seven plus. The inclusion of the remaining words in the textbook cannot be justified. It is suggested that (i) the size of the textbook vocabulary may be increased; (ii) a higher percentage of words from children's spoken vocabulary as well as that from the apperception list be included in the textbook; and (iii) the selection of words from the list of basic vocabulary should be done in order of preference.

366. SAMANT, B. B., A survey of Teaching of Mathematics in Secondary Schools with special reference to Bombay Province, Ph.D. Edu., Bom. U., 1944.

The objective of the study was to have a critical examination of the various practices of teaching mathematics in secondary schools with a view to locating the limitations and drawbacks and making certain observations to improve the same. This study was limited to the state of Bombay.

The data were collected from the matriculation examination results from years 1931 to 1943, matriculation marks of about 18,000 candidates who took examination in 1938, matriculation marks of 9,129 candidates from 22 good schools for the years 1936 to 1943, and marks of 11,827 pupils in secondary schools in the annual examinations; the results of 2,000 candidates who appeared for mathematics examination for the second time; the case study of 294 students out of 2,000 whose progress could be traced continuously from classes I to VII, in the same school. In addition, questionnaires of various types were administered to headmasters, teachers and pupils. Analysis of the question papers, mathematics textbooks, and the qualifications of teachers who taught mathematics and finally the study of the common mistakes in mathematics committed by the students were carried out.

The study revealed that: (i) the analysis of the matriculation results showed that the percentage of failures in mathematics was very high; (ii) nearly 85 percent at matriculation level and 90 to 95 percent at the annual examination level in schools invariably failed in more than one subject; (iii) the percentage of cases who failed in mathematics alone and mathematics plus other subject(s) was quite high; (iv) detention of the students in various classes did not help improving them in mathematics; (v) liberal promotions helped to get better results in matriculation; (vi) students' dislike for mathematics was found to be one of the main causes for their failure in that subject; (vii) the dislike for the subject was more noticed in higher classes than in the lower classes; (viii) the subject matter as presented, weakness in English (the medium of instruction) and poor teaching were found to be the main causes for disliking the subject; (ix) the home work in mathematics was poorly planned; (x) private tuition did more harm than good; (xi) confusion in method and application of the formulae, teachers' speed, the why of each step and lengthy calculations were some of the causes of poor performance in mathematics; (xii) nearly 46 percent of the teachers were found to be unqualified to teach mathematics; and (xiii) the analysis of the instructional material revealed that there was a need for rearranging the topics with definite aims.

367. SAWANT, T. T., Composition Writing in Marathi in Primary Schools of Greater Bombay, Ph.D. Edu., Bom. U., 1970.

The purpose of the investigation was to study composition teaching and its different aspects, examine childrens' writing and explore ways to improve the teaching of the subject.

An intensive analysis was made of 3,874 compositions written by 2,948 children of twentyseven Municipal Marathi schools. Information regarding the assessment of composition was collected from fortyseven other schools. The necessary details were collected through (i) questionnaire sent to teachers and students; (ii) composition written by children throughout the year under the supervision of the class teacher; (iii) composition written by children on the subject of their own choice; (iv) an experiment in handwriting; (v) an experiment in orthography; (vi) observation of teachers' work; (vii) interviews with the teachers; and (viii) using the valuable experience of the researcher as a primary school teacher. A composition scale as a tool for assessment was prepared in consultation with 700 teachers of fortyseven schools. In preparing the composition scale, the following points were considered : (i) expressing one's own thoughts and ideas; (ii) expressing one's own feeling; (iii) writing legibly; (iv) following rules of orthography; (v) writing as many lines as required. The scale was prepared by getting a piece of composition assessed by 100 teachers once by their own methods and second time in terms of the above five aspects and by having discussions on the two types of assessment.

The following were the observations made : (i) purpose, subject and style of composition change with time and teachers are highly influenced in teaching composition by the essayists in respect of subject matter and style of writing; (ii) the subject of composition related to science is responded to scantily due to the dearth of first-hand knowledge; (iii) the pupils' choice of topics vary with age; (iv) regarding the feelings expressed in the composition, children of standards I to III do not express, while those of standards IV to VII express in a very scattered and unsystematic manner; and (v) if asked to express their feelings in their composition, children of five to seven years express them through their liking and disliking, but the expressions of children of eight to twelve years have some depth.

368. SHANKER, L., An Investigation into the Basic Hindi Vocabulary of Children of Sixth Class (usually 11+) in the State of Haryana, Ph.D. Edu., Kur. U., 1971.

The aims of the study were : (i) to take a stock of the basic comprehension vocabulary of children; (ii) to provide the text book writers a glossary of words with the difficulty values so that they can prepare graded textbooks and extra-reading material for sixth grade; (iii) to help teachers, radio speakers to be understandable to majority of pupils; and (iv) to help teachers in preparing diagnostic tests for children with retarded language development.

The sample for the first phase of the study consisted of 297 boys and 103 girls of grade VI. Four word lists were prepared from 520 new content words which were collected in consultation with teachers and books for grades IV and V recommended by the Punjab Education Department in 1966 and the NCERT in 1967. The lists were administered to the students. The words which had corrected proportion of 0.70 and above were selected. Finally, a list of 303 words remained. In the second phase, 2,418 content words were selected from textbooks and supplementary books for children of grade VI, prescribed by Haryana and the Punjab Education Departments and the NCERT and words used in speech and writing. Two hundred and seventeen words from the first phase were distributed into sixteen checklists each containing 150 to 180 words with five alternate responses. These checklists were administered to each class cluster in pairs by distributing them to alternate students.

As a result of the analysis, two glossaries of words were prepared. Glossary I contains words from textbooks of grades IV and V, known to seventy percent students. Glossary II contains words from sixth grade textbooks, writing and speech of the students and also words known to less than seventy percent students of the lower classes. These alphabetically arranged lists show the percentage of students who know the meanings.

369. SHARMA, S. L., Finding of Basic Hindi Vocabulary of Children of Class IV (Essentially in the State of Haryana), Ph.D. Edu., Kur. U., 1972.

The purpose of this study was to find out the basic Hindi vocabulary of the class IV students of the state of Haryana.

The sample consisted of 1400 class IV students (1 percent of the population). The stratified representative sampling method was used. A large number of words were collected from different sources containing the vocabulary of class IV students. After screening these, 1627 words were finally chosen and arranged alphabetically. These were then divided into twelve check-lists. The responses of 1400 students to each word were recorded. The percentage of students knowing each word and the limits of confidence were found out from the data.

The findings were as follows. With regard to some words the percentage of correct responses was low, meaning thereby that these words were difficult. Similarly with regard to some words the percentage was found to be high, indicating that these words were relatively easy. The total number of words having a percentage of less than thirty was 146 (difficult), and percentage above seventyone was 231 (easy) and there were 1250 words ranging between thirtyone and seventy percent which were considered usable or more suitable for the class IV. A glossary of 1627 words with their difficulty value is also given at the end of the study.

370. *SHUKLA, S.K., Problems of Translation and the Implications of its Use as a teaching device with special reference to the teaching of English to Hindi speakers, Central Institute of English and Foreign Languages, Hyderabad, 1968.*

The major aims of the study were to examine the problems involved in the process of translation and the implication of its use as a teaching device. The study was made with reference to English-Hindi translation. It was hypothesized that the study may indicate the way in which the translation device of teaching a second language should be used.

The problems of translation were examined by observations on the comparison of a few translations with their originals. For comparison four works of English and Hindi were taken. Then the attempt was made to contrast some of the systems operating in the structural grids of Hindi and English to examine the specific problems that were involved in English-Hindi translation. The theories of categories and scales as set up by Halliday were also used.

The major findings and conclusions of the study were: (i) The translation device can be used as an aid to create meanigful context. It does not replace contextual teaching. (ii) This device is not a complete method of teaching a second language. It concerns itself with the presentation and practice of language items. (iii) This device cannot be adequate in teaching items which do not have their equivalents in the pupils' first language. The teacher using this device must be aware of the limitations of translation. (iv) This device should not exclude other devices used in presenting language items whenever necessary.

371. *SINHA, A. K., Remedial work in English for Pre-University and First Year Degree Studies in Hindi-Speaking Areas, Central Institute of English and Foreign Languages, Hyderabad, 1967.*

The aim of the project was to identify exactly which areas of English language teaching needed most immediate attention for remedial work at the pre-university class and first year degree stage in Hindi speaking areas. The aim of the investigation was locating the difficulties of these students in expressing themselves in written English with accuracy and correctness, finding out reasons for difficulties and also effective measures which would help the students in acquiring minimum skill for taking down notes in the colleges, preparing synopsis of the articles and books and expressing themselves coherently and intelligibly in English.

The project was confined to remedial work mainly needed in the field of morphology and syntax. For the purpose of error analysis, different universities, secondary, higher secondary and intermediate examination boards in Hindi speaking areas were asked to send English composition papers of all the above four categories. About 1000 scripts were collected and out of them 550 were scrutinised. Out of them 300 were of P.U.C. students, 200 of first year degree students and 50 of B.A. (final) students. For error analysis, essay questions of the scripts were examined. The errors were classified into fourteen categories with several subdivisions such as (1) determiners; (2) verbal forms and their patterns; (3) wrong verb usage; (4) prepositions; (5) nouns; (6) adjectives; (7) pronouns; (8) concord; (9) syntactic patterns; (10) conjunctions; (11) spellings; (12) punctuation; (13) lexical and (14) unclassified errors.

The major findings were: (i) Under 'determiners' 93 percent of the errors were in the use of articles, most of those were due to the failure to differentiate between a particularised and non-particularised context and between a countable and uncountable noun. (ii) Under 'syntactic patterns', the mistakes were mostly at the 'clause' level, omission, wrong word order, or insertion of unwanted elements. (iii) The

errors under 'prepositions' involved wrong choice, omission or insertion. The prepositions most frequently involved were 'in', 'to', 'on', 'at', 'of', 'with', and 'from'. (iv) Mistakes under 'concord' were mostly related to the lack of concord in number (a) between a finite verb and its subject, (b) between a noun and a related noun or pronoun, (c) between a determiner or modifier and the lead word, and (d) between a pronoun and its referent. (v) Mistakes of 'verb usage' were usually due to the choice of a wrong tense form. Most mistakes were related to the replacement of the simple present and the simple past tense forms by other forms in connected writing, over and above the areas such as spelling, lexical and punctuations, where errors were found to be the most frequent.

372. *SRIVASTAVA, B. K., Differences in Curricular Learning, Ph.D. Edu., Gor. U., 1968.*

The aims were (i) to identify the important characteristics of achievement of students in different areas of curricular learning; and (ii) to study the effect of intelligence and sex on the achievement of students in different areas.

As many as 1745 students studying in class XI were randomly selected from selected institutions situated in rural and urban areas of the six districts namely, Gonda, Faizabad, Basti, Gorakhpur, Deoria and Azamgarh of East Uttar Pradesh. Achievement tests in Hindi, science, history and drawing were constructed and administered to the students. Reliability of total tests and of different areas of each test, were calculated by Mosier's formula and split-half method. Content validity of the tests was taken for granted. Concurrent validity of the tests was calculated with the help of teachers' rating and marks secured by the students in the tests. The skewness and kurtosis of the distributions were calculated using Fisher's 'K' statistics. Two-way analysis of variance was used to study the effect of sex and intelligence on the achievement. Correlations between different areas of the tests were calculated and factor analysis was done. The treatment revealed factors responsible for the functional relationship between the areas.

The results of the study were: (i) in a few areas, intelligence and sex have significant influence on achievement; (ii) in Hindi, the identified factors are 'Piece-meal Memory Factor' which helps a person in remembering separate specks of facts, 'Memory Factor of Integrated Wholes', and Miell's 'Globalization factor', (iii) in science, the identified factors are 'Numerical Factor', 'Factor much needed for grasping principles' and 'Mastery of facts'; (iv) in history, the identified factors are 'General History Factor', 'Space Factor', and 'Factor of Human Aspect of History'; and (v) in drawing, the identified factors are 'Colour Harmony', 'Factor of Free Expression on the basis of space relation' and a factor of 'Meticulousness'.

373. *TAMHANE, S. N., Basic Vocabulary of Marathi-speaking Primary School Children, University Training College, Nagpur, 1965. (NCERT financed)*

The purpose of the investigation was to determine the list of most common and essential words in Marathi language which could be considered the formation-vocabulary for the students in the age group 6 to 8 and 8 to 10.

A sample of 8000 children of standards I to IV of primary schools of eight districts of Vidarbha region was selected which provided a sample of 3000 for the age groups 6 to 8 and 5000 for 8 to 10.

Observation under controlled conditions, free-play situations, and specially organised situations along with oral and written work sheets, were used to identify reproductive vocabulary and recognition vocabulary of the children. Only those words which had a frequency of 70 percent or more, were retained. For determining the basic vocabulary, counting of the words was done according to proforma and principles suggested by Rev. T.C. Kocing. The basic vocabulary list included words of structural value in sentence construction which every child of the age of ten years irrespective of sex, was expected to acquire.

The study showed that: (i) the total general vocabulary for the age group 6 to 10 was 4550 words; (ii) the total reproductive vocabulary for the lower age group 6 to 8 was 1705 words; (iii) the total recognition vocabulary for the same age group was 755 words; (iv) the total reproductive and recognition vocabulary for the lower age group (6 to 8) was 246 words; (v) the total reproductive vocabulary for the higher group (8 to 10) was 1057 words which formed a part of the general vocabulary of the lower age group; (vi) the recognition vocabulary of the higher age group was 2090 words (excluding the words of lower age group's general vocabulary); and (vii) the tentative basic word list contained 2043 words and the basic vocabulary contained 1,135 words.

374. *THEODORE, K., An Evaluation of the Study of English Poetry among Indian Students, Ph.D. Edu., Madras U., 1957.*

The study aimed at making an objective assess-

ment of appreciation of English poetry by a selected group of Indian students.

The critical value approach was used whereby, from among the supposedly significant values, those which might be fruitfully emphasised by the Indian students of English poetry, were arrived at through the consensus of opinion of people intimately concerned with education in the Indian context. A preliminary study using essay method, was done on a group of 495 subjects drawn from senior intermediate and preuniversity classes. Following the preliminary survey, a questionnaire embodying the values to be assessed was prepared and administered on a sample of 318 male and 288 female students studying in intermediate and preuniversity classes in Madras State.

Some of the salient findings were: (i) the students feel that the value of studying poetry is real and aesthetic; (ii) reading poetry gives pupils an enjoyment and capacity for literary appreciation; and (iii) it enables pupils to acquaint themselves with poetic minds.

375. *TIWARI, D. D., Effects of Making English Optional at the High School and Intermediate Stages, GCPI, Allahabad, 1971.*

The objectives of the project were to assess the effects of making English optional on attainment of students and to determine the place of English in the present curriculum.

In order to find out the present position of English and the rise or fall in its standards, twentysix institutions in the state, such as main universities, some degree colleges, intermediate colleges, medical and technical colleges, Board of High School and Intermediate Education,Uttar Pradesh, were contacted. Necessary proforma was prepared and sent to the concerned institutions to collect the relevant data. Out of twentysix institutions only ten institutions responded.

From the information collected, it was found that: (i) The number of candidates offering English at the high school and intermediate examinations of the Board of High School and Intermediate Examination, Uttar Pradesh, was decreasing year by year. On the contrary, in the same year overall results in both the examinations went up by 0.4 percent and 9.93 percent in the high school and intermediate examinations respectively. In English, the percentage of passes went up by 6.6 and 10.85. (ii) In the universities, the number of candidates offering optional English had gone down, although the results in the subject had gone up from 85.2 percent to 85.29 percent in 1968. (iii) The number of candidates decreased and the pass percentage on the whole, as weil as in English, as a subject, rose from 82 and 69 in 1967, to 86.5 and 79.0 in 1969 in B.A. and B.Sc. classes. (iv) So far as intermediate classes were concerned, they too held the above contention. (v) The medical colleges in the state were in no way affected by this decline in the popularity of the subject as the candidates selected by them were good at English. (vi) The State Public Service Commission also did not keep English as the sole medium of examination and permitted the candidates to answer questions in Hindi too. It was concluded that in the social, political and economic situations prevailing in the country now, English cannot retain its old position. It cannot be taught as a compulsory language but it can safely be retained as an optional or as additional optional subject at the high school and intermediate levels. Looking to the needs of the time, the position of English in the curriculum is to be kept as it is. At the university stage too, it cannot be kept as a compulsory subject because of the demand for lectures to be delivered in Hindi in all the subjects.

376. *VAKIL, K. S., Basic Vocabulary of Gujarati Children of the Age 11 plus, Ph.D. Edu., Bom. U., 1955.*

The objective of the study was to find out the recognition and reproduction vocabulary of children of eleven plus.

To prepare the recognition vocabulary, the necessary data for the purpose were collected from a scrutiny and tabulation of words used in four commonly used Gujarati textbooks for standard V, by the method of word count. Arranging all the different words in the four readers alphabetically and according to descending frequency, eight tests of 1,000 words each, were prepared. A sample of 362 words, after dropping over simple words and also those with highest frequency, was presented to three groups of five students each — advanced, mediocre and poor for purposes of testing the list. In a second similar test, a selection of 437 words was made from the first 5,000 words on the basis of difficulty, frequency and personal experience. On the basis of the English vocabulary tests, four different types of Gujarati vocabulary tests with 1,075 words, were prepared by fixing the time limit. The tests were administered to 461 children of ten schools. On the basis of the tryout, the final list was prepared. As regards the reproductive vocabulary, written work was given to 996 pupils of twelve schools from rural and urban areas. They were requir-

ed to write a composition on any of the thirtythree given topics of narrative, descriptive and reflective types. The running word count of 906 of these compositions which came to 1,03,113 words showed the use of 4,025 different words. The words were then classified according to frequency, grammar, Tatsama, Tatbhava and other words from foreign languages, topical classification of nouns and verbs.

The recognition and reproduction vocabularies of children of eleven plus thus consisted of 7,932 and 4,025 different words, respectively. The words were again classified according to their grammatical form.

377. VASANTHA, A., A Study of Work Values of Higher Secondary Students of Delhi in relation to their Intelligence, Achievement and Socio-Economic Status, Ph.D. Edu., Del.U., 1972.

The study was conducted with a view to finding out the relationship between the work values and some other variables, in the higher secondary students of Delhi. More specifically, the objectives were: (i) to construct the work value inventory, (ii) to see whether a value stage could be discovered in the secondary school pupils in India, (iii) to see whether there is any agreement or conflict between occupational values and occupational preferences, (iv) to study the influence of socio-economic status on work value, (v) to find out whether there is any difference between the work values of boys and girls, (vi) whether caste is a dependent factor in the development of work value, (vii) whether different curricular groups differ in their work values, (viii) to find out the role of intelligence and achievement in vocational development, and (ix) to study the impact of occupational information programme on work values.

The study was confined to one cultural group, namely, the Tamilians. 934 boys and girls of classes IX and X were chosen from four schools run by Madrasi Educational Association in New Delhi. Majority of them were Brahmins. The tools used were : (i) personal data sheet, (ii) the Raven's Progressive Matrices Test, (iii) achievement scores, (iv) socio-economic status scale and (v) work value inventory. The inventory consisted of seventyone statements describing fifteen work values and was in the form of a rating scale. Reliability of the inventory was calculated by test-retest method. Validity was found out by correlating the work value inventory against a shorter one prepared by the investigator herself. The treatment of the data involved the techniques of means, mean differences, correlations and chi-square analysis.

The salient findings were : (i) the first five values preferred are creativity, economic gain, associates, personal goals, and prestige; (ii) the least preferred work values are adventure, power, surroundings, variety and social welfare; (iii) by and large, occupational values are in consonance with occupational preferences; (iv) eight out of fifteen work values, show significant sex differences; these are power, adventure, associates, economic gain, surroundings, creativity, personal goals, and prestige; (v) only for four values, namely, associates, economic gain, variety and job freedom, there are significant grade differences; (vi) adventure, associates, variety, job freedom, creativity and personal goals are the six work values for which there are significant curricular differences; (vii) intelligence correlates significantly with six work values, namely, adventure, associates, job freedom, creativity, personal goals and family; (viii) three values, namely, economic gain, surroundings and family correlate negatively with intelligence; (ix) achievement scores also do not correlate significantly with work values, except for family; all the correlations are positive and out of these only seven, viz., adventure, associates, variety, job freedom, creativity, personal goals and prestige are significant; and (x) no socio-economic differences for any one of the work values are perceived.

378. VEERAPPA, N. S., Trends in Science Education, D. Ed. Edu., Mys.U., 1958.

The purpose of the study was to examine the present position of science education in India and to assess the new trends in the field, as observed in some of the advanced countries like U.S.A., U.K., etc. An attempt has also been made to interpret these trends with a view to finding how far they could be introduced in Indian institutions.

Schools, colleges of education and other institutions were visited. The programme of secondary education including the training of science teachers was also studied. To have a correct estimate of the British Secondary Education, the institutions selected for study included those which were situated in different parts of U.K. The new trends and directions in science education were discussed with the teachers and the heads of the institutions. They were compared with the similar trends in U.S.A.

The major findings of the study were: (i) science education is introduced at the primary level and that general science has replaced nature study; (ii) the science course mainly consists of topics like food, air, water, atmosphere, and environment, etc; (iii)

general science course at primary level has not been very popular due to lack of qualified teachers; (iv) the minimum qualification for a teacher at this level is matriculation with science subjects; (v) the courses in secondary schools generally include physics, chemistry and biology; (vi) the practical work in physics and chemistry is intended for the last two grades and that too, for only those who take science as an additional subject; (vii) the government secondary schools have better equipped laboratories than the other schools; (viii) the minimum qualification for a teacher in a secondary school is first university degree in science; (ix) the popular way of teaching science in secondary schools is Herbartian plan; (x) dividing science instruction into theory and practicals is one of the reasons for the inefficiency; (xi) efforts are being made to procure and develop better teaching aids; (xii) teachers generally adopt lecture-demonstration method for teaching science; (xiii) few schools are having science clubs; (xiv) examination papers are generally loaded with essay type questions; (xv) instruction in science at intermediate level is far below the standard of the degree college level which is resulting in wastage; (xvi) the method of teaching at the degree college level is lecture-cum-practicals; and (xvii) equipment in the laboratories is either inadequate or of poor quality.

379. *VISHWAMITRA, J., A Comparative Study of Hindi and Telugu Phonetic Sounds (with reference to Telugu of Guntur District and Hindi of Agra District), Central Hindi Institute, Agra, 1969.*

The aim of the study was to compare Telugu and Hindi phonetic sounds based on philology and present an analysis of similarity and dissimilarity in them with a view to making teaching and learning Hindi and Telugu phonetic sounds more systematic and useful.

Materials for the study were collected with the help of indices. Materials thus collected were written in phonetic transliteration and analysed. Phonetic laboratory was made use of whenever necessary. Subject matter was presented by descriptive and comparative methods. In order to make classifications, headings and subheadings were given along with the use of active method. The Hindi and Telugu sounds were confined to words only. The study compared Hindi and Telugu phonetic sounds on their vowel and consonant conditioned phonemes. Telugu and Hindi alphabet patterns were also compared on sequence of phonemes.

Based on linguistic point of view, comparing Hindi and Telugu phonetics and presenting an analysis are a great help in language teaching.