

**A SURVEY OF
RESEARCH IN EDUCATION**

Educational Research in India

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Educational research should aim at obtaining by experimental methods, knowledge about the educational practices and processes which could be used for reconstructing the educational programme of our country. Research as a guide to developing new practices has been accepted more in agriculture than in education, even though education, like agriculture, is an applied science. The researches in humanities and social sciences and specially in the latter field have a determining influence on educational practices. To the extent the educational practices do not develop on the basis of research, the educational process lags behind other social sciences. It is, therefore, necessary that periodic reviews be made of the status of educational research in a country to study the trend of development as a guide to future action. Few can doubt the need for an efficient system of dissemination of educational research. Apart from its utility to research workers in universities, periodic benchmark surveys of educational research may reveal the trend in the development of research in various aspects of education. This may also indicate the existing gaps in educational research to which the aspiring researchers and research institutions may pay attention. Not much has been done in India to survey the status of educational research. The University Grants Commission (UGC) reviewed the position of education in the Indian universities in the early 60's. In the late 60's the National Council of Educational Research and Training (NCERT) published the Third Indian Year Book of Education on educational research, edited by S. B. Adaval. The publication of this volume is a sign of the growing awareness, on the part of Indian educationists, of the need for making a broad review of educational research providing 'an objective assessment of what has been

achieved or in the process of being achieved in the pursuit of our national goals in education'. The Indian Council of Social Science Research (ICSSR) initiated a major programme of surveying the researches in social sciences with a view to identifying gaps and priorities. Under this programme 'A Survey of Research in Psychology' has already been published, which includes a large number of studies in the area of educational psychology. The need, however, remains for studying the educational research in Indian universities and research institutes in a comprehensive way.

EARLY YEARS

✓ Education as a subject for study did not find a place in Indian universities till 1917, when the Calcutta University Commission made a positive recommendation that a department of education with a professor and a reader be set up in each university to promote systematic and practical study of the science and art of education. It also stressed that this department should function in close collaboration with those engaged in the related practical areas, that it should also avail of opportunity to consult and collaborate with departments of educational psychology, philosophy, history, economics, etc. The commission had envisaged that the department would develop into a centre in which educational problems could be studied in their entirety by utilizing fully the theory and methods of other fields which have something to offer to the understanding and solving of these problems. The recommendations of this commission are of great significance in the history of the development of educational research in this country. It was the beginning when universities and con-

cerned people started thinking seriously about education and educational research. The universities at Aligarh and Banaras started departments of education. A significant progress could be observed when the Bombay University started the M.Ed. course in 1936. The degree was to be obtained through research. It was followed by the Allahabad University which offered M.Ed. in 1943. In this course, some research was necessary for partial fulfilment of the requirements. Gradually, other universities started offering such courses. In 1951, sixteen universities had facilities for M.Ed. degree including Calcutta University offering a two-year full time M.A./M.Sc. course in education and within a few years, more than fifty universities started offering these facilities. In a majority of universities some sort of research was needed to qualify for the M.Ed. degree. In most of the universities a programme on research methodology was also introduced at the M.Ed. level. This course provided the orientation in techniques of research and also practical training.

Even though the departments of education were established in Indian universities, these departments identified themselves more with teacher education than with education. This is clearly evident from the fact that, with a few exceptions, only scholars qualified to be school teachers could study education at the post-graduate level. A study of the titles of M.Ed. dissertations also validates this. In terms of quality, the research done by M.Ed. candidates has not been of much significance. The introduction of the research programme offered by the education departments at the M.Ed. level is, however, significant for two reasons, viz., (i) it provided an opportunity to the staff of the education departments and some of training colleges for guiding research students in education and thereby developing their own expertise to undertake and guide research in a better way and (ii) it developed a core of scholars, some of whom undertook educational research at a future date.

After the introduction of the M.Ed. courses, the universities gradually started providing facilities for research leading to Ph.D. in education. The Bombay University was the first to provide such facilities when it introduced the doctoral course in education in 1941 and it awarded the first Ph.D. degree in education in 1943. The Lucknow University was the next to award the Ph.D. degree in 1949. Gradually, other universities introduced educational research leading to Ph.D. and by 1972, about fifty universities provided facilities for Ph.D. level research in education.

RESEARCH INSTITUTIONS

Before independence, educational research remained confined to the individual efforts of some persons who worked for their degrees in education. The main reason for such a situation was that the then existing system of education was only an imposition from outside and not rooted in the soil of the country. Under the circumstances, there was not much scope for experimentation in education. And, therefore, research work remained confined to the limited purpose of obtaining a degree. Only after people started talking about a national system of education in the 40's of the present century, education began to be seen in its wider perspectives of national needs. During this period more serious thinking was done about the educational problems and some institutions took initiative to undertake educational research projects in their respective regions. The first attempt at providing facility for educational research at the all-India level was made after independence when the Central Institute of Education (CIE) was established in 1947, at Delhi. Its main purpose was to conduct research on educational problems and to offer training, particularly of an advanced nature, to teachers and other educational personnel. This was a landmark in the history of the growth of educational research in India. The CIE was supposed to function at the all-India level and find solutions, based on research, to the problems that had come up as natural consequences after the attainment of independence. The educational research at the CIE was expected to be of immense help in solving the problems of education, in the light of the new demands of the society and the needs of the country by utilizing not only the resources of the CIE, but also by drawing upon the resources available in different training colleges in the country. The CIE, in brief, was visualized to be an institution of research, which would provide leadership to other institutions and would also collaborate with their staff to undertake research at the all-India level so as to enable the decision-makers to modify the programme of education to suit the needs of a developing country.

After 1947, the rapid expansion of education; the changed and enhanced aspirations of the people in the community, the scientific and industrial developments, and other social and political developments threw up many new challenging problems which demanded urgent attention to tackle them scientifically. An increasing need was, thus, felt to strengthen the research activities of the CIE and to establish certain other central institutions in the spe-

cialized areas of education. A psychological wing was, thus, attached to the CIE to expand its research programmes. In 1954, two more institutions were established, viz., the Central Bureau of Textbook Research (CBTR) and the Central Bureau of Educational and Vocational Guidance (CBEVG). The main function of the CBTR was to conduct research on various aspects of textbook production. The CBEVG undertook mainly the training of guidance workers for schools, and also conducted some research in that area. In 1955, the All India Council for Secondary Education (AICSE) was established and later on converted into the Directorate of Extension Programmes for Secondary Education (DEPSE), in 1959. It did not do much educational research, but organized mainly inservice and extension programmes for secondary school teachers.

As the consideration of bringing about qualitative improvement in education had been of primary concern, it was considered an essential function of institutions at the centre to undertake developmental activities for the same. Research programmes of all the central institutes were primarily geared to this goal. To strengthen this function, the Central Examination Unit was created in 1958 within AICSE which organized many workshops to orient teachers and paper setters in the techniques of evaluation. This unit concentrated on the practical work of developing a large pool of objective type items in various subjects and in orienting teachers to new techniques of evaluation, mainly to train them to write objective type items with a view to improving examination system in the country by making it more objective based and, thereby, increasing its validity. The AICSE introduced a scheme of experimental projects to encourage schools to undertake research on educational problems. Not much research of any high standard could be done under this scheme, but it aroused, in teachers of schools, an awareness to realize the need to improve the educational practices and encouraged them to try innovations in education which could be introduced, particularly, without much financial resources.

In early years of independence, need for evolving a national system of education suited to our needs was increasingly felt. Gandhi's concept of Basic Education was before the country, but its adequacy and efficacy were not proved to the satisfaction of all. It was, thus, decided to study various aspects of Basic Education scientifically and the National Institute of Basic Education was started in 1956 for conducting, coordinating and encouraging research in Basic Education. Another central insti-

tution, viz., the National Fundamental Education Centre was established in 1956, which was mainly to work in the field of adult education. In 1959, the National Institute of Audio-Visual Education was set up. This institution mainly provided training in audio-visual education to teacher educators. One could, thus, notice that during the first two plan periods many specialized institutions at the centre were established to undertake research and development work in education. But these institutions functioned more or less in an isolated manner and could not make the expected impact on Indian education. It was felt that there should be a better coordination between various activities of these institutions so that educational problems could be studied in their entirety. It was also realized that these institutions could function more effectively if they were put together under one single organization with greater freedom of operation. As a consequence of this thinking, the National Council of Educational Research and Training (NCERT) was established in September 1961 as an autonomous organization by amalgamating all these specialized institutions in education at the centre. The NCERT became the premier institution in the country to conduct and promote educational research. This was a very significant development for the growth of educational research, as the NCERT with its adequate resources could undertake research projects on various aspects of education on a large scale to understand scientifically the whole educational process.

Under the NCERT, the National Institute of Education (NIE) was created, which organized through its various departments the research and development activities in different areas, viz., curriculum development, teaching learning process, evaluation, teacher education, teaching aids, teaching methods, adult education, special education for gifted children, etc. The NCERT also established four Regional Colleges of Education at different places in the country. They started functioning during 1963-64. The primary objective of each college was to become a centre of excellence in teacher education, to provide extension services to the training institutions in its area and be closely involved in programmes of improving within its region the school education in general and teacher education in particular. They were supposed to undertake major researches and experimentation in the field of teacher education to evolve suitable and effective teacher training programmes.

Corresponding to the developments at the centre during the 50's, one could see the counterparts of the central institutions coming up in states. Some

states established Departments of Audio-Visual Education, Bureaux of Textbook Production and Curriculum Research, Bureaux of Educational and Vocational Guidance and Evaluation Units. To have more coordinated efforts, the State Institutes of Education were set up in the 60's in many states. The major functions of the State Institutes of Education are to conduct research in various aspects of education and to provide inservice training for teachers and other personnel in the state. To make them more effective, in some states, State Councils of Educational Research and Training have been established by amalgamating various institutions in the state.

A significant development in the growth of educational research can be observed in the last decade when the UGC introduced a scheme in 1963 for developing a limited number of university departments for advanced research and training in certain selected fields. The scheme is intended to encourage the pursuit of excellence and team-work in studies and research, and to accelerate the realization of international standards in specific fields. The Department of Education of The Maharaja Sayajirao University of Baroda was recognized by the UGC in November 1963 as the Centre of Advanced Study in Education (CASE). Since then, the CASE has been functioning as a research institution at all-India level. It has completed many research projects in the areas of evaluation and measurement, curriculum development and language learning. The Centre is presently concentrating its research efforts on: (i) teaching, teacher behaviour and teacher education, (ii) programmed learning, (iii) innovations and educational change and (iv) micro-teaching. There are provisions for research fellowships to scholars pursuing their research at doctoral and post-doctoral levels.

Apart from universities and other government institutions, there are a few voluntary organizations of professional people that are working in the field of education to promote research. One such organization is the Indian Association of Teacher Educators (IATE) which was established in 1950 as the All India Association of Principals of Training Colleges. In 1964, the association opened its doors to all staff members of secondary training colleges and in 1965, it included within its fold, all types of teacher educators. Its main aim is to work and cooperate with other organizations and institutions for the improvement of teacher education in particular and education in general. Since its inception, it has been continuously thinking about and

working for the improvement of education and the growth of educational research. In 1972, the IATE met at Coimbatore for its annual meet to plan research in education with special reference to teacher education. It has its own professional journal, 'Teacher Education', which is published regularly. This provides a forum for publishing research findings and other theoretical and practical issues related to education. Publication of professional journal is a positive contribution to the growth of research.

The Indian Association for Programmed Learning (IAPL) is another organization at the all-India level, set up in 1967. The purpose of the IAPL is to advance the techniques, application and methods of programmed learning as a means of furthering scientific knowledge of the learning process and improving the rational basis of teaching. As a result of its efforts, the techniques of programmed learning are being studied in various institutions for their wider application for the training of children, youth and adults in schools, universities, industries, defence and banks. The IAPL publishes a journal 'Shaikshik Takniki' which, besides being a channel of communication among the members of the association, reports such empirical studies which may be of interest to researchers, programmers, and users of programmed learning materials.

Another non-official institution that has contributed to the growth of educational research in India is the South India Teachers' Union (SITU). It established the SITU Council of Educational Research which was registered at Madras in 1956. It is mainly supported by teachers. During the period of last seventeen years of its existence, it has organized educational research studies in various areas, viz., teaching methodology, educational administration, examinations, and curriculum development. It has also undertaken some surveys about educational facilities. It organizes inservice programmes for teachers to keep them well informed about the latest developments in educational world. The Council receives annual grants for its research activities from the Madras, Annamalai and Madurai universities and for special projects from institutions like the NCERT. It has its own journal also to publish research findings and the views of individual scholars on educational issues.

Certain other institutions also, which are not primarily meant for conducting educational research, have undertaken researches on selected problems of educational significance and have made significant contributions. Some of these institutions are Indian Council of Medical Research, Institute of Economic

Growth, Gokhale Institute of Politics and Economics, U.P. Bureau of Psychology and Tata Institute of Social Sciences. Researches conducted in university departments other than that of education and the institutions mentioned above, have no doubt, contributed towards a better understanding of educational processes, but one cannot help having a feeling that very little effort has been made for enriching educational research by bringing together various disciplines. The researchers in education have drawn upon the knowledge of other disciplines, yet it cannot be said that these disciplines have been fully integrated with regard to the approach to educational research, and to its contents and interpretation of the results arrived at. Universities, by and large, have not shown much interest in studying the educational problems in its various departments. The problem becomes more acute in the light of the fact that a few researchers from other disciplines who undertook research projects on educational problems do not have an adequate background of the aspects of education; the educational researchers who are mostly from the departments of education and training colleges do not have thorough grounding in other subjects related to education. When seen from this point of view, it appears to be a case for rigorous efforts to make educational research an interdisciplinary endeavour to understand educational processes in their entirety.

RESEARCH SCHEMES

During the First Five Year Plan, more training colleges began to take interest in undertaking educational research. They were further encouraged by schemes of the Union Ministry of Education and Scientific Research, which were initiated to make the staff of these colleges and departments of education research minded and to stimulate researches which could immediately be useful in toning up secondary education in the country. The first scheme was introduced during the First Five Year Plan and financial assistance was provided to the approved projects. As a result of this scheme twenty different institutions of teacher education took up thirty research projects on various educational problems. Work on some of these projects continued during the Second Five Year Plan also when the scheme was further expanded. In the beginning of this plan, seven new projects were undertaken. In 1957-58, thirtyfive research projects were received for approval. The projects received under these schemes were screened and recommended for grant in the annual 'seminars

on promotion of research in training colleges' held in 1956, 1957 and 1958 at Ootacamund, Bangalore, and Srinagar, respectively. These seminars were significant for a number of reasons: (i) they provided an opportunity to scrutinize the projects from methodological point of view, (ii) they facilitated better coordination and avoided duplication of work, (iii) the progress of projects could be reviewed in the light of practical difficulties faced and experiences gained, and (iv) they served in creating a corporate climate to tackle the problems of education in the country from the research point of view. In 1961, the scheme was transferred to the NCERT. Under the NCERT, a large number of projects have been completed so far.

Educational research was promoted by other agencies also. They provided finance to colleges of education and education departments of universities. The departments of education of various states supported educational research through state institutes of education and other institutions set up for this purpose. There is wide variation in the quality of such researches. Certain research projects have not been well thought out, designed carefully and executed properly, although some research projects are of worth.

Ph.D. RESEARCH

Although educational research at Ph.D. level started in early 40's, its rapid growth is witnessed during the last two decades. Upto 1950, two universities, viz., Bombay and Lucknow, together produced nine Ph.D.s. From Table 1 one may see at a glance the gradual introduction of facilities for Ph.D. research in Indian universities and their rapid expansion during the first four Five Year Plans. During 1951-55, the Bombay University expanded these facilities considerably; five more universities, Allahabad, Banaras, Bihar, Delhi and Baroda also provided such facilities during the same period. The Bihar University awarded its first degree in as early as 1953. Upto 1955, the growth of educational research at Ph.D. level in Allahabad and Bombay has been remarkable. They produced twenty-six Ph.D.s, whereas all the other five universities providing research facilities could produce only six by that time. By 1960, eight new universities, viz., Agra, Karnatak, Madras, Mysore, Nagpur, Poona, Rajasthan and Saugar began to provide research facilities for Ph.D. in education and within five years, the number of Ph.D.s became almost double of what it was in 1955. As can be seen from Table 1, educational research at Ph.D. level started expand-

TABLE 1

NUMBER OF Ph.D.s FROM EDUCATION DEPARTMENTS OF THE UNIVERSITIES IN INDIA FROM 1943 TO 1972

Sr. No.	Name of the University	Year of first award	Upto 1950	1951 to 1955	1956 to 1960	1961 to 1965	1966 to 1970	1971 to 1972	Total number
1.	Agra	1959	—	—	1	4	9	1	15
2.	AMU	1966	—	—	—	—	2	1	3
3.	Allahabad	1952	—	5	2	5	3	1	16
4.	Annamalai	1968	—	—	—	—	1	1	2
5.	BHU	1954	—	1	3	—	2	—	6
6.	Bihar	1953	—	1	—	—	1	—	2
7.	Bombay	1943	8	13	10	15	10	1	57
8.	Calcutta	1961	—	—	—	3	4	2	9
9.	Delhi	1954	—	1	4	3	10	4	22
10.	Dibrugarh	1972	—	—	—	—	—	1	1
11.	Gauhati	1969	—	—	—	—	4	2	6
12.	Gorakhpur	1967	—	—	—	—	6	4	10
13.	Gujarat	1962	—	—	—	2	5	4	11
14.	I.I.T., Kharagpur	1962	—	—	—	1	—	—	1
15.	Jabalpur	1965	—	—	—	1	2	1	4
16.	Jiwaji	1968	—	—	—	—	2	—	2
17.	Karnatak	1958	—	—	1	1	—	—	2
18.	Kerala	1965	—	—	—	1	6	6	13
19.	Kurukshetra	1971	—	—	—	—	—	5	5
20.	Lucknow	1949	1	1	3	3	2	—	8
21.	Madras	1956	—	—	3	7	1+1	—	11
22.	Meerut	1971	—	—	—	—	—	2+	2
23.	MSU	1955	—	1	4	9	14	13+1*	42
24.	Mysore	1958	—	—	1	1	—	—	2
25.	Nagpur	1960	—	—	1	1	1	2	5
26.	Osmania	1968	—	—	—	—	2	—	2
27.	Panjab	1966	—	—	—	—	6	2	8
28.	Patna	1961	—	—	—	3	7	—	10
29.	Poona	1957	—	—	3	—	5	—	8
30.	Punjabi	1970	—	—	—	—	1	—	1
31.	Rajasthan	1960	—	—	1	1+3	2+1	—	6
32.	Sambalpur	1971	—	—	—	—	—	1	1
33.	Saugar	1959	—	—	1	3	3+2	—	7
34.	Saurashtra	1970	—	—	—	—	1	1+2*	4
35.	SNDT	1971	—	—	—	—	—	1	1
36.	SPU	1964	—	—	—	1	8	7	16
37.	Udaipur	1968	—	—	—	—	1	6	7
38.	Utkal	1967	—	—	—	—	4	—	4
39.	Vikram	1964	—	—	—	2	2	3	7
40.	Viswa Bharati	1971	—	—	—	—	—	3	3
Total			9	23	38	69	125	75+3*	342

* Studies conducted in 1973

ing with more and more universities providing such facilities. It will also be noticed that after 1950, in every subsequent interval of five years, the number of Ph.D.s produced in all the universities put together became about double the number produced in the preceding interval of equal duration. The Bombay University has produced the highest number of Ph.D.s covering about seventeen percent of the total Ph.D. research in the country; it is immediately followed by the Maharaja Sayajirao University of Baroda which has considerably expanded research facilities during the last one decade and produced so far fortytwo Ph.D.s which is about twelve percent of the total Ph.D. research in education in this country. These two universities thus account for ninety-nine Ph.D.s which is about thirty percent of the total educational research at the Ph.D. level in the country. Next in order are Delhi, Allahabad and Sardar Patel Universities. Delhi has produced twentytwo Ph.D.s, whereas the other two have produced sixteen Ph.D.s each. These five universities, viz., Bombay, Baroda, Delhi, Allahabad and SPU together have contributed about fortyfive percent of the total research in education at the doctoral level.

It has been found that upto 1947, the year of independence, four Ph.D.s were produced by the Bombay University. In other universities educational research developed only after independence. It is, however, encouraging to note from Tables 1 and 2 that the quantum of production of Ph.D. has increased considerably during the last two decades. It is expected to expand still further in future. It is worth noting that recently institutes like the Indian Institute of Technology (IIT) and the Indian Agricultural Research Institute (IARI) have also encouraged educational research and produced a few Ph.D.s on problems related to education. In the last decade, a steep rise has been noticed in the number of Ph.D. studies. Of the 294 Ph.D. theses approved from 1943 to 1971 (Table 2), seventy were approved upto 1960 (Table 1). Remaining 224 were accepted between 1961 and 1971.

Apart from the research at the Ph.D. level in education, there have been research studies at doctoral level in other departments, viz., psychology, economics, sociology, history, philosophy, English, Hindi and agricultural extension in which problems of educational significance have been studied. Among the disciplines which have been brought to bear upon educational research, psychology has been the most predominant, followed by sociology. Table 3 shows the number of Ph.D. studies on educational problems from these disciplines. This indicates a very healthy trend that educational problems are being studied

TABLE 2

DISTRIBUTION OF Ph.D. THESES IN EDUCATION APPROVED BY VARIOUS UNIVERSITIES DURING THE PERIOD FROM 1943 TO 1972

<i>Years</i>	<i>Number of Ph.D.s</i>
Upto 1947	4
1948-50	5
1951-53	13
1954-56	13
1957-59	22
1960-62	31
1963-65	51
1966-68	66
1969-71	89
1972	45
Total	339+3*

* Studies completed in 1973.

TABLE 3

Ph.D. STUDIES ON EDUCATIONAL PROBLEMS FROM DEPARTMENTS OTHER THAN EDUCATION

<i>Discipline</i>	<i>Number of Ph.D.s</i>
Psychology	82
Sociology	14
History	6
Others	16+1
Total	118

even by scholars who have specialized in disciplines other than education.

It may be noticed from Table 4 that Ph.D. studies in education have covered a variety of topics from different areas. In the beginning, however, most of the studies have been on philosophy of education, history of education, and curriculum development. After 1950, the coverage of topics for Ph.D. has considerably expanded and researchers have shown increasingly greater interest in taking up research problems that are psychological in nature. Tests and measurement is an area with the highest number of studies to its credit — fortytwo. In these studies, mainly psychological tools have been developed. Another area, viz., educational evaluation and examinations, has contributed thirtythree studies. In these researches also, most of the investigators developed achievement tests. Tool development alone has covered about twentytwo percent of the total research. Personality, learning and motivation is another important area which has contribut-

TABLE 4
DISTRIBUTION OF Ph.D. STUDIES IN EDUCATION IN DIFFERENT AREAS

Sr. No.	Area	Upto 1950	1951	1956	1961	1966	1971	Total	Percentage
			to 1955	to 1960	to 1965	to 1970	to 1972		
1.	Philosophy of Education	2	6	4	3	6	2	23	6.7
2.	History of Education	2	1	6	11	9	6	35	10.2
3.	Sociology of Education	—	—	1	5	8	5	19	5.8
4.	Personality, Learning and Motivation	—	3	6	6	14	7	36	10.5
5.	Guidance and Counselling	—	1	2	5	6	2	16	4.7
6.	Tests and Measurement	—	3	3	8	22	6	42	12.3
7.	Curriculum, Methods and Textbooks	4	2	6	2	12	9	35	10.2
8.	Programmed Learning	—	—	—	—	2	3+1*	6	1.8
9.	Correlates of Achievement	—	1	—	8	7	6	22	6.4
10.	Educational Evaluation and Examinations	1	2	3	7	11	7+2*	33	9.6
11.	Teaching and Teacher Behaviour	—	1	—	2	2	9	14	4.1
12.	Teacher Education	—	—	—	4	12	7	23	6.7
13.	Educational Administration	—	3	5	7	11	5+1	31	9.0
14.	Economics of Education	—	—	1	—	1	1	3	0.9
15.	Social and Adult Education	—	—	1	1	2	—	4	1.1
16.	Educational Surveys	—	—	—	—	—	—	—	—
Total		9	23	38	69	125	75+3*	342	100.0

* Studies conducted in 1973

TABLE 5
DISTRIBUTION OF NON-Ph.D. RESEARCH PROJECTS IN DIFFERENT AREAS

Sr. No.	Area	Upto 1950	1951	1956	1961	1966	1971	Total	Percentage
			to 1955	to 1960	to 1965	to 1970	to 1972		
1.	Philosophy of Education	—	—	—	—	—	—	—	0.0
2.	History of Education	—	—	—	—	1	—	1	0.8
3.	Sociology of Education	—	—	3	4	7	2	16	5.6
4.	Personality, Learning and Motivation	—	—	—	1	3	3	7	2.6
5.	Guidance and Counselling	—	1	2	3	9	2	17	6.3
6.	Tests and Measurement	—	3	3	3	9	1	19	7.1
7.	Curriculum, Methods and Textbooks	—	—	6	5+1	16+1	6+3	33	12.3
8.	Programmed Learning	—	—	—	4	7	2	13	4.8
9.	Correlates of Achievement	—	—	—	2	8	—	10	3.7
10.	Educational Evaluation and Examinations	—	3	10	26	18	3	60	22.3
11.	Teaching and Teacher Behaviour	—	—	1	1	2	—	4	1.5
12.	Teacher Education	—	—	3	4	9+5	3	19	7.1
13.	Educational Administration	—	1	4+4	3+2	9+1+1	3	20	7.4
14.	Economics of Education	—	—	1	1	4	—	6	2.2
15.	Social and Adult Education	1	—	—	—	10	2	13	4.8
16.	Educational Surveys	—	—	3	3	21	4	31	11.5
Total		1	8	36	60	133	31	269	100.0

ed to the extent of about eleven percent. History of education, curriculum, methods and textbooks and educational administration are other areas which have contributed fairly high. Study of pupils' achievement and its correlates has interested the researchers considerably, especially after 1960 and it has contributed about six percent to the total research. Philosophy of education is also one of the areas which has been drawing continuous attention of researchers, its contribution being about seven percent. Teacher education, teaching and teacher behaviour and sociology of education are the areas in which concentrated research has started only recently. It is encouraging to note that research at the Ph.D. level has expanded considerably and covered almost all areas.

NON-Ph.D. RESEARCH

Apart from research leading to the Ph.D. degree, a number of institutions have undertaken studies under various schemes supporting educational research. Such project research started mainly in the beginning of the First Five Year Plan when the Government of India initiated its scheme to encourage educational research. Most of this research has been undertaken by the staff of the colleges of education, university departments of education and also other departments of social sciences. A few research institutes associated with professional associations and the research wings of such bodies like the state boards of education, state evaluation units, etc., have also undertaken research studies. Again, research units of the education departments of some municipal corporations, either with the financial aid from some external agencies or from their own resources, undertook institutional research to improve their own programmes. Such non-Ph.D. research was sponsored with different purposes. One of the purposes underlying the scheme of support to such research was to initiate and encourage junior staff members of university departments and also staff members of teacher colleges to undertake small scale research, thereby providing the necessary basis to build research activities in their institutions at a future date. The state departments of education and the education departments of municipal corporations undertook research with the clear purpose of providing an answer to their own problems. Some of the universities also sponsored research through their own departments with the same objective. Educational evaluation and examinations, curriculum, methods and textbooks, educational administration, teacher education and tests and measurement are some of the favourite areas of such non-Ph.D. research. Non-Ph.D. research received a spurt in 1961

when the NCERT was established. As the academic wing of the Ministry of Education, it was expected to undertake studies on some of the major national problems. The various units of the NCERT undertook such studies. Education being a state subject, the state governments felt the need for studying local educational problems. The NCERT provided its expertise to the state governments to undertake the needed studies. Again, it was one of the functions of the NCERT to encourage young researchers. To meet this end, the NCERT provided financial and academic support to a large number of institutions in the country interested in educational research. As a result of these central efforts, non-Ph.D. research developed in the country. This was further augmented through the establishment of such bodies as the Indian Council of Social Science Research, the Indian Council of Historical Research, the Institute for Social and Economic Change, the National Institute of Community Development and the Central Institute of Indian Languages. It is worth mentioning at this stage, that the professional institutions like Indian Association of Teacher Educators and Indian Association of Programmed Learning could make successful efforts to sponsor non-Ph.D. research in the areas of teacher education and programmed learning in a large number of institutions. Table 5 shows the development of non-Ph.D. research during the period under review.

TOTAL PICTURE

An overall picture of educational research completed by individuals at the Ph.D. level and also by institutions is presented in Table 6. Studies on tests, examinations and evaluation together account for twentyfive percent of the total research. The area of curriculum, methods and textbooks contributes about nine percent to the total. Next in order are personality, learning and motivation, and sociology of education (about eight percent), educational administration (about seven percent), followed by teacher education, correlates of achievement and others. From the table, one gets the idea that educational research has started covering wide areas of research to a fairly good extent. Interests of Ph.D. scholars and of institutions, however, differ with regard to selection of areas for their research, as has been indicated earlier.

OVERVIEW

In the course of the last thirty years about three hundred and fortytwo studies in education have been completed in education departments of Indian universities. In addition, about one hundred and eighteen Ph.D. studies

TABLE 6

DISTRIBUTION OF Ph.D. AND OTHER RESEARCH PROJECTS IN DIFFERENT AREAS

Sr. No.	Area	Ph. D. in Education	Other* Ph.D.s	Projects	Total	Percentage
1.	Philosophy of Education	23	5	—	28	3.8
2.	History of Education	35	6	1	42	5.8
3.	Sociology of Education	19	21	16	56	7.5
4.	Personality, Learning and Motivation	36	17	7	60	8.2
5.	Guidance and Counselling.	16	9	17	42	5.8
6.	Tests and Measurement	42	21	19	82	11.3
7.	Curriculum, Methods and Textbooks	35	1	33	69	9.5
8.	Programmed Learning.	6	—	13	19	2.6
9.	Correlates of Achievement.	22	12	10	44	6.0
10.	Educational Evaluation and Examinations	33	8	60	101	13.9
11.	Teaching and Teacher Behaviour	14	3	4	21	2.9
12.	Teacher Education	23	4	19	46	6.3
13.	Educational Administration	31	2	20	53	7.3
14.	Economics of Education	3	5	6	14	1.9
15.	Social and Adult Education	4	4	13	21	2.9
16.	Educational Surveys	—	—	31	31	4.3
Total		342	118	269	729	100.0

* Includes Ph.D.s on Educational problems from other departments of universities.

on educational problems have been completed in other departments of universities like those of psychology, sociology, history, etc. Two hundred and sixty-nine research projects have been completed at institutional level. These studies have been classified under sixteen different heads and trend reports have been prepared. These reports and abstracts of researches appear in subsequent chapters of this volume. In the following few pages, an overview of the trend reports is given.

Philosophy of Education :

India has a very long and varied tradition of philosophical thinking. But research of the empirical type has attained considerable sophistication in comparison to the philosophic enquiries. The task ahead for the philosophers is to interpret the empirical research at levels beyond that of statistics and the methods of empirical science and to draw out the implications and synthesize them. This has to be done at a much deeper level of analysis. Workers on the socio-political dimensions cannot afford to confine their studies merely to compiling ideas of Gandhi and Dewey and other thinkers. With this preamble, Manuel reviews and assesses all the twenty-eight doctoral studies in the field. It is found that three

studies have analysed the works of foreign thinkers. One researcher has studied educational thoughts of ten English novelists. There has been one comparative study on the educational thoughts of Gandhi and Dewey. There are two studies on values. The most popular topic of research in the field has been the educational philosophy of Gandhi. The other educational thinkers quite widely studied are Tagore, Rammohan Roy, Dayananda, Vivekananda, Sri Aurobindo, and Annie Besant. The other studies worth mentioning are those on educational thoughts of the Gita, the Upanishads and Shah Waliullah.

According to Manuel, the studies are only in the initial phase as far as depth and scope of treatment are concerned. He points out a serious lag or lack of communication of the research findings or research information amongst the researchers, which has led to many unnecessary overlaps as well as gaps untouched. Many a time researchers of the north, depending on the northern literature, had to lose something when certain of the work is in some southern language. The need for communication of research findings is highlighted.

History of Education :

Nurullah and Naik's pioneering work had set up a tradition over three decades ago. Their work

helped to develop a periodisation of modern Indian educational history. They provided the framework in which educational events could be interpreted in a set of dichotomies between government and private, between indigenous and western educational practices, between British and nationalist educational positions, etc. Shukla feels that post-independence work in Indian educational history has not transcended the framework of the pioneers.

Many researchers have moved in the direction of histories in states and regions either because it was felt that more data was required to test hypotheses about the development of education at the micro-level or because they had nothing new to propose beyond the work of the pioneers regarding educational history on a national plane. History and survey of districts are also available. Sectional studies of education similar in nature to problems of primary education in Kerala, Uttar Pradesh and Bombay have slight historical basis. There are studies which emphasize the pedagogic elements. The other important sector studied is technical and professional education. A general characteristic of history writing in this field has been the unfamiliarity with the various prototypes of educational institutions and practices evolved in the west and inadequate insight into the relationship of technical-professional education to economic and social history on one hand and to structure and function of higher learning, particularly, as epitomised by the university, on the other.

Women education has received ample attention. The approach in this field is not dissimilar to the general characterization of Indian educational history. More theoretical insight into the nature of the Indian family, economy and the place of women in it would have added greater meaning to the accounts available. The contribution of the church to Indian language education, rural education, vocational education, as well as religious versus secular emphasis in education has been studied by some researchers. The most promising trend in the study of history of education is represented by the efforts to apply the recent and in some cases quasi-Marxist and/or sociological understanding of modern India to the study of Indian education. The studies include the notion of a five tier social structure which is highly controversial, establishing relationship between education and political thought to construct a frame of reference, study of education in rural areas utilizing data from agro-economic surveys for understanding relationship of education with rural social structure and current efforts to modernize Indian agriculture. All these studies illustrate ways in which

history of education could make more meaning. Shukla concludes from the review of the studies that history of education in India has made only limited advances either in methodology or substantive findings. There is a need to master the focus and view point of one or more major disciplines of social sciences or humanities and to assimilate the specific understandings on educational institutions and the content provided by educational history of the west or by comparative education.

Sociology of Education :

The studies in sociology of education are of recent origin compared to researches in other areas of education. It was only in 1957 that the first doctoral study was completed. Of course, studies at the master's level date back to as early as 1926. However the tradition of advanced research in the area is not old. Thirtha and Mukhopadhyay have reviewed fifty-six studies out of which forty are doctoral studies and the rest are project studies. They have also reviewed the first exhaustive study of Chitnis (1968) where she has reviewed some eightythree studies. With some exceptions, there is hardly any overlap between the two reviews. From the review it is found that the studies form a few clusters according to their nature, viz., school as a social system, interaction between school and society, sociological studies of problems of education, cross-cultural studies, group dynamics, etc. Amongst all these, studies on schools (including colleges and other centres of higher education) stand to be more than fifty percent. Again, empirical studies on the socio-economic background of students and teachers have been done most. There has been only one study so far which includes a sample from eight states of India. We are still to get an all-India study. The other sub-areas studied in the first cluster are studies on staff relations, teacher-pupil relations, diffusion of innovations in education, etc. The work on diffusion of innovations has started lately and is gaining more and more momentum day by day. The studies in the area of interaction between education and society occupy the second place. This field has produced two types of studies — impact of education on society and impact of society on education. The studies on education in a cross-cultural setting have so far been taken up by only two researchers. For a country like India, characterized by her diversity in culture, religion, language, etc., the cosmopolitan institutional environment is unique in nature and calls forth much attention from the researchers of the future.

In general, the survey type of studies are more common in sociological fields. The studies have made use of a large number of tools. Most of the tools have been prepared in India. There is a popular tendency among the researchers to construct tools of their own although similar tools are available. As such, questionnaire is the most widely used tool. The studies have always been done on large samples which range between a hundred and a few thousand. The only exception is the study of Bhanot (1967) who has a small sample to suit his experiment. The sampling techniques have varied from different types of statistical to literal randomization.

Personality, Learning and Motivation :

Rao and Mehta surveyed fiftythree studies at the doctoral level from various Indian universities and seven projects. Of these, twentyfive studies relate to personality, seven to problems of delinquency, seven to adjustment problems and the rest to learning and motivation.

In the area of personality, the first study was undertaken in Allahabad University in 1953. Universitywise break of Ph.D. studies in personality indicates that Agra University has topped the list. These studies have covered personality of males and females, fantasy life of girls, children's reaction to frustration, development of ego-ideal in children, personality characteristics of high school boy-leaders, aggression, fear and anxiety in children, personality patterns of boys and girls, mental maturity in Indian school children, personality of students of engineering, law, medicine and teacher training, personality of students from religious and secular institutions, self-esteem, etc. Although studies on the personality of different sections of students are available, there seems to be a concentrated effort on exploring the personality of the high school and the college-going students. While the earlier studies were concerned with a mere exploration of the personality patterns of students and concentration on sex differences, the later studies have started extending their horizon to different aspects of social life from the individual personality studies.

Another significant difference between the former and the latter studies is that the latter studies have switched on to correlational methods, attempting to investigate the relationship between different environmental variables and personality variables from the earlier purely survey types. The variables that were studied in these investigations were intelligence, adjustment, sociability, sex differences, neuroticism,

aggression and anxiety, emotional stability, leadership qualities, ego-ideal, creativity, curiosity, and the like. Almost all the studies used personality inventories of standard type while a few of them developed their own for their limited purposes.

Of the seven studies that could be bracketed in adjustment category, five are directly on school adjustment of adolescent boys, one being a comparative study of bright and dull children and the other on mental symptoms of school children. In some of the studies new adjustment inventories were used which have become popular since then. One point that stands out conspicuous in these studies is that they have never gone, in their investigations, beyond survey or comparison of the adjustment patterns and the concentration is on students, as in the case of personality studies.

The studies relating to learning and motivation have not, it seems, received their due share of attention in the university departments as is evident from the number of theses available in India in these areas. The studies in the area of learning can be classified as exploratory, developmental studies in language learning and concept formation, experimental studies on learning and general studies. Concept formation in tribal people is one area which needs the attention of researchers.

The overall impression that one gathers from these studies is rather disheartening as no theoretical or practical contributions of utility to the field of education in India have been made.

Studies in motivation are recent in origin. The first doctoral study was in 1968 on the achievement motivation of young adolescent boys. The results are rather interesting and indicate relationships between achievement motivation and personal values, socio-economic status, intelligence, academic performance, etc.

A number of project studies have also appeared in the recent times on need achievement. These are not reported here as most of them are published articles. It is interesting to notice that studies in achievement motivation are developing fast. The future researchers should focus their attention on the most practical problems in education, developing theoretical constructs and models of greater utility in the field of education.

Guidance and Counselling :

Palsane and Buch have reported twentyfive Ph.D. studies and seventeen projects undertaken at different institutions. The review covers educational

and psychological problems of the blind children in the age group 7-21, development of interests of boys in secondary schools in different streams like humanities, technology, commerce and science, study of self concepts among disciplined and undisciplined students, relationships between achievement, anxiety, intelligence, etc., language and arithmetic abilities, preparation of predictive battery of tests of science aptitude, art as projective technique for deviant children, concept of mental health, study of intellectual factors among the pre-school children, educational and vocational choices among the secondary school pupils, factors governing study habits, reading interests, education of problem children, educational, social and emotional development of children, personality inventory, effect of supplementary diet on the physique of school children, construction of group intelligence tests, diagnosis of reading difficulties, testing of high school students, etc. The authors have traced the origin of guidance and counselling and how it has come to stay as an important aspect of the school programme both in the West and in India. The studies reported in the review have investigated various aspects such as developmental aspects in the students, interests and vocational choices, tests, exceptional children, and theoretical problems in guidance. In the developmental aspect it has been studied how over a period of time, height, weight, intelligence, creativity and social behaviour are changed; how motor development of Indian children, as compared and contrasted with that of the American children, takes place. Studies have also reported how growth differences are noticed due to sex, residence, etc., intellectual growth under different educational systems, and the study of aptitudes of students studying in technology and engineering courses. Interests of boys and girls regarding various streams of courses have been studied to give guidance to pursue proper courses in their collegiate and vocational education. Reading interests of boys and girls have been studied with a view to locating errors and suggesting suitable remedial measures.

Some studies, reported in this area, have undertaken the investigation of psychological factors underlying the study habits of college students. Test batteries have been constructed which could forecast pupils' suitability for a particular type of higher education or vocational choice. Self-concept and achievement motivation have been investigated to show how they are related to academic achievement and vocational choices.

One study has enquired into the study problems of superior children. This study aimed at surveying

socio-economic conditions, occupation of parents, and anthropometric characteristics of superior children. Another study, devoted to identification of gifted children, investigated their characteristics against those of the normal group. Comparison of the gifted and the non-gifted has been made with respect to their self-concept, adjustment in various areas and certain personality characteristics. The reading difficulties of students in high schools have also been studied. A few more studies have covered problems and needs of adolescents with respect to their socio-economic status, attitudes and study habits. The problems of university students in the areas—education, family, health, socio-economic, personal-emotional, etc., have been studied. In the areas of achievement motivation, it has been found that achievement motivation and intelligence are positively related while achievement motivation and test anxiety are negatively correlated.

The entire work in the area of guidance and counselling has covered only a limited ground. Work has been done mostly with high school and college students and not so much with primary school children. There is a greater scope for further research in the area of interest measurement. Since the standardised educational and psychological tests are the chief tools employed in the guidance programmes, guidance in the educational institutions will be meaningful and efficient if there is a comparable growth in the tests mentioned. In the absence of valid and reliable tools and techniques, research in guidance has no meaning.

Tests and Measurement :

The report by Mitra and Kumar regarding the researches done in the area of tests and measurement traces briefly the historical development of testing in India. Rice was the pioneer in this field who attempted to standardise the Binet-Simon test in Urdu and Punjabi. The report deals with sixty-three Ph.D. studies and nineteen institutional studies done in this field in India. Desai was the first to undertake a Ph.D. study in test construction in 1954. Various researchers have developed group tests of intelligence in many Indian languages for various age groups ranging from eight to eighteen years. Attempts have been made to adapt WISC and WAIS.

Several nonverbal tests of intelligence have also been constructed. Judging children's intelligence through their drawings has been done by Phatak and Sharma. The credit for constructing the first standardised performance test of intelligence in India goes to Bhatia. This field seems to be out of the arena

of Indian educational researchers. Systematic attempts have been made by researchers to construct tests to measure clerical aptitude, mechanical comprehension, verbal reasoning, abstract reasoning, numerical aptitude, scientific aptitude, office work aptitude, and so on. A test of social intelligence for the selection of salesmen, insurance agents and supervisors has also been constructed.

In the field of personality measurement, tests have been developed to measure traits like schizothyme-cyclothyme trait, temperamental traits and certain personality dimensions like introversion-extraversion, normal-neuroticism and normal-psychoticism. Attempts have also been made to construct tests to measure the adjustment of pupils. At the institutional level, the Centre of Advanced Study in Education, Baroda, has constructed adjustment inventories.

Most of the interest inventories constructed are adaptations of the Kuder Preference Record.

Considering this field as a whole, an increasing trend is noticeable in the number of research studies undertaken since 1950. Again, the work in this area is done mostly at Ph.D. level. There is a need for more institutional work in this area. Intelligence testing covers a major share of the total number of studies. But, as already indicated, more attention is needed for the construction of performance tests. The least work is done regarding the measurement of interests. The report of the studies done draws the attention of researchers to these gaps in the area of testing and measurement and suggests the type of tests to be constructed to bridge these gaps.

Curriculum, Methods and Textbooks :

The report by Desai and Roy is based on thirtysix studies at Ph.D. level and thirtythree research projects undertaken at institutional level. They have divided their review into the following sections : general curriculum, languages in general, English in particular, vocabulary, mathematics and science, social studies and textbooks. Methodologically speaking, the majority of the studies have adopted correlational approach. Samples have been taken most often from the urban areas. In as many as twelve cases statewise studies have been attempted, whereas only in four cases, countrywide studies have been made, though in a very limited fashion.

In a few studies, critical and historical surveys have been executed to locate inadequacies in respect to general curriculum development. Changes in the content and scope of the primary and secondary

school curricula have also been investigated. Work values and achievements of the students in different areas of curricular learning in relation to their intelligence, SES, etc., have been studied.

Scope for physical education, crafts and various cocurricular activities in our bookish curriculum have been investigated with a plea for inclusion of folk literature and folk dance in it. The position of languages in general has been assessed with regard to their teaching and learning at different stages of school education in India. Comparative studies of different Indian languages, viz., Hindi, Gujarati, Marathi, Tamil Telugu and Kannada, have also been made. English has been studied in particular. The teaching and learning of English as a component of our school curriculum has been investigated in quite a few studies with a view to locating inadequacies and suggesting remedial measures. Studies on vocabulary comprise nearly one-fourth of the total number of studies in this area. Basic and recognition vocabulary in a number of Indian languages have been studied. There are a few studies on different aspects of supplying books to the children according to their psychological and linguistic needs. In a few studies, suitable techniques of teaching and learning of science and mathematics have been searched for. Drawbacks and shortcomings in this respect have been pinpointed in some studies. There are a few studies which have critically examined the present curricula for science and mathematics showing thereby their outdatedness. Teaching and learning of history, geography and social studies have been investigated in a few studies in respect of methods of instruction followed and textbooks and aids used. In some NCERT projects, basic principles and procedures in preparation and evaluation of textbooks in the mother tongue, second language, English, history, geography, social studies, general physics and biology have been reported.

In consideration of the inadequacy of the curriculum and the urgent need to raise, upgrade and improve it, the researchers in this area will have to provide the needed guidelines for planning and analysing the content of the curriculum, for developing techniques and tools of effective teaching, and for writing and publication of proper textbooks.

Programmed Learning :

Programmed learning is a developing field in the country and its acceptance or rejection depends mainly on the empirical evidence derived from the extensive research carried out in the different parts

of the country and the use of programmed materials, on a large scale, at different levels. The research conducted in this area in our country is not adequate in number to trace a definite trend. However, the review of researches done by Kulkarni and Kapadia indicates that the majority of studies are comparative in nature trying to establish the worth of programmed learning over the traditional approach in teaching. There are studies which have tried to ascertain which form of programmed material is more effective in terms of achievement of pupils and time taken to learn a particular topic. Several researchers have also made comparative studies on the effectiveness of different forms of programmed learning materials in terms of retention. A few researchers have studied the use of programmed materials rather than the teaching technique. The findings of these studies have revealed the suitability and effectiveness of programmed material for correspondence courses, for revising the matter already learnt and for remedial teaching as compared to other traditional methods. Some studies have development and validation of programmed materials as their main focus. Shifting the focus from programmed materials and its different forms and uses, a few studies have concentrated on some specific psychological and personality variables to study the impact of programmed learning approach on individual differences.

The research reviewed here is either at the doctoral level or at the institutional level. These studies are the sporadic efforts made by a few individuals who were interested in this field. The need is strongly felt for the establishment of a cell of programmed learning in an institution like the NCERT and its branches in SIEs. The future of programmed learning in India can be ensured only if these cells exclusively devote their attention to programmed learning and concentrate their energy and resources on the development and adaptation of the programmed materials and organise researches, which would throw light on the utility value of programmed learning in the rural and urban areas of our country.

Correlates of Achievement :

Dave has reported thirtyfour Ph.D. studies of different Indian universities along with ten projects undertaken at different institutions. His review covers the following topics: correlates in general, personality correlates, socio-economic status, backwardness and failure, over and under achieve-

ment, and miscellaneous. Correlates of achievement such as intelligence, study habits, attitudes of the pupils towards school, different aspects of their personality, socio-economic status, etc., have been studied as independent variables to find out their effect on academic achievement, the dependent variable. In almost all the studies, a large number of tools have been used, and the samples are comparatively large. Attention has also been focussed on such factors of achievement as restraint, thoughtfulness, parents' education, home and health adjustments, non-achievement, ascendance, anxiety, social adjustment and extraversion. Some of these factors have been found to be positively related to achievement, while others are found to correlate negatively with academic achievement. A significant point of interest is that anxiety has been found almost always to be negatively associated with achievement. A differential pattern of factors required for successful academic performance in different curricular courses has been searched for in a few studies. Basic and non-Basic traditional schools have been compared in a few studies in terms of their achievement, and the correlates involved therein have been investigated. Personality correlates of achievement such as, need for autonomy, dominance, nurturance, endurance, aggression, defence, affiliation, abasement, etc., have been studied in a few cases. Some of these factors are found to correlate positively and some negatively with achievement. Scholastic aptitude, neuroticism and extraversion-introversion are the three other factors which have been identified in a few studies. Socio-economic status as a significant variable affecting academic achievement has been the main focus of attention of a couple of studies. Backwardness and failure in terms of intelligence, study habits and ego-involvement, the factors underlying the academic over, under and normal achievement have been investigated in a number of studies and anxiety, intelligence and social adjustment have been some of the most potential factors identified. In a few studies, inventories for study habits and adjustment difficulties of the children, specially those of the bilingual ones, have been studied. The effect of language ability on achievement has been the concern of some studies. Certain demographic and environmental variables like sex, area of residential community, position in family and educational level of father and also the correlates like self-concept and creativity have been investigated in a number of studies. The organisational and administrative factors affecting the achievement of pupils have also been studied.

The research in this area, by and large, seems to be: (i) extensive, (ii) developmental and trait

oriented, (iii) horizontal, (v) based on concepts and methodology developed abroad, and (v) post facto psycho-social biased. In the opinion of the author, the future research should be: (a) functional and curriculum oriented, (b) sophisticated in all aspects of research—conceptual, operational and methodological. (c) with sufficient scope for experimentation and depth investigation. It is gratifying to note that a few institutions like the Centre of Advanced Study in Education, Baroda, and the Regional College of Education, Mysore have taken initial steps in this direction.

Educational Evaluation and Examinations :

The report by Passi and Padma is based on the review done in the area of educational evaluation and examinations which includes fortyone Ph.D. studies in education and the allied fields and sixty research projects. It includes research studies from all over India upto 1972, dating back to the first study in 1943. Though the number of achievement tests seem to comprise a major proportion of work in this area, yet it does not cover all the grades, subjects and all the regions. The studies are broadly classified under six areas, namely, achievement tests, diagnostic tests, examinations, factors affecting achievement, prediction-admission-promotion and failures. It is to be noted that the areas of achievement tests and examinations include slightly more than half the total number of studies.

The report also gives a picture of the contribution of the various Indian universities and other institutions to this field of educational research.

The areas of diagnostic tests and failures seem to be almost out of view of the researchers. At the doctoral level, no study is done in the area of failures and only one study is done in the area of diagnostic tests.

Except in one study where an all-India sample (excluding two states) is drawn, in all the other studies the samples are restricted to limited areas depending upon the location where the research is carried out and upon the nature of the problem. Considering these studies from the methodological point of view, most of the studies are descriptive and correlational. Compared to this, the number of studies which are experimental or which have used the techniques of factor analysis and regression are very meagre. The test standardisation studies have followed the usual four steps. The two experimental studies have followed the pre-test and post-test design with one treatment and one control group. The regression

studies have aimed at predicting success at higher examinations based on the scores on the lower examinations.

The report points out certain gaps in the researches done in this area. Putting it in a nutshell, it points out that researches in this area are inadequate and that even in the work done, there is a lack of integration and goal-directedness. The authors have put forward some new lines of thinking involving certain new concepts like convergent achievement quotient, divergent achievement quotient, mastery learning and criterion referenced testing that are developing recently. Further they suggest certain broad steps that can be taken up to give a new orientation to future researches in this field.

Teaching and Teacher Behaviour :

The actual place that teaching and teacher behaviour occupies in the total education process is not reflected in the amount of research produced in the area, leave alone the qualitative aspect. Hardly twentyone studies fall in this realm. Jangira, and Sharma, after reviewing the researches, came to the conclusion that it has been a comparatively neglected area of educational research. The failure of research institutions solely concerned with educational research, becomes glaring by the fact that almost all studies abstracted are doctoral studies. No attention appears to have been paid to this area nor has any agency supported this kind of venture till the beginning of the 70's. Since the Centre of Advanced Study in Education, Baroda has taken up teacher behaviour to be one of the major areas of research, there is occasion for optimism.

The whole presentation has been divided into: (i) coverage, (ii) design, (iii) procedure and tools used and (iv) analysis and interpretations. In terms of coverage, the studies reviewed have been put into four categories, namely, descriptive studies, surveys, prediction studies and 'presage-process' and 'process-product' studies. Reviewers are of the opinion that sporadic attempts at research on teaching and teacher behaviour have to be replaced by programmatic research. The programmatic research, by implication, requires a theoretical framework. It is hoped that research institutions exclusively devoted to educational research, like the Centre of Advanced Study in Education (CASE), Baroda and the National Council of Educational Research and Training (NCERT), New Delhi, will provide such a framework

to individuals and institutions interested in this area. Report of the Third National Seminar on 'Towards a Theory of Teaching' (1972), organised by the CASE, is one such attempt. This may help in developing a theory of teaching.

Teacher Education :

Lulla and Singh reviewed twentyseven doctoral studies and reports of nineteen research projects completed in India so far. The studies have been classified by them as (i) selection criteria, abilities and qualities of teachers; (ii) preservice and inservice training of teachers; (iii) workload, job expectations and difficulties experienced by teachers; (iv) procedures and policies of teacher education in India; and (v) personality variables of teachers. It is felt from the review of the studies that the themes have often been repeated by some investigators on different samples and in different geographical areas. Most of the studies are descriptive in approach using historical development, survey through questionnaires and interview techniques. There is no study which covers the whole country in any single aspect of teacher education. A few studies have been made with regard to the integrated pattern of teacher education, potential of carry over of theoretical learning to the classroom situation in terms of student-teacher's behaviour, impact of extension services, need of inservice education and evaluation of practice teaching. From the report it is clear that several areas remain unexplored by research workers in the field. Some of the areas for future research have been suggested.

Educational Administration :

The review of research studies in the area of educational administration covers research in (a) development and structure of educational agencies, (b) inspection and supervision, (c) different branches of education, (d) special problems like compulsory education, wastage and stagnation, etc., (e) organisation and planning, (f) organisational behaviour and (g) some miscellaneous studies. Thirtythree studies have been undertaken at the doctoral level, whereas twenty studies have been undertaken as research projects at institutional level. Out of them, two studies deserve special mention. The first is a study in the area of wastage and stagnation conducted by the Na-

tional Council of Educational Research and Training (NCERT). This project highlights the incidence of wastage at the primary level and also focuses attention on some of the major causes of this acute educational malady. The second study is in the area of inspection and supervision. A detailed job analysis of the task of inspection and supervision has been attempted and a tool has been developed for inspection and supervision of secondary schools.

Both these studies have been undertaken on the national plane. The Primary Education Department of the Bombay Municipal Corporation and a few of the State Institutes of Education have undertaken institutional studies in the area of educational administration. The studies by the education department of Bombay Municipal Corporation appear to have been undertaken to provide answers to the problems felt by educational administrators in charge of providing educational facilities to the citizens of Bombay.

Desai and Rao, in this review, highlight the need for directing the research efforts towards the study of structure of educational systems, effective management, decision-making process, communication behaviour, leadership, organisational behaviour, conflict resolution, group dynamics, systems analysis, educational planning and training of personnel. The regional seminar on the application of the modern management techniques to educational administration also recommended the state governments to initiate, sponsor, assist and encourage researches, studies and investigations specially with the participation of the universities, staff colleges, institutes of management and public administration and such other institutions to explore the feasibility of applying or adapting modern management techniques and aids in the field of educational administration. The review further lays emphasis on studies in the area of training programmes and training techniques for educational administrators.

It appears that the research in educational administration started in the second half of the twentieth century with eight doctoral studies and five projects in the decade 1951-60, eighteen Ph.D. studies and twelve projects in the decade 1961-70, and eight studies, of which five were Ph.D.s, in the first two years of the decade 1971-80. As it should happen, more and more studies have been undertaken in the area of educational administration in the course of last few years, the highest being nine reports in the year 1970.

Of all the universities, The Maharaja Sayajirao University of Baroda, Bombay University and the University of Poona have contributed about fifty percent of the doctoral studies to the area of educational administration. The Maharaja Sayajirao University of Baroda happens to be the only university in the country with a chair in the educational administration.

Economics of Education :

The economics of education is comparatively a new area of research in the country. The research literature available in India is still too meagre to indicate any trend of research. The same opinion is maintained by Mukherjee and Mukhopadhyay, the authors of the report, where they have tried to review the researches done so far. The authors have reviewed fourteen studies. Out of these studies, eight are doctoral studies; the rest are projects, both small scale and large scale. Most of the researches are on financing of education. The earlier researches treated this problem from a historical and administrative perspective, but lately it is being treated as an economic problem of fund allocation, private and public investments, etc. The other aspects of research so far developed are education as a correlate of productivity and national economic growth, and costs of education. The unit costing in general, and unit institutional costing in particular, are lately being given more and more importance. Besides these three major types of studies, efforts are being made to develop the concepts and terminologies for this new field of specialisation.

It is worth noting that in developing this field the credit goes more to the economists than to the educationists. The two seminars which have actually provided impetus for organised research in the field were sponsored by the Department of Economics of the Lucknow University and the Economics of Education Unit of the NCERT. The last few years have witnessed sustained efforts to explore the field in a well organised way in the country, particularly in a few centres of higher studies which are almost specialising themselves in this field.

Social and Adult Education :

Authors of the trend report define the concept of adult education and say that it is a part-time voluntary effort on the part of the learner, under

organised auspices, for persons beyond the compulsory school age. Much research work has not been done in this area though Gadgil started work in 1945 and worked on the "Problem of Lapse into Illiteracy". Then, after a lapse of one decade, two researchers undertook research projects on communication of ideas through adult education and the problems of social education. It was followed by works on youth activities, literacy development and adult interests. Research in this area gained momentum in 1969 when three projects—(i) on adult literacy at the Gandhian Institute of Studies, (ii) on adult vocabulary by Mallikarjunaswamy, (iii) on evaluation and appraisal of the training programmes of social education workers by Ansari—were undertaken. Again, in 1970, five projects were undertaken by Patel, Pal, Srivastava and Srivastava et al. Quite a few of these projects are in the area of adult education and evaluation of literacy programmes.

After analysing and scanning these researches, Kapoor and Sharma conclude that the research studies conducted so far in the field of adult education have not contributed much to the fund of knowledge in terms of theory. And, negligible research work has been done in quite significant areas, namely, (i) methods, media and techniques of teaching, (ii) attitudes of adults and adult education personnel towards adult education programmes, (iii) level of motivation among adults to learn, (iv) production of reading and teaching material, (v) adult learning and learning models, etc. The area of evaluation of adult education programmes' effectiveness remains neglected. Extensive and intensive surveys may be taken on role of libraries in the adult education movement. After recommending the areas which need research on a priority basis, the authors say that emphasis should be laid on application value of research projects for the practitioner,

Educational Surveys :

Reviewing the various educational surveys, Santhanam and Govinda have pointed out that upto 1957, all the surveys were local and covered limited geographical area and hence, were limited in scope and implications for planning. Although, conducting of large scale educational surveys had their beginning in 1957, the movement gained momentum only in 1965, when the Educational Survey Unit of the NCERT was established. The authors have classified

thirtyone educational surveys, which are abstracted, into four types according to the objectives in view—(i) fact finding surveys (77 percent), (ii) comparative surveys (3 percent), (iii) evaluative surveys (13 percent), and (iv) bench mark surveys (7 percent). They have also classified these surveys in terms of the coverage in geographical area—(i) national surveys, (ii) state-level surveys, and (iii) local surveys.

Apart from these thirtyone surveys, the authors have also referred to fourteen more surveys which were taken up as projects by different institutions. The fortyfive surveys have been classified, in view of the subject areas they deal with, as follows: (i) comprehensive surveys covering all aspects of the educational system; (ii) surveys on school education; (iii) surveys on special education; (iv) surveys on professional education; (v) surveys on social and adult education; and (vi) surveys on teacher status and their working conditions. The authors have suggested that a continuous programme of periodical surveys should go along with the programme of continuous planning. They have also suggested that a comprehensive all-India survey of all aspects of education, viz., preschool education, school education, higher education, technical and vocational education, inspection and administration should be undertaken along with the census operation once in ten years.

RESEARCH FACILITIES

As it has been mentioned earlier, educational research by Ph.D. students has considerably increased during the last two decades. Main reason for this spurt in growth is the availability of research facilities provided by various institutions to Ph.D. scholars. The UGC has been the pioneer institution in the country to encourage Ph.D. research by instituting its scheme of fellowships in humanities and social sciences under which scholars for Ph.D. in education have been getting the financial assistance. Under this scheme, scholars get junior and senior fellowships for doing their doctoral and post-doctoral work in education, along with additional financial grant for meeting their expenditure incurred on items related to research activities. The NCERT has also instituted junior and senior fellowships in 1966 to promote educational research by individual scholars. More recently, since 1972, the Indian Council of Social Science Research (ICSSR) has also extended similar facilities to Ph.D. scholars. These

institutions under the schemes of fellowships allow scholars to work in various universities under the supervision of competent persons there. In addition to these, various universities provide scholarships or other financial assistance to scholars from their own budgets. Some state governments also encourage research by providing financial assistance to individuals. At present more than thirty universities have the provision for financial assistance to scholars under one scheme or the other.

Another type of research facility provided is in the analysis of research data. Statistical analyses like factor analysis and multivariate analysis which were very difficult, if not impossible, to be attempted by Ph.D. students some years ago, have now become easier with the advent of data processing facilities on electronic computers. Certain computer centres, viz., Tata Institute of Fundamental Research, Delhi School of Economics, to mention a few, allow these facilities to Ph.D. scholars free of charge. With the establishment of these institutions where computational facilities are available, and the institutions like the NCERT which have their data processing units with a number of statisticians whom research workers can consult for designing their studies and analysing their data, it has come within an individual research worker's reach to plan and execute studies involving large scale data.

TRAINING IN RESEARCH METHODOLOGY

Scientific precision in research depends, to a great extent, on the competence of the researcher. This competence has to be developed by giving thorough training to the researcher in the techniques of educational research. Provision for proper training in research methodology to the beginners is a prerequisite for systematic growth of research. Most of the educational research workers are M.Ed.s who get, normally, some initiation to research techniques as they have to do a piece of research during the course. But this is by no means an adequate training. Gradually, universities have recognised the need for training and most of them have, consequently, introduced methodology of research as a compulsory paper in M.Ed. courses. Some universities have started M.Phil. courses in education. Admission requirement to these courses is M.Ed. and they are intended to provide longer duration for intensive study of education and prepare well trained research workers. In 1963, the NCERT started an advanced training course in re-

search methodology of one academic year's duration for educational research workers. This course continued upto 1967 and trained about twenty research workers every year. In 1967, the NCERT started an Associateship course where the training course in research methodology appeared as a special field. The aim of this course was to improve the functional competence of educational specialists. The course was designed to serve as pre-Ph.D. programme. But this aim could not be fulfilled as the states found it difficult to depute their officers for twelve months for training in this course and also because many officers did not satisfy requisite qualifications for pursuing Ph.D. programmes. It was, therefore, discontinued in 1969.

More recently, the NCERT, the UGC and the ICSSR have started organising summer institutes in research methodology to provide training in techniques of research to teachers of training colleges and university departments. This is a positive contribution to improving the quality of educational research. This programme can, however, be utilised more fruitfully if it is restricted to those teachers who either teach research methodology paper and/or guide dissertational work in their institutions.

DISSEMINATION OF RESEARCH

The number of professional journals is another index of the growth of educational research. They serve as channels of communication between research workers and as a forum for exchange of their ideas. From this point of view also, one can see that educational research in this country has made considerable progress. There are quite a few journals which are devoted to research and are brought out regularly. The Journal of Education and Psychology is devoted to research in education and psychology, and had been published regularly from 1935 to 1963 by the Faculty of Education and Psychology of The Maharaja Sayajirao University of Baroda and thereafter by Sardar Patel University, Vallabh Vidyanagar. The NCERT brings out, since 1966, two journals, viz., Indian Educational Review (IER) and NIE Journal. The IER is devoted to research. It publishes findings of significant studies and discusses theoretical issues in education. The NIE Journal is mainly devoted to the improvement of current practices in schools. The latter is particularly meant for the benefit of school teachers and other educational personnel. It is aimed at serving as a channel of communication between researchers and the school practitioners.

This helps in lending a note of reality to researches to be undertaken and making studies to solve immediate problems of school education. The Indian Association of Teacher Educators (IATE) publishes its journal 'Teacher Education'. The South India Teachers' Union (SITU) also has its professional journal 'South Indian Teacher'. Both are published regularly. The other journals that are published regularly are Education and Psychology Review, CIE Studies, Vidya Bhawan Studies and the Journal of Educational Research and Extension. Findings of some educational researches are also published in journals of psychology, sociology and the university journals. There are some educational journals in regional languages also. In some foreign journals too, some researchers publish findings of their studies. Various universities and institutions also publish their research studies wherein summaries of M.Ed. and Ph.D. theses, and other investigations by them are reported and made available to researchers. Some institutions, viz., the NCERT, the ICSSR and the UGC have recently started giving grants for the publication of Ph.D. theses. Some universities also finance the publication of their Ph.D. theses.

The NCERT has published the titles of M.Ed. and Ph.D. theses in education upto 1966. In 1969, Pareek brought out a directory of behavioural science researches. But what one gets therein is only the titles of various studies in different areas. The Third Indian Year Book of Education, published by the NCERT in 1968, is devoted to research in education and it has given a synoptic view of the work done in various fields of education. This is more than the mere titles; it has indicated directions for research to be undertaken in future. But if someone looks for details of studies completed in each area, he is bound to meet with disappointment as this volume gives only a total picture of research done indicating how research started in each area, deficits therein and guidelines for future research in that area. In Indian Science Congress also, there is a section of Psychology and Educational Sciences. In its annual sessions, papers based on research findings are presented and related theoretical issues are discussed. And, these papers are published by the Congress in the proceedings of the sessions.

COOPERATIVE RESEARCH

It may be observed that the Ph.D. studies and other research projects undertaken by each individual

institution have covered a wide variety of topics in different areas of research. It is an encouraging development because different institutions have made efforts to do some research in certain areas to study the problems therein. But it does not show as healthy a development as it sounds in the light of the fact that institutions engaged in research have very limited resources and cannot possibly afford to undertake research in many areas. Research efforts, when spread over a wide range of activities, have been diluted in their effects and nothing significant seems to have come out of such research. Under such a situation, one may be inclined to think that the institutions are to be encouraged to develop their research activities mainly in one or two areas where they can be provided with even additional facilities to have more concentrated research to make significant contributions. Five or six broad areas of research may be identified, considering the national needs and then, the same number of institutions be developed as centres of excellence each concentrating its research efforts on one area. This may be done either by developing certain departments of education as centres of advanced study in education under the existing scheme of the UGC of advanced study centres, or they may be developed as schools of education as recommended by the Education Commission (1964-66). The main idea behind the proposal is that each area is thoroughly explored in its entirety by a competent body of researchers which may not be available at all centres in near future due to obvious difficulties.

Closely related to this observation is that many institutions have been doing research in the same area. But since the area has not been explored thoroughly it has created more gaps than offered solutions to the problems. Moreover, studies undertaken by different institutions in the area have been conducted under so divergent conditions and with so different designs that it is not possible to pool their findings to arrive at any generalisation. As a result, although many studies in each area have been completed, they form isolated bits and do not seem to make much impact and contribution. To make these efforts more meaningful, it is proposed that cooperative research be encouraged, in which research institutions located at different places can collaborate. Cooperative research will be helpful for studies where different language groups are involved and when the requirement of the design needs the inclusion of samples from the country as a whole. The prerequisite of this research will be identification of willing-to-cooperate institutions having necessary faci-

lities for research in different areas. After this identification, some all-India institutions like the NCERT or the CASE could take the initiative to formulate and execute such a research. After a few years of its operation, one may expect significant contributions to specific areas of research. This will also help in developing certain institutions as centres of research with adequate research facilities in those areas.

INTER-DISCIPLINARY RESEARCH

Most educational researches have been done by the training colleges, university departments of education and the individuals who have worked for their Ph.D. degree in education. These research workers, by and large, possess M.Ed. degree. A few individuals from other disciplines have also studied educational problems. But no serious attempt has been made to bring together various disciplines, for the study of educational problems. Other disciplines have shown little interest in planning their research around problems of educational significance. And, education as a discipline has mostly remained out of the main stream of the university as it started very late in some universities, and in many universities, it is still not there.

In researches undertaken recently, one could see the trend where other disciplines have been brought to bear on educational research. What is needed, urgently, is that this inter-disciplinary approach in educational research has to be emphasised and given further impetus, as Education Commission (1964-66) have recommended that educational research should not be confined only to training colleges and university departments of education. Certain departments of education as visualised earlier, with adequate research staff, should develop, in a big way, in collaboration with other departments. It is encouraging to note that the UGC had set up a study group to make recommendations to promote inter-disciplinary approach in educational research. To implement one of its recommendations, a seminar on educational research was organised in 1969, in which persons from psychology, anthropology, sociology, political science, philosophy, economics, statistics and other allied fields, in addition to education, participated to find out their mutual interests and ways and means of coordinating their efforts in formulating and carrying out common research projects. They have suggested eight major areas, viz., educational institutions

and social-cultural systems, education and politics, education and social change, students, teachers and their problems, education and employment, management of educational institutions, educational administration and planning, aims of education, and seventyfour specific research proposals therein which could be studied through inter-disciplinary approach and support. Such seminars should be organised more frequently to review the research completed and to offer guidance for research studies to be undertaken in the future.

In M.Ed. and Ph.D. courses it is generally observed that there are persons with their master's degrees in various disciplines. While selecting their topics for dissertational work, their basic degree remains a determining factor. If their topics of dissertation are related to the subjects they studied at M.A./M.Sc. level, they may even be assigned for research guidance to supervisors who are in other departments of the university. This shall, of course, have to be done on willing-to-cooperate basis to start with. But this will broaden the scope of educational research as several disciplines will be brought into play. Participation in seminars organised by the departments of education and the continuous exchange of ideas will be a necessity for students as well as for supervisors to keep the central theme of the study as of educational nature without being taken away by the over-specialisation of particular discipline (s) with which collaboration is sought.

A natural corollary of the proposal made in the preceding paragraph will be that persons holding M. A. or M.Sc. degree, if willing to study problems of educational significance, may be allowed to pursue their doctoral work in education. This will enlarge the scope of educational research and encourage an inter-disciplinary approach. Similarly, departments of education, specially those which are to be developed for research in a big way, may have on their staff, persons with M.A./M.Sc. and/or Ph.D. in disciplines other than education. If a person has the necessary orientation to educational research, which can be judged from his Ph.D. work and other experiences, it should not be insisted upon that he necessarily possesses M.Ed. or doctoral degree in education. This will also help in cutting across various disciplines to study educational problems.

The study group set up by the UGC has recommended the creation of a cell in various departments of subjects that are related to education to promote inter-disciplinary approach to educational

research. To make it a success, it is essential that there is an effective communication between these cells in each university so that they can continuously keep identifying the areas of common interests and review the completed research. The departments of education of the respective universities should take the initiative to provide a forum where persons from all cells, in various departments, can come together and exchange their ideas about educational research and its related issues. It is through these activities that various departments may be made to undertake educational studies of their interests. For instance socio-economic studies of their student bodies, educational institutions and socio-cultural systems, education and social change, may be studied by department of sociology; studies on wastage and stagnation in their courses, sample surveys of educational facilities may be done by the departments of mathematics and statistics; aims of education may be studied in collaboration with philosophy department; teaching-learning process may be studied in collaboration with psychology department by analysing, identifying, isolating different variables and controlling some of them and maintaining others at a certain level of efficiency which may be necessary to maximise the desired learning outcome. As it would involve heavy computations and complicated designs, statistics department may be of great help.

It may, however, be pointed out that bringing experts from different fields together may not solve any problem by itself and make education broad based. What is needed is that they have to develop into a team where they exchange their ideas and develop sound methodology and conceptual framework for educational research. While borrowing various concepts, methods for their use in educational research, one has to be careful in their selection and judicious application. The main emphasis should be to develop a body of principles, concepts, and methodology that suit the requirements in education.

CONCLUSION

The present survey of educational research in India has before it the major aims of identifying gaps in educational research and fixing priorities for future work. The various reports have discussed the problems which have been studied indicating the research trend in the area. The reports have also indicated problem areas needing priority. If this survey

reveals anything, it is the absence of research in those areas of national life where educationists and administrators have failed to show the direction leaving the field open for politicians to direct programmes on the ground of expediency. One such area is the Place of English, Hindi and other languages in the school curriculum. The problem of English has been an apple of discord in every state between politicians of various shades. At what stage should English language be introduced? There are states where this language is introduced in the school curriculum at the lower primary stage. There are other states where it is introduced at the upper primary stage. Then there is also a state which permits English to be introduced either at the upper primary or at the high school level. The educational researchers have to take a stand on the basis of research findings in this area. What is true of English is equally true of Hindi and other languages. Though studies in the area of programmed learning started as early as 1963, one does not find any significant application of this technique for an efficient learning of Hindi and other Indian languages.

A second major gap revealed by the survey is the absence of any research on the duration of school education. The country has toyed with this problem for the last quarter of a century. Whether the school duration should be 7+4 or 4+3+4 or 5+3+4 or 5+3+2 or 8+3 or 8+4, no study has been undertaken in this respect. And now a decision has been taken to adopt a pattern of 10+2+3. Educational researchers have to study this problem with the allied problems of curriculum load, streaming of students, etc. In a state in India fifty percent of the total instructional time in the high school years is devoted to the learning of four languages. Is this not shocking? The problem has not been explored as yet.

A large number of studies have been undertaken in the area of educational evaluation and examinations. A good deal of research has been devoted to constructing standardised achievement tests. A few research projects have studied the psychometric properties of the examinations. But the periodic analyses of the examinations conducted by the State Boards of Education reveal the ghastly fact of more than fifty percent of the students failing in public examinations. Even this has not evoked studies which may throw light on this state of affairs. Along with the question of large scale failure is the question of wastage and stagnation. The extent of wast-

age has been measured, possible causes have been identified and yet this crucial issue has resisted all efforts to solution. A well planned field research is needed.

Much dissatisfaction has been shown about the training provided to the teacher. The trainees are not satisfied, the consumers are not satisfied and more than this, even the trainers are not satisfied with training programmes. Yet this dissatisfaction has not led to significant research in the area of teacher education. On the contrary, three year and four year integrated teacher education programmes were started without any built-in design for evaluating them. Some programmes have been abandoned and others diluted because of the pressure from administrators and not because of the compulsion of research findings. The Indian classroom has its own characteristic features. It is large and heterogeneous not only in terms of intelligence, but in terms of age too. Sociologically it draws students from a wide range of socio-economic strata. What can be the best teaching method? What type of instructional organisation will be best suited? These questions demand studies on a priority basis.

The quality of teacher education programme is only one aspect of the problem of preparing better teachers for the schools. Even after a new curriculum for preparing teachers has been devised and the present day duration of one year training programme is increased, the quality of instruction will not improve much unless the training techniques are changed. The modern developments in behavioural sciences and educational technology have provided adequate knowledge base on which new training techniques can be built. The National Staff College at New Delhi has already started utilising management techniques for training educational administrators. This has to be extended to the training of school personnel in colleges of education. Again, the instructional and training techniques have much to gain from the recent developments in educational technology and programmed learning. These developments have brought about significant changes in the training programmes of industrial, business, banking and defence establishments. In education, however, the academician smells cynicism in the establishment about the application of educational technology and programmed learning and the latter finds the arguments of the academician in favour of the use of education technology unconvincing. This stalemate continues in the area of education, but no plans appear to have been made to take decisions on the basis of research findings. In spite

of the prevailing climate, the Government of India have established the Centre of Educational Technology. What is now needed is joint efforts by universities and research institutions to plan out series of investigations to give a fitting start to this new innovation in education.

The last decade has witnessed what is known as the phenomenon of student power. Thousands of instructional days have been lost. Institutional property has been destroyed. These are symptoms of something basically wrong in the educational system. The unrest among the youth has spread far and wide. It expresses itself in a demand for active participation and an urge for close involvement into the affairs of institutions. The students have voiced their concern about over-crowded classrooms, ineffective instruction and unrealistic curricula. Here is a fertile field for a cooperative interdisciplinary research between curriculum experts, sociologists, psychologists and educational administrators. The area demands a study in depth. These are some of the problems demanding attention of educational researchers on a priority basis. Studies

in educational costing, educational finance and educational planning have also not been explored sufficiently. A beginning has been made and some of the departments of economics in Indian universities have initiated studies in this area supported by the ICSSR.

The educational research in India has yet to attain maturity. In the name of academic freedom one cannot be allowed to undertake educational research on an unplanned basis anymore. A developing country cannot afford to have the luxury of 'research for the sake of research'. With the resources which are meagre and the expertise which is limited, development of education on the basis of research findings is possible only with a dedicated leadership, willing to take risks and having a strong will to implement. Such a leadership has to be provided by the apex organisation at the centre, viz., the NCERT. It will have to develop a blue print of priorities in educational research and muster financial and academic support to implement the same. This will ensure a bright future for educational research in India.