The in-service Teacher Education Program in India has evinced a rapid growth since India gained independence in 1947. An all-India program of in-service education was established by the Ministry of Education in 1955. At present, the in-service education is carried out by 69 Extension Centers and 24 Extension Units attached to training colleges in all the states of India. These Extension Centers and Units provide continuous year-round in-service programs for the benefit of teachers, with the main purpose of improving teacher competency and providing for professional growth.

A brief history of teacher education and in-service education in India, beginning from the 19th century is given, to indicate the need for and the importance of an all-India program of in-service education. The implementation of the Extension Services Project,
its organization, functions, responsibilities, and major activities are described. The effect of the Extension Services Project on secondary schools was evaluated by means of data obtained from two sets of questionnaires, distributed to 560 teachers and 112 administrators from 112 schools in Madras State. Usable returns were received from 62 percent of the teachers and administrators. Eighty-one percent of the schools responded to the questionnaires.

The major findings of the study are as follows:

1. Administrators indicate that the most valuable achievement is teacher growth in terms of subject matter competency, new methods and techniques and increased professional interest,

2. Administrators and teachers utilize training courses, seminars, and workshops more than any other program offered by the Extension Centers,

3. A majority of the teachers and administrators have participated in Science Fairs which they feel help in discovering science talents among pupils,

4. Audio-visual aids and certain of the library books are in high demand, but the arrangements for securing them from the Centers are not adequate,

5. Administrators and teachers reported preference for intensive type of activities conducted in individual schools
rather than the extensive type organized at the Center,

6. The most common suggestions given by the teachers and the administrators for improving the in-service activities are that provision should be made to organize more demonstration lessons, to provide more books in regional languages and to make satisfactory arrangements for paying travel expenses and daily allowances.

The major recommendations of the study are as follows:

1. Additional training courses and seminars should be organized, especially in the teaching of Science and English,

2. There is need to popularize the publications of the Extension Center and to insure better and more frequent use of the Extension library,

3. A committee of experienced teachers should be established at each Extension Center to aid the Coordinator in bringing out more useful publications,

4. Coordinators and staff of the training colleges should visit associated schools more often to help teachers in solving specific classroom problems,

5. Follow-up activities should be planned for teachers who participate in in-service activities,

6. Efforts should be made to improve the arrangement for the payment of travel expenses and daily allowances,
7. Funds should be provided for the establishment of new Extension Centers or Units in areas where the present Centers serve more than 100 schools.
AN ANALYSIS OF THE IN-SERVICE TEACHER EDUCATION PROGRAM FOR SECONDARY SCHOOLS IN INDIA

by

EDITH GNANAM VEDANAYAGAM

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AN ANALYSIS OF THE IN-SERVICE TEACHER EDUCATION PROGRAM FOR SECONDARY SCHOOLS IN INDIA

CHAPTER I

NATURE OF THE STUDY

The formal education in India has received greatly increased emphasis and development, since India gained independence. More adequate funds have been channeled into education and many new programs have been launched. One of the significant developments was the establishment of the Extension Services Project. The Extension Services Centers, located in selected teacher training colleges, carry out a program of in-service teacher education. These Extension Services Centers have played a vital role not only in the in-service education of teachers but also in the reconstruction of secondary education.

The 69 Extension Centers and the 24 newly-started Extension Units, distributed in all the states of the country, are now reaching approximately 80 percent of the training colleges and 90 percent of the secondary schools through the in-service program.

The Ministry of Education has envisaged an even greater role for the Extension Services than doing merely in-service training. The Ministry is encouraging the Extension Centers and Units to detect, evaluate and interpret problems and needs in terms of practical solutions and workable possibilities. The task is a stupendous
one for the Extension Services, but one well worth trying.

The writer of this study has been the Coordinator of the Department of Extension Services, St. Christopher's Training College, Madras, India, from November, 1958 to August, 1963. She had developed special concern for the in-service education of teachers during her several years of experience in the training college, prior to the implementation of Extension Services. She represented her college and its Extension department at the several conferences and seminars held at Delhi and other Extension Centers. From her varied experience in working with teachers in the schools of Madras State, she has freely drawn material and information for the writing of this dissertation.

**Statement of the Problem**

The purpose of this dissertation is to analyze the status and functions of the existing in-service teacher education program in India, to evaluate its impact on secondary schools, and to offer suggestions and recommendations for the improvement of in-service education.

More specifically the objectives of the study can be listed as follows:

(1) To trace the history and growth of in-service education in India,
To determine the practices and trends in organizing in-service education in India's secondary schools,

(3) To investigate the teachers' concept of in-service education in terms of teacher needs, problems, and requirements,

(4) To determine the amount of participation of teachers in terms of subjects, activities, and time,

(5) To examine the opinions of teachers concerning the type of help and guidance needed from the Extension Services,

(6) To examine the opinions of the administrators in regard to the participation of the teachers in in-service activities,

(7) To examine the suggestions of the administrators regarding the improvement of the Extension Services project,

(8) To offer recommendations for the improvement of in-service education in India.

**Plan and Procedure**

For the analysis of the existing in-service teacher education program in India, it was decided that a short background of teacher education programs should be included, since in-service education is one of the important subjects of the teacher education program. Further, it seemed advisable to trace briefly the history of in-service education in India, and to point out its growth and development.

Early in the study it became evident that the review of literature on in-service education in leading countries such as the United States of America, the United Kingdom, and Russia, even
though a valuable help, could be an entire thesis by itself. Thus the decision was made to limit the review to literature in India. It is considered necessary, however, to base the study on the principles, techniques, and methods of the in-service education of the United States of America, although still working within a frame of reference suited to the needs and conditions of in-service programs in secondary schools in India. Thus there is an opportunity to use the wealth of material on in-service education available in the United States of America.

The Department of Extension Services is the only all-India scheme implemented by the Ministry of Education for the effective organization of in-service education for teachers of secondary schools. Hence the development, organization, and functions of the department as well as its major programs are explained in detail.

In order to study quantitatively the realities of the impact of the Extension Services on the secondary schools, as well as the needs, problems, and attitudes of the teachers and administrators towards the in-service program, two sets of questionnaires were prepared; one for teachers and the other for administrators. The questionnaires were printed and distributed to 560 teachers and 112 administrators from 112 randomly selected secondary schools in Madras State. Madras State was used as the case study for this investigation. All the secondary schools, 1,689, that are
affiliated with the seven Extension Centers in Madras State were considered as the "population" for the purpose of this study, since technically the seven Extension Centers cover all the secondary schools in Madras State. By a random sampling method, 16 schools were chosen from each Extension Center and questionnaires were completed by five teachers from each of these 16 schools. The administrators from these schools also completed the questionnaires appropriate for them. The return on these questionnaires was 62 percent.

The suggestions and recommendations for further development of the Extension Services are based on the analysis of the questionnaires and the interpretation of the data gathered by means of these questionnaires.

The dissertation begins with an appraisal of the teacher education and in-service education in India and progresses through the growth and development of in-service education, culminating in the implementation of the all-India Extension Services Project, its organization, functions, responsibilities, and major programs. The account closes with suggestions and recommendations for the further development of Extension Services. These suggestions are based on the questionnaires returned by the sample of teachers and administrators from secondary schools in Madras State, India.
CHAPTER II

REVIEW OF THE LITERATURE AND HISTORY OF
IN-SERVICE EDUCATION IN INDIA

In the long history of India, there has existed from early
times an educational system of one form or another, even though
it was not a system of public education in the modern sense of the
term. According to Dr. F. W. Thomas, "There is no country where
the love of learning has so early an origin or has exercised so
lasting and powerful an influence as India" (61, p. 1).

The indigenous systems of education that flourished during
the first ten centuries were the Hindu and Buddhist systems in which
the students usually studied under one teacher, a guru, for a num-
ber of years. It was their duty to work for him and absorb every-
thing he could teach. The instruction was in Sanskrit. As larger
schools developed, the institutions of higher learning, called tols,
were established and these included faculties of medicine, law, and
military science, philosophy, music, and mathematics.

Beginning in the eleventh and twelfth centuries, the Muslims
introduced two types of educational institutions, the maktabs -
primary schools, and the madrasahs - seats of higher learning.
At the primary level the emphasis was on learning parts of the
Koran in order to perform the daily devotions, and only secondary
consideration was given to the teaching of the three R's. The course of study in a madrasah lasted from ten to twelve years and included the Arabic language and literature, Islamic theology and law, history, and various sciences. In Muslims schools the instruction was in Arabic. Thus it could be said that the early Indian education was essentially religious and personal.

The arrival of the British in the 18th century did not immediately affect Indian education. The East India company established schools for the children of its own employees. The Christian missionaries who entered India in the early 19th century, however, started schools for the natives, even though their work was primarily connected with proselyting activities. Many of these schools were characterized by an essentially western-type education, with English as the medium of instruction. In 1857, the first three universities, patterned after the University of London, were established in Madras, Bombay, and Calcutta, and this further strengthened the British type of educational system in India.

During the last 100 years or so, professional educators have been aware of the inadequacies of the system and many committees and commissions have been trying to define its shortcomings and weaknesses. Some valuable recommendations were made by Wood's Despatch of 1854, Report of the Hunter Commission of 1882, the Sargent Report of 1944, the University Education Commission
of 1949, and the Secondary Education Commission of 1953. Some of these recommendations have been implemented. Nevertheless the present educational system of India is still not adequate for the needs of the people of an independent and emerging country.

One of India's leading experts on education, Dr. Humayun Kabir, in his book, *Education in New India*, emphasizes the important part that secondary education plays in the whole educational system. He has said:

Secondary education has a vital role to play in any program of education for the community. It provides teachers for both elementary and adult education. It also prepares pupils for the universities and other institutions of higher learning. Besides, it is the stage which in all countries marks the completion of education for the vast majority. . . . if for no other reasons, these considerations alone demand that secondary education must be of the highest quality, if it is to satisfy the needs of the modern age (42, p. 39).

Further, Dr. Kabir sums up the present position of secondary education in India, as follows:

While the importance of secondary education in a democratic society is beyond question, it has to be admitted that it has generally been considered as the weakest link in the Indian educational chain. Universities complain that the products of the secondary schools do not come up to their expected standards. Educational administrators question their competence to serve as teachers in elementary or social education. The public feels that secondary education does not serve its main purpose in developing among its pupils qualities of leadership needed in different walks of life. Because of the unsatisfactory quality of secondary education, both elementary and higher education have suffered (42, p. 42).
Brief Review of Teacher Education in India

The establishment of schools in India was not preceded by the establishment of training institutions. Teaching as a profession and the need for formal training of teachers was not recognized until 1856.

The 1854 Education Despatch of the East India Company (known as 'Woods Despatch') outlined, for the first time, a comprehensive educational policy for the whole of India. In addition to proposing certain new schemes, the Despatch considered the question of securing properly qualified teachers for schools in each presidency. In this connection, the Despatch says:

In England when systematic attempts began to be made for the improvement of education, one of the chief defects was found to be the insufficient number of qualified school masters and the imperfect method of teaching which prevailed. This led to the foundation of normal and model schools for the training of masters and the exemplification of the best methods for the organization, discipline and instruction of elementary schools. This deficiency has been more palpably felt in India, as the difficulty of finding persons properly educated for the work of tuition is greater; and we desire to see the establishment, with as little delay as possible, of training schools and classes for masters in each Presidency in India (55, p. 211-212).

During the 30 years following the Despatch, there were only two training institutions for secondary (English) school teachers for the whole of India. These teachers were trained for schools with English as the medium of instruction. The training school at Madras
was established as early as 1856, and the one at Lahore was started in 1880. Even at these two schools, students with different levels of attainment were all grouped together as one class and were put through the same course. Moreover, there were no practicing schools for these teacher trainees.

The Indian Education (Hunter) commission, appointed in 1882, recommended:

(1) That an examination in the principles and practices of teaching be instituted, success in which should thereafter be a condition of permanent employment as a teacher in any secondary school, government or aided;

(2) That graduates wishing to attend a course of instruction in a normal school in the principles and practice of teaching be required to undergo a shorter course of training than others (55, p. 306).

It is of significance to note that although the need for and importance of training teachers was accepted by all concerned, still there was a controversy in England as to what type of training should be introduced in India: should it be the pattern of the French Normal Schools or that of the German Schools? Under these circumstances, the progress made in regard to the training of secondary teachers was very slow during the twenty years following the report of the Indian Education Commission.

In 1901-02, there were six training colleges located at Saidapet, Rejamahendry, Kurslong, Allahabad, Lahore, and Jubbulpore. A certificate examination for secondary teachers was
organized in every province in India. Madras, one of the educationally progressive states of India, had by then the L. T. (Licentiate of Teaching) degree.

Lord Curzon's momentous declaration, in the Resolution on Educational Policy (1904), initiated a new era in the training of secondary teachers. His orders were for improving the training colleges as well as for increasing the output of trained secondary teachers (36, para. 39). Due to the recommendation, four training colleges were established: Bombay (1906); Calcutta (1908); Patna (1909); and Dacca (1910). The Jhabalpore training class was developed into a college in 1911. By 1912, there were 15 training institutions for secondary school teachers, giving instruction to nearly 1,400 students.

The government Resolution on Educational Policy, 1913, further advanced teacher education. It required that "no teacher should be allowed to teach without a certificate that he has qualified to do so" (37, para. 51).

The Calcutta University (Sadler) Commission of 1919 emphasized the role of universities in the professional training of secondary teachers and the need to establish a demonstration school attached to each training college. The Hartog Committee, 1929, also made some important recommendations regarding the training of primary teachers. As a result of these declarations,
the teacher training institutions in India developed steadily, with improved libraries, and better equipped laboratories. Practicing schools for trainees were also made accessible.

**Types of Teacher Training Institutions**

The existing teacher training institutions may be classified broadly under three heads:

1. Primary or Basic teacher training institutions
2. Secondary teacher training institutions
3. Graduate teacher training institutions

Fully prepared primary school teachers hold the trained teacher certificate, which is earned by two years of successful study at a primary or basic teacher training school. The trainees must have completed eight years of schooling, five years of elementary and three years of middle school. Primary schools in which the trainees would be teaching normally consist of the first five grades and the medium of instruction is regional or state language.

The secondary teacher training institutions offer to high school graduates a two year teacher training program and prepare teachers primarily for teaching in the middle schools. In India, middle schools generally form a part of the high school; they comprise sixth, seventh, and eighth grades. Again the medium of instruction is regional or state language. English is one of the subjects taught
in the middle school.

At the graduate teacher training institutions, the minimum educational requirement for a trainee is a bachelor's degree and the training course is of ten months duration leading to the Bachelor of Teaching (B. T.) or Bachelor of Education (B. Ed.) degree. Graduate teacher training institutions are normally colleges of education affiliated with a university. University education as well as teacher education is carried on in English in many states. Graduates with a B. T. or a B. Ed. degree may teach in secondary schools.

The general educational requirements for the trainees in these three types of teacher training institutions may vary from state to state, but they follow more or less the pattern explained above.

According to the census report for 1961, India had approximately a million and a half elementary and secondary school teachers, of whom about 65 percent were trained and certified. The number of teacher training schools at that time was 1,307. There were 236 training colleges. One-hundred new schools were scheduled for opening during the third five year plan (1961-66) and these were expected to provide another half million teachers by 1966 (7, p. 249-250). The number of training institutions and trained teachers, however, is not yet adequate for the present needs of the country.
History of In-Service Education

The in-service education of secondary school teachers at the beginning of this century consisted mainly of refresher courses, lectures, and conferences. These were generally arranged during the vacation period at a centrally located place or the teacher training institution and were seldom a regular feature of the school program. Most of these activities were spasmodic responses to the recommendations of the various commissions that were appointed from time to time to study the problems of the existing educational system.

Resolution on Educational Policy - 1904

An early reference to the needs of in-service education and the role of the training colleges was made in Lord Curzon's Resolution on Educational Policy.

Every possible care should be taken to maintain a connection between the training college and the school, so that the student on leaving the college and entering upon his career as a teacher may not neglect to practice the methods which he has been taught, and may not (as sometimes happens) be prevented from doing so and forced to fall into line with the more mechanical methods of his untrained colleagues. The trained students whom the college has sent out should be occasionally brought together again and the inspecting staff should co-operate with the training college authorities in seeing that the influence of the college makes itself felt in the schools (36, para 39).
Resolution on Educational Policy - 1913

The Resolution on Educational Policy of 1913, laid down the major principles for the expansion and improvement of primary education and also recommended in-service education for village teachers. The resolution stated:

As teachers left to themselves in villages are liable to deteriorate, there are great advantages in periodical repetition and improvement courses for primary school teachers during the school vacations (37, para 11).

The trend at that time was toward an increase in the quality rather than the quantity of the teachers at the primary level.

The Hartog Committee Report - 1929

The Hartog Committee of 1929, made further recommendations about the training as well as in-service education of primary teachers. The committee observed:

Even under ideal conditions, when the right type of teacher has been selected and well trained the primary school teacher, particularly the village teacher, is much isolated and most often in need of guidance and encouragement. Journals for teachers in the regional languages, refresher courses, conferences and meetings of teachers' associations can do much to brighten the lives of teachers and improve their work (35, p. 56).

No active steps were taken, however, for the improvement of in-service education, as the report of the committee raised controversial issues. The report was warmly received in official circles,
as it attempted to show that a policy of expansion of education in India had proved ineffective and wasteful and that a policy of consolidation alone was suited to Indian conditions. The non-official view did not accept the opinion of the committee that quality must have priority over quantity. As a result, the report of the committee helped little towards the progress of primary education for the next twenty years or so and some of the valuable suggestions of the committee such as improved salaries for teachers, improvement of curricula, progress in in-service education, and tutorial work in colleges were neglected. Advances were, however, made in secondary and university education. Departments of Education were established in some universities and refresher courses for teachers began to be organized. It is during this period that teacher training institutions developed rapidly.

University Education Commission Report - 1949

The government of India appointed a University Education Commission in 1948, under the chairmanship of Dr. S. Radhakrishnan, to report primarily on university education in India. In order to do this, the committee had to review the position of secondary education as well and it made certain valuable suggestions. Remarking about the utilization of the vacation period for in-service program, the committee stated "at present neither
students nor the teachers utilize vacation; for most of them vacation is a period of want of occupation" (39, p. 96).

Stressing the need for in-service education, it recommended:

In order that the scheme of refresher courses may become a real success, the authorities of schools and intermediate colleges and the government education departments should make certified attendance at a university refresher course, once in every four or five years, or qualification for promotion. Some such stimulus would be necessary until attendance at such refresher courses becomes a tradition. . . . Alternatively teachers may be given leave of absence for six months after every five years of service and asked to attend advanced courses at their own or any other university and obtain a certificate of attendance and good work from the head of the Department of the University (39, p. 96).

Secondary Education Commission Report - 1953

During 1952-53 the Secondary Education Commission, under the sponsorship of the Ministry of Education, made a national survey of secondary education, for the purpose of reorganizing and improving the educational system. The study was conducted by visits to the different states and by interviews and questionnaires.

As a result of this study, the commission was able to emphasize that:

. . . The most important factor in the contemplated educational reconstruction is the teacher--his personal qualities, his educational qualifications, his professional training and the place that he occupies in the school as well as in the community (38, p. 155).
Regarding the in-service education, the committee was of the opinion that:

However excellent the program of teacher-training may be, it does not by itself produce an excellent teacher. It can only engender the knowledge, skills and attitudes which will enable the teacher to begin his task with a reasonable degree of confidence and with the minimum amount of experience. Increased efficiency will come through experience critically analyzed and through individual and group efforts at improvement. The teacher-training institution should accept its responsibility for assisting in this in-service stage of teacher-training (38, p. 169).

International Secondary Education Project Team Report - 1954

An International Secondary Education Project Team was appointed in 1954 by the government of India to study the various steps and procedures needed for implementing the major recommendations of the Secondary Education Commission. One of its points of study was the in-service education of secondary school teachers. The report stated:

We recommend that education departments consider ways and means of helping teachers to obtain in-service training and recognizing the improvement in their professional and academic qualifications by suitable salary increment (40, p. 5).

The International Team suggested special in-service training courses immediately, "for teachers of technical, vocational and other special subjects, who are already in service but for those who have not been trained we recommend short intensive courses in the theory and practice of Education" (40, p. 47).
The Team further recommended the constitution of Area Training Organizations which would take up the work of in-service education of teachers. The Team emphasized the need for the in-service programs to be arranged in collaboration with state department of education, schools, teacher organizations, and teacher training institutions.

Thus, it is evident that from the beginning of this century, educators have felt the importance of in-service education for improving the quality of classroom instruction as well as the professional growth of the teachers. They have also realized the need for organizing programs of in-service education on a nation-wide basis.

**Part Played by Other Organizations**

In addition to the recommendations and programs of the various all-India committees that stressed the need for in-service education, several organizations such as educational institutions, teacher organizations, educational department of the state, and private organizations have arranged, from time to time, in-service education of one type or another. These activities have been varied in nature in the different states of India.

Madras State has been chosen to illustrate the major in-service activities carried on within the country. The reason for
the selection is that Madras is one among the educationally advanced states in India. Further, the University of Madras is one of the three oldest universities in the country and Madras has done pioneering work in promoting primary and secondary education. A brief review of the in-service activities of Madras State is given in the following section.

**Educational Institutions.** The first in-service program on record in Madras State, as far as the writer could gather, was a refresher course arranged by the Teachers' College, Saidapet, Madras, in 1859. A series of bulletins was also issued periodically by the Teachers' College for the benefit of teachers in service. All the training colleges in Madras State, other than the Teachers' College, were established after 1920, and most of them took an interest in organizing refresher courses for teachers. Special mention may be made of the efforts taken by St. Christopher's Training College, Madras, which arranged Saturday classes for teachers of English and by Lady Willingdon Training College, Madras, that held summer courses for teachers of Home Science.

**Department of Education.** The part played by the Educational Department of Madras State in organizing in-service education for teachers is commendable. The department used to conduct vacation courses at Ootacamund, a hill station, during summer holidays. The teachers were selected by the inspectors of schools and the
government bore the expenses of teachers who attended the summer courses. Unfortunately however, these courses were discontinued because of lack of funds.

In 1950, the government of Madras issued specific orders authorizing the school authorities to incur expenditure for attending in-service courses under the grant-in-aid code. This procedure enabled many teachers in urban areas to take advantage of the in-service program offered by the training colleges since expense incurred by teachers for attending these courses was reimbursed by the school.

Between 1950 and 1959, the State Department of Education, in close cooperation with the authorities of the government Museum, arranged courses in museum techniques for teachers of secondary schools. A 15-day program was given by the museum authorities in the government Museum buildings, during summer holidays. The course included practical work in preparing and preserving insects, birds, and reptiles; and it helped the teachers in developing and maintaining museums in their schools. Here again lack of funds prevented the continuance of these courses.

One of the valuable schemes organized by the State Department of Education was for the improvement of teaching English. In collaboration with the British Council at Madras, the Madras English Language Teaching Campaign was launched in 1959.
Mr. Billows, the originator of the scheme, explains it thus:

The scheme combines the training of teachers of beginners with a program of cooperative and self-help for the high school teacher. The basis of work lies in three-week refresher courses (primary courses) in each of which fifty experienced high school and middle school teachers are trained in new teaching methods and formed into teams for training the teachers who will teach English in the Elementary Schools (11, p. 34).

This scheme has proved to be very successful in improving the standard of English teaching, especially at the elementary and middle school levels.

The Education Department had also a program of in-service training for women teachers known as "Home Craft Course" during summer vacation for a period of three weeks. The science teachers were normally released for this course and the entire expenditure was met by the Madras government. The course included both practice and theory in cooking, laundry, home nursing, and first aid. At the end of the course the teachers were given Home Craft Certificates. Because of the shortage of teachers specialized in Home Science, the teachers with Home Craft certificates were utilized to teach Home Science in high schools.

Professional Organizations. The South India Teachers' Union, the organization of teachers of Madras State, is one of the oldest State Teachers' Organizations in India, having been established in 1907. At that time there were members from the whole
of South India, but now membership has been limited to Madras State. Some of the major functions of the union are to be actively connected with educational policies and programs of the government, to safeguard the interest of the teachers in terms of proper emoluments and retirement benefits, and to provide for in-service education of teachers. Conducting refresher and content courses in the various classroom subjects during summer holidays has been a regular feature of the activities of the Union. Reports of these courses as well as helpful suggestions for improving classroom teaching have been published by the Union from time to time. The official journals of the Union are the South India Teacher and Balar Kalvi. The articles published in these two journals are mostly contributions from teachers in service. The Union is affiliated with the All-India Federation of Educational Associations and with the World Confederation of Organizations of the Teaching Profession.

There are 12 District Teachers' Guilds in Madras State. The teachers association in each school is normally affiliated with the District Teachers' Guild and the Guild takes up responsibility for conducting in-service programs. The programs organized by these Guilds have been mainly for the purpose of preparing teachers for changes in the syllabi instituted from time to time.

It is thus evident that nearly all persons concerned with secondary education have tried in some way to provide in-service
education for the benefit of teachers. Nevertheless, it will be noted that most of the in-service program has been in the form of refresher courses. It has to be recognized that refresher courses alone do not contribute adequately to the professional growth of teachers. There is definitely a need for better and more varied activities of in-service education program for the on-going process of professional growth and competence of teachers in service.
CHAPTER III

DEVELOPMENT, ORGANIZATION AND FUNCTION OF
THE DEPARTMENT OF EXTENSION SERVICES

The concept of in-service education of teachers in India has a long history. In-service activities mainly in terms of refresher courses have been available for the past 70 years or so. However, it was not until 1955, that a formal all-India Department of Extension Services was created by the Ministry of Education. There were then established a number of Extension Centers attached to the training colleges in the different states of the country.

The term, in-service education, in a broad sense, includes all experiences and activities provided for teachers and designed to promote personal and professional growth while they are in service. The National Survey of Education of Teachers defines in-service education in the United States of America, as "any activity on the part of teachers in service that tends to improve their professional service" (20, p. 286). According to Edward G. Hunt, "in-service education refers to all the activities of a school system which promote the professional growth of teachers and administra-

ors" (27). The in-service education program must be focused on both the professional and personal growth of teachers.
Need for In-service Education

The importance of the quality of a teacher cannot be overemphasized because the strength and success of an educational system depends on the quality of its teachers. The Commission on Teacher Education of the American Council of Education stressed this point when it said:

The quality of a nation depends upon the quality of its citizens. The quality of its citizens depends, not exclusively, but in critical measure upon the quality of their education. The quality of their education depends more than any other single factor, upon the quality of their teachers (6, p. 2).

The Mudaliar's Commission on Secondary Education in India has also emphasized the importance of a teacher thus:

We are convinced that the most important factor in the contemplated educational reconstruction is the teacher--his personal qualities, his educational qualifications, his professional training and the place that he occupies in the school as well as in the community (38, p. 155).

One should recognize the fact, however, that much depends on the education and training received by teachers. The education of a teacher is not completed on receiving a degree or diploma from a college or university. Pre-service education alone does not ensure a well-trained and well-prepared teacher. Pre-service education is only the first stage in the continuous growth of a teacher for his profession. In the words of the great Indian poet,
Rabindranath Tagore, "a teacher can never truly teach, unless he is still learning in himself. A lamp can never light another lamp unless it continues to burn its own flame" (45)

The education of a teacher is never completed. The teacher is prepared for his profession before he enters it, but he must also be reprepared again and again to keep abreast of demands. To satisfy this need is the purpose of in-service education. Every teacher, whether he is a beginner or a veteran, needs to be aware of the rapid cultural and social changes, advancements in educational theories, methodology and practices, increase in pupil enrollment, and the ramifications of the role of education due to changes in science and technology. Hence the need for a continued study and growth that would raise the competence of the teacher on the job and in turn increase the standard of the whole educational system.

The Commission on Teacher Education in the United States of America has stated this clearly thus:

The continued education of teachers means much more than making up defects in preparation. It means continuous growth in the capacity to teach. It means broadened understanding of human development and human living. And now more than at any previous period in school history, it means growth in one's capacity to work with others, with classroom teachers and principals in a variety of activities, with the administration, with parents and community leaders and with children of different age groups (57, p. 438).
The present trend in in-service education is not limited to programs for classrooms alone but includes the total professional staff of the school system. Glen Hess, while clarifying the purpose of in-service education has referred to the personnel who should receive in-service education. He reports:

The major reason for in-service education is to promote the continuous improvement of the total professional staff of the school system. All teachers, administrators and supervisors must constantly study in order to keep up with advances in subject matter and in the theory and practice of teaching. Continuous in-service education is needed to keep the profession abreast of new knowledge and to release creative abilities (53, p. 13).

Thus it is evident, that educators in India, as in the United States of America have realized the vital need for continuous in-service education of the professional staff of the school, in order to raise the standard of the whole educational system.

The Establishment of Extension Services

The Secondary Education Commission, referred to earlier, was appointed by the Ministry of Education, Government of India, in September, 1952, for the purpose of reorganizing secondary education in India. The report of this Commission was published in June, 1953, and it is considered the most valuable report that has been brought out so far on secondary education. It points out not only the problems of secondary education but also offers
practical suggestions for improvement and development.

The Commission pointed out that the most important factor in the whole scheme of reorganization is the teacher and that there is an urgent need to increase teacher competency through in-service activities. Further the Commission strongly urged the training colleges to take up the responsibility for providing in-service activities. Realizing the importance of the recommendation and the vastness of the suggested plan, the Ministry of Education came forward to organize an in-service program on an all-India basis. The Extension Services Project, for the plan for in-service education was so named, was established as a result of two all-India conferences held in 1954 and 1955.

The first All-India Conference to plan the program of the Extension Services was held in Hyderabad from November 28 to December 3, 1954. Principals and representatives of training colleges interested in in-service education were invited to attend. The major purpose of the conference was to formulate some concrete proposals for Extension Services. These proposals and plans were submitted to the planning committee of the Ministry of Education.

Another All-India Conference was held in Srinagar in July, 1955, to examine further the recommendations of the previous conference and clarify certain issues. K. G. Saiyidian, secretary
to the Ministry of Education, who inaugurated the conferences, explained in his inaugural address that the purpose of the Extension Services would be twofold: (1) it would give the training colleges an opportunity to come into intimate and realistic contact with schools in the neighborhood and thus prepare them to discharge their training function effectively, (2) it would provide for their schools a well organized and technically competent service which might help them to improve their teaching in all directions.

The details regarding the organization, functions, and administration of the Extension Services were worked out at this conference. Further, the Extension Services were constituted as a cooperative project in several respects; (1) It was a cooperative project between the Indian and American educators, (2) It was a cooperative effort between training colleges and public schools in India, (3) Financially it was a cooperative project among the Central Government of India, the Ford Foundation, the United States Technical Cooperation Mission, and the different State Governments in India (58).

After a careful consideration of the reports of these two conferences, in 1955 the Ministry of Education approved the scheme of Extension Services Project and 24 training colleges were designated to begin the project. Thus the first group of Extension Centers was established in 12 states in India but of the 24 colleges, one college,
however, later withdrew from the scheme. The selection of Extension Centers was determined mainly by the capacity of the training colleges to undertake this additional responsibility and the most advantageous coverage of secondary schools.

When the scheme was launched in 1955, it was hoped that other training colleges would also be brought within its ambit in the following year or two. The success of the project in its pioneering work in the field of organized in-service education for teachers and the additional financial support from the Ford Foundation, made it possible to extend the project to 31 more training colleges in 1957-58, thus bringing the total number of Extension Centers to 54.

Following a period of operation of over six years, it became strongly evident that the Extension Centers were rendering valuable service to secondary schools and the Ministry of Education further extended the program to 15 more training colleges. Thus, at present there are 69 Extension Centers attached to training colleges in the different states in India.

For the sake of organizational convenience, the Extension Centers are grouped into five zones. The distribution of Centers by zone and state is shown in Table I. A complete list of the 69 Extension Centers is given in Appendix Ia.

When each group of the Extension Centers was established,
it was sanctioned by the Ministry of Education only for a period of three years. However, the term of office has been extended for each group and at present the 69 Centers have been sanctioned up to 1971.

Table I. Distribution of Extension Centers by Zone and State

<table>
<thead>
<tr>
<th>Zone</th>
<th>State</th>
<th>Number of Centers</th>
<th>Total for each zone</th>
</tr>
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<tbody>
<tr>
<td>1. North Western</td>
<td>Punjab</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jammu &amp; Kashmir</td>
<td>2</td>
<td></td>
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<tr>
<td></td>
<td>Rajasthan</td>
<td>3</td>
<td></td>
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<td>Delhi</td>
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<td>13</td>
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<tr>
<td>2. Northern</td>
<td>Uttar Pradesh</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Madhya Pradesh</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>3. Eastern</td>
<td>West Bengal</td>
<td>5</td>
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<td>Bihar</td>
<td>4</td>
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<td></td>
<td>Assam</td>
<td>2</td>
<td></td>
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<td></td>
<td>Orissa</td>
<td>1</td>
<td>12</td>
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<tr>
<td>4. Central</td>
<td>Gujarat</td>
<td>4</td>
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<td></td>
<td>Maharashtra</td>
<td>4</td>
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<td></td>
<td>Andhra Pradesh</td>
<td>5</td>
<td>13</td>
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<tr>
<td>5. Southern</td>
<td>Madras</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mysore</td>
<td>5</td>
<td></td>
</tr>
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<td></td>
<td>Kerala</td>
<td>5</td>
<td>17</td>
</tr>
</tbody>
</table>
Administration of Extension Services

The Extension Services Project was administered by the All-India Council for Secondary Education, the first three years of its existence. The All-India Council, an autonomous body set up by the Ministry of Education, made available to the central and state governments concrete proposals for the reform and reconstruction of secondary education. The Council dealt also with the problems designed for the improvement of secondary education. Thus the functions of the Council were both advisory and executive.

When the Council assumed direction of the Extension Services Project in October, 1955, only five Extension Centers were functioning. The immediate task of the Council was to attend to the establishment of the remaining Extension Centers and to the organization of Extension Services along proper lines. During the early stages of their operation, the Centers needed help and guidance in organizing and conducting in-service activities since the Centers had little to guide them in their new endeavor.

The Advisory staff of the Council consisted of a Director, a Deputy Director and four Field Advisors. The Field Staff members were recruited from the ranks of competent officers in State Departments of Education or educationists of considerable practical experience. The members of the Field Staff visited the
Extension Centers from time to time and discussed with the staff of Extension Centers and training colleges the problems of the implementation of in-service programs.

The Council supplied to each Center, through the cooperation of the Technical Cooperation Mission of the United States of America in India, a considerable amount of valuable equipment including library books, audio-visual materials and equipment and a jeep or a station wagon (31, p. 1-4).

In addition to organizing, supervising, and evaluating the activities of the Extension Services Project, the Council organized regional seminars for headmasters and educational officers. The aim of these seminars was to provide a venue for teachers, headmasters, and administrators to discuss educational matters and current problems of education with a view to improve teaching-learning process. The Council also arranged special all-India seminars for discussing specific topics or problems such as examinations, teaching of science and social studies and educational administration.

The Council was reconstituted in April, 1959, and its executive functions were transferred to the Directorate of Extension Programs for Secondary Education which was specially set up by the Ministry of Education. The Council's advisory functions were, however, retained. During the three-year term of the Council as
an executive body of the Extension Services Project, it did commendable work. With the Council's advice and guidance the Extension Centers gained greater self-confidence and maturity, thus expanding the range of their activities and enlarging the sphere of their influence.

In 1961, the Ministry of Education established an autonomous body, the National Council for Educational Research and Training, to administer the various centrally governed departments such as Directorate of Extension Programs for Secondary Education, Institute of Audio-visual Education, Central Bureau of Textbooks, Guidance and Counseling, Central Institute of Education, and Department of Science Education. Thus the Directorate of Extension Programs is now a part of the National Council for Educational Research and Training.

Objectives of Extension Services

The primary purpose of the Extension Services, as stated by the All-India Council for Secondary Education is:

To keep the teachers abreast of recent developments in educational theory and practice, to guide them in the solution of their actual classroom problems, and thus to help them develop their teaching efficiency and professional competence (3, p. 2).

Further, the Council was of the opinion that a major purpose of the project was to bring the training colleges into a vital contact
with real situations in schools and thus make their teacher education programs more significant and valuable. In his inaugural address at the All-India Conference of Honorary Directors and Coordinators held at New Delhi in March, 1962, Dr. K. L. Shrimali, Union Minister of Education said that an Extension Center has two-fold objectives:

It must transmit new knowledge which it has in possession and it must also inspire teachers to come to them with their problems. Extension Centers are agencies for transmitting the latest information and developments in education and for serving as friends, guides and philosophers to the teachers in their actual classroom situations (34, p. 6).

**Extension Centers**

The administration, organization and the function of the Extension Centers are described in the following section.

**Administration**

From the time of their inception in 1955, to March, 1959, the Extension Centers were under the administrative control of the former All-India Council for Secondary Education which was an autonomous body functioning under the Government of India. In April, 1959, the former Council was reconstituted into the Directorate of Extension Programs for Secondary Education, attached to the Ministry of Education. Under the new setup the
administrative control of the Centers was handed over to the respective managements of training colleges to which the Extension Centers were attached. The Directorate, however, continues to meet the entire expenditure of the Extension Centers and in addition directs and supervises the activities of the Centers in close cooperation with the management of training colleges.

Location

The Extension Centers are located on the campus of the teacher training colleges or the departments of education to which they are attached. The training colleges or the departments of education are expected to provide housing facilities to the Centers by allotting one or two rooms to serve as office, library, and storage for audio-visual aids. The facilities of the training colleges are used for conducting seminars, conferences, workshops, and exhibitions. The strong desire of the Ministry of Education for in-service education to become an integral part of the teacher training program is further shown by the physical setup of the Extension Centers.

Staff

The staff of the Extension Center consists of the Honorary Director, the Coordinator and the office staff.
Director. The Dean of the education faculty, or the principal of the training college in which the Extension Center is located, becomes the Honorary Director of the Center. In addition to giving over-all guidance and direction to the work of the Center, he coordinates the activities of the Extension Center with that of the training college. His job is purely on an honorary basis.

Coordinator. Each Center has a full-time officer called the Coordinator, who is normally selected from the staff of the training college. The quality and success of the Center's program rests, to a large extent, on the Coordinator, who is the key person in the whole scheme. With the help of his Advisory Council, the Coordinator plans the various activities of his Center, taking into consideration the needs and requirements of the schools under his jurisdiction. He serves as a link between the training college and the associated schools. "He has to sell his ideas to a wide range of persons--from teachers to administrators each of whom has inherited a strong tradition of ideas and practices and who is not always prepared to venture into unexplored paths" (34, p. 10). He organizes and conducts the different in-service activities as well as being in charge of the administrative aspect of the Extension Center.

Office Staff. The office staff of the Extension Center consists of a clerk or a clerk-cum-librarian, a part time technical
assistant and a typist or typist-cum-accountant. The technical assistant operates the audio-visual machines and helps in rendering audio-visual services to the associated schools. A full time helper (peon) and a driver-cum-cleaner also assist the office staff.

**Equipment**

Through the generous help of the Technical Cooperation Mission of the United States of America, the first two groups of Extension Centers, 53 in number, were supplied with a set of equipment consisting of library books, audio-visual materials and a jeep or station wagon.

The library books cover a wide range of subjects such as audio-visual techniques and methods, guidance and counseling, testing programs, measurement and evaluation, organization and administration of secondary schools, methods of teaching school subjects, educational psychology, and other relevant subjects for in-service training.

The audio-visual equipment includes a slide projector, 16 millimeter film projector, tape-recorder, record player, opaque projector, duplicator, generator, films, filmstrips, photographic equipment, torso model, relief maps, charts in science, history and geography, and equipment for reproduction by silk-screen. The state governments have been requested to make provision in
their budget, for a non-recurring grant of Rs.5000/ for each Center
toward supplementing the library of the Extension Centers. (This
sum of Rs.5000/ is a grand amount since a training college generally
provides in its annual budget not more than Rs.1000/ for the pur-
chase of books for its library.)

Finance

The government of India bears the entire expenditure on the
Extension Services Project, the annual expenditure for each Center
ranging from Rs.13,000 to Rs.20,000. During the first three years
of the project, however, the Ford Foundation financed the project.
The grant provided to each Extension Center is to be spent on the
pay and allowances of the officers and the establishment of audio-
visual services, publications, exhibitions and fairs, transportation,
traveling allowance and remuneration to resource personnel, and
on other contingent expenditures.

After repeated requests by the All-India Council for Secondary
Education and later by the Directorate of Extension Programs for
Secondary Education, the state governments have now agreed to
pay to each of their Centers an amount of Rs.6,000 every year
towards the travel expenses and daily allowances of the participants
who attend the various in-service activities of the Centers. Some
of the states pay this amount directly to the Centers, while the
others treat it as admissible item for grant to the schools from which the participants are drawn (30, p. 4-5).

Jurisdiction of Each Center

At the time of the establishment of the Extension Services Project, each Center was expected to cover approximately 50 secondary schools proximate to it. Later on, as the project developed more schools were brought under the jurisdiction of each Center. The Education Departments of some states have taken the responsibility to allocate to each Center in their state, specific districts so that the entire area of the state may benefit by the extension activities. However, the number of schools served by each Center varies and this results in some Centers having greater numbers than they can possibly manage. This shortcoming has been rectified now to a large extent by the establishment of Extension Units, which have taken over schools from Centers that had too many.

Program of Activities

The in-service activities recommended by the Secondary Education Commission in 1953, were:

(1) refresher courses,
(2) short intensive courses in special subjects,
(3) practical training in workshop, (4) seminars and professional conferences (38, p. 169).

The Extension Centers have added other types of activities to this list so that the in-service activities would cover most of the needs and requirements of the schools they serve. When the activities of the Centers for 1955-58 were reviewed by the All-India Council for Secondary Education, it was stated that:

With more than two years of experience behind them, most of these Centers offer a comprehensive program of in-service training through (a) week-end short-term and vacation courses, (b) seminars, workshops and study circles, (c) education weeks and exhibitions, (d) library service, (e) audio-visual aids, (f) educational guidance and (g) publications (3, p. 2).

Each Center plans its activities under the guidance of an Advisory Council which consists of representatives from the education department, heads of schools, faculty of the training college and other educators. The Honorary Director of the Center is the president of the Advisory Council and the Coordinator is the secretary. The Advisory Council meets prior to the beginning of each school year in order to draft the program of activities for the next year. Further, the Advisory Council meets periodically to review the progress made and suggests additions or modifications to the program. Thus the Center assures that the program of in-service activities it offers meets the needs of the schools it serves.
Extension Units

During 1963-64, the Directorate of Extension Programs for Secondary Education established 24 Extension Units in the various states of the country. (See Appendix Ib for the complete list) The Units were designed to enable the training colleges to introduce a limited but effective program of in-service education for a compact area of schools around them.

Each unit is provided with a grant of Rs.5000/ per year as recurring expenditure. In addition, an amount of Rs.5000/ is assigned as non-recurring expenditure on books and equipment, since these Units are not supplied with audio-visual aids and library books as in the case of the Centers.

The Coordinator is from the faculty of the training college, to which the Unit is attached and he or she is a part-time worker. The field of operation for each unit is limited to approximately 20 schools. The program of activities and services of the Units are similar to that of the Extension Centers but are rather restricted due to the smaller number of associated schools. In regard to the conduct of the programs by a Unit, due consideration is given to the limited man power and resources available.

As a result of the establishment of Extension Units, more schools were brought under the influence of the Extension Services,
thus helping to provide in-service activities to a larger number of teachers.
CHAPTER IV

MAJOR PROGRAMS OF EXTENSION SERVICES

The Major programs of the all-India Extension Services can be broadly classified into two groups. The first group comprises of the organization and conduct of content and refresher courses, workshops, seminars, conferences, study circles, demonstration lessons, action research, experimental projects, and Science and Social Studies clubs. The second group of activities consists of library service, audio-visual service, guidance service, and publication of in-service materials. The Extension Centers during the entire year render to schools the different types of services mentioned in the second group. The various courses, workshops, seminars, and the like are organized from time to time according to the needs of the schools.

The different activities of the Extension Centers are described in the following section with special emphasis on the purposes for which they are organized.

Courses

The various training courses organized by the Extension Services can be broadly classified into two main categories, refresher courses and content courses.
Refresher Courses

Refresher courses are generally organized to give an opportunity to teachers to refresh and improve their knowledge in classroom subjects and widen their experience in the methodology of teaching. They enable the teachers to keep abreast of the progress in educational theory and practices. The duration of a refresher course is normally from two to four days. When these courses are conducted during weekends, as is done in most of the Extension Centers, they are called weekend courses. Weekend does not necessarily mean Saturday and Sunday, for commonly, courses are conducted from Friday afternoon to Saturday evening, or on three or four Saturdays. Separate courses are arranged for each classroom subject and for each grade.

Many of the Extension Centers utilize a part of the refresher course for practical activity such as preparing teaching aids of the following types: maps, charts, models, and other simple audio-visual aids. The teachers find the practical activity very useful as they seldom have access to all of the source materials used during the refresher courses.

Content Courses

Content courses are specially organized for those teachers
who lack the necessary background knowledge in a specific subject, to carry out effective teaching. Science teachers who specialize only in Natural Science (Biology) in their undergraduate work find it difficult to teach Physical Science (Physics and Chemistry) and vice versa. The same case applies to History or Economics graduates who may have to teach classes in Social Studies or perhaps in Geography. Therefore, content courses are organized with the help of competent resource persons from the training college or university departments in order to raise the teachers' proficiency in specific subjects. The Indian Universities, unlike the universities in the United States of America, do not offer courses outside their regular undergraduate or graduate program and opportunities are not provided for teachers to take just one or two courses they might need from the regular program. The Extension Centers are helping the teachers in this respect by arranging content courses. Usually these courses run from four days to two or three weeks during the summer vacation.

Seminars

A seminar has been defined as a small class or group at a university engaged in discussion and original research. But now the term is used in a wider sense to describe a meeting or study camp, where persons belonging to the same profession meet in order to
exchange ideas, share experiences, and discuss in a democratic atmosphere topics representing common interests and needs.

A distinction has been made between a seminar and a workshop by the All-India Council of Secondary Education. According to the Council,

A workshop is an arrangement which provides special facilities including particularly a wealth of source materials and specialized personnel for group conferences and individual work. The workshop envisages productive results, something which the participants can turn out and which may be useful to them in their professional work. The seminar may or may not have this aspect in view. It may also be said that leadership and responsibility are shared more often in a workshop than in a seminar. Again while the workshop deals with problems that are evolved in the gathering itself as a result of group discussion, the seminar is generally concerned with topics that have been selected in advance (1, p. 3).

Thus a seminar embodies a lecture-discussion technique. In order to stimulate the discussion that follows the lecture on a selected topic, some Centers use a worksheet approach. A list of problems that are related to the selected topic is handed out. The teachers react to the problems pertinent to them by discussing them in groups and suggesting possible solutions.

The following are some examples of topics on which seminars are conducted at many Centers: teaching English by structure method, discipline problems, practical work in General Science, student government, use and maintenance of cumulative records, recent trends in education, standards of achievement in secondary
schools, and new approaches to the teaching of Social Studies.

Workshops

According to Alonzo F. Meyers, the first regularly organized educational activity designed as a workshop, was conducted at Ohio State University in 1936. By 1951 the workshop, as a device of in-service education, had extended all over the United States of America and had spread to foreign lands. A workshop can mean "almost anything from a series of field trips or a scientific expedition to intensive study of educational problems." Some of the characteristics of a workshop which makes it a valuable means of in-service education are given below:

1. It emerges to meet the existing needs of the participants,
2. It provides expert assistance (commonly from higher institutions),
3. It is flexible and consequently can be adapted to many diverse groups and situations,
4. It provides for the pooling of information and sharing of experiences,
5. It motivates participants to change their behavior where and when such changes may be helpful,
6. It gives added support to a changing program by assuring approval of the group,
7. It develops both individual and group skills in attacking new problems,
8. It adds morale to a faculty or a school system,
(9) It strengthens working relations with others in different status assignments,

(10) It develops knowhow in utilizing democratic procedures in other situations (such as teachers working with students),

(11) It redefines and refines the objectives of education,

(12) It evaluates both the results of the effort and the process by which results are attained (48, p. 26).

In a workshop intensive consideration is given to practical problems that have arisen from the daily functioning of the teaching job. Solutions to problems are worked out in groups by the pooling of information and resources. The workshop emphasizes informality and establishes good rapport and interrelatedness.

It is essential to have library facilities and other necessary source materials available to the participants of a workshop. It is equally important that as a workshop draws to a close, the participants evaluate their experience and formulate their views regarding the progress they have made.

Conduct of workshops has been one of the common features of the Extension Centers. At the beginning, however, it took some time for the teachers to grasp the idea of a workshop and especially to learn to do by doing rather than listening passively to a lecture. Teachers in workshops have now come to a stage where they can pinpoint their problems, suggest concrete measures for the solution, and propose a definite plan for assessing the results.
Study Circles

The various seminars and courses conducted from time to time by the Extension Services have created an interest in some teachers to pursue the line of new thought acquired through in-service activities. The study circles were thus established under the auspices of Extension Centers for teachers who liked to further their selected field of interest. Teachers who volunteered to discuss similar problems or same subject matter areas meet periodically, either at the Extension Center or in one of their schools. The frequency, place, and length of meetings held by the study groups, and the period of time during which they found it profitable to continue their joint activities varied depending on the group's purpose, composition, and progress. The study circles that are meeting to discuss problems and work out new techniques in any one specific subject, are laying the foundation for subject matter teacher associations at various levels on a state-wide basis. The Directorate of Extension Programs for Secondary Education is encouraging this project and hopes that these groups will help to raise the standards of the teaching profession.

Demonstration Lessons

One of the popular and often requested in-service activities of the Extension Centers is demonstration lessons. The schools
welcome the training college faculty or specialists to give demon-
stration lessons in order to show new techniques in teaching or
effective methods of teaching a difficult unit. The teaching of
English by the structure method has been a common topic for demon-
stration. The demonstration lesson presents a practical situation
to illustrate what experts have been propagating in theory. It is
also a challenge to the resource person because classroom teaching
often presents unexpected problems.

Generally a demonstration lesson is followed by a discussion
with the teachers who observed the lesson and the resource person
who taught that lesson. Treatment of critical events, analysis and
evaluation of teacher-pupil interaction and suggestions for the
development of teaching competence form the main points for the
discussion session.

**Experimental Projects**

The former All-India Council for Secondary Education and the
Directorate of Extension Programs for Secondary Education have
been encouraging enterprising schools to try out experiments that
would result in improvements in classroom instruction or school
organization. The program of experimentation evolves out of the
felt needs of the teachers and heads of schools, in regard to their
day to day problems.
The Extension Center helps the schools in defining and formulating the experimental projects. The Center also gives guidance in carrying out the scheme through the visits of Extension personnel and training college staff and by organizing special seminars or workshops for the teachers and principals concerned. The Directorate of Extension Programs places great value on experimentation and is of the opinion:

That experimentation is an expression of the measure of success of educational reforms launched from time to time. However small the effort may be it still indicates a small departure from the usual routine procedures and it is felt that the fullest encouragement should be given to such enterprises (34, p. 93).

The Directorate grants financial assistance for carrying out selected experimental projects. The schools that are enthusiastic about undertaking experimental projects submit to their state government a detailed proposal and its financial implications. Frequently the Extension Centers help the schools in preparing the proposals. The state government recommends worthwhile projects to the Directorate through the central government. The selection committee of the Directorate screens the proposals received from all the states and sanctions financial assistance to worthwhile educational ventures. Due to limited funds for the scheme some of the selected projects receive the grant even a year later.
Action Research

Action Research is another in-service activity which is gaining momentum in many of the schools. Action research was born out of the view that educational research is not the prerogative of a few professional students in education. Practitioners such as teachers, supervisors, and administrators would make better decisions and engage in effective practices if they too conducted research as a basis of their decisions and practices. Action research has been defined by Stephen M. Corey as "The process by which practitioners attempt to study their problems scientifically in order to guide, correct and evaluate their decisions and actions" (16, p. 6).

The significant elements of a design for action research are:

1. The identification of a problem area about which an individual or a group is sufficiently concerned to want to take some action,

2. The selection of a specific problem and the formulation of an hypothesis or prediction that implies a goal must be viewed in relation to the total situation,

3. The careful recording of actions taken and the accumulation of evidence to determine the degree to which the goal has been achieved,

4. The inference from this evidence of generalizations regarding the relation between the actions and the desired goal,

5. The continuous retesting of these generalizations in action situations (16, p. 40-41).
If the problem undertaken is one of general concern to many teachers, then it becomes a cooperative action research. Working in a common problem area the teachers pinpoint the problem, list the causes, form action-hypotheses, test these hypotheses and arrive at solutions. In action research there is great possibility for the improvement of instruction and school practices since the teachers themselves are the investigators.

Dr. S. M. Corey and Dr. C. B. Mendenhall, in their capacity as consultants with the Directorate of Extension Programs for Secondary Education have conducted a number of workshops at the various Extension Centers. They have shown how teachers, instead of waiting for the research specialists, could themselves investigate classroom problems and search for solutions in a scientific way. It is hoped that teachers will adopt this in-service activity more and more.

Science Clubs and Science Fairs

One of the projects undertaken by the All-India Council for Secondary Education and later followed by the Directorate of Extension Programs for Secondary Education was the strengthening of science teaching in secondary schools. The two important activities carried out in this connection, are the establishment of
Science Clubs and the organization of Science Fairs which have provided opportunities for creative scientific activities among the pupils.

Science Clubs

The organization and conduct of Science Clubs in schools were discussed in detail at the All-India Seminar on Teaching of Science in Secondary Schools held at Taradevi in June, 1956. The aims and objectives of a Science Club as formulated at the All-India Seminar, are to:

1. Inculcate a scientific attitude in the pupils,
2. Encourage the pursuit of science as a hobby,
3. Stimulate pupil participation and initiative in learning science,
4. Encourage pupils to take an intelligent interest in the environment and everyday experiences,
5. Encourage individual and group initiative,
6. Contact other Science Clubs and to exchange information and activities,
7. Aim at a regional, leading to wider affiliation on state, national, and international levels.

The report of the seminar has also given guidance as to the organization of the Science Clubs.

1. The science teacher normally will sponsor the Club.
2. The head of the school should be a patron of the Club.
(3) Membership should be open to all pupils studying science and others interested in science.

(4) The resources of the Schools should be available to the Clubs.

(5) An elected executive committee should be formed from among the pupils—a chairman, a secretary, an assistant secretary, a treasurer, a librarian, a store-keeper, a publicity officer and class representatives.

(6) A nominal membership fee should be charged from all the members.

(7) The Club should tap other resources also.

(8) The Club should be located in the school.

(9) The members of the Club may be encouraged to extend the activities of the Club in their own locality.

(10) The duties of the Patron, Sponsor, and office-bearers should be:

**Patron:** To extend all facilities to the Club to function effectively and to cooperate in its activities.

**Sponsor:** On the Sponsor devolves the initiative in starting the Club and keeping it at a high pitch of activity and interest. The sponsor should only supervise, guide and lead and should not instruct or dictate. He should be watchful over the members and guard them against accidents.

**Chairman:** To preside over all the formal functions of the Club; to carry out correspondence; invite guests.

**Secretary:** To maintain the minutes of meetings and the activities of the Club; to carry out correspondence; invite guests.

**Assistant Secretary:** To assist the Secretary and to act for him in his absence.
Treasurer: To collect subscriptions and maintain accounts of receipt and expenditure.

Librarian: To maintain a catalogue of the library, to issue and receive books; to purchase books sanctioned by the executive committee; file and keep a record of papers written by the members of the Club.

Publicity Officer: To publicise the activities of the Club within and without the school; to contact newspapers and seek wide publicity for the activities of the Club, its meetings, its magazines, its celebrations (exhibition, fair, etc.).

Members: To participate actively in the meetings of the executive committee in framing policies, and enlist the cooperation of the members of the class and enlist new members (2, p. 191-193).

In order to give impetus to the Science Club movement, the Directorate of Extension Programs for Secondary Education grants a sum of Rs. 1200/ to each selected school for starting a Science Club. The selected schools for aid under this scheme should satisfy the following conditions:

1. They should be High or Higher Secondary Schools;
2. They should have laboratories with adequate equipment for teaching science;
3. They should be able to provide suitable working and storage space, easily accessible to Club members, and where workbenches can be installed;
4. They should submit a list of Club activities and estimate of costs for the current year;
5. They should agree to submit quarterly reports of their Club work;
(6) They should be able to raise funds to meet the recurring costs to the extent of at least Rs. 300/ year;

(7) They should give an assurance that (a) the grants will be spent only on the Science Club, (b) that all the tools, science kits and other equipment given to them will be returned to the Directorate if the Clubs cease to function.

With the encouragement received from the Extension Centers, a number of schools have started Science Clubs either through their own efforts or with the grant received from the Directorate. These Clubs are conducting varied types of activities, which give opportunities to pupils to develop scientific attitudes such as lively curiosity, open-mindedness, creativity, originality, intellectual honesty, and independent inquiry. The workshops organized by the Centers for Science Club Sponsors have also helped greatly in guiding the Clubs in their program of activities.

Central Science Clubs

The Science Clubs established in training colleges having Departments of Extension Services, are called the Central Science Clubs. These Clubs are organized on the same basis as the school Science Clubs except for the fact that a grant of Rs. 2000/ is given to the Extension Centers to aid in starting the Central Science Clubs. These Clubs benefit both the teacher trainees of the training colleges and the teachers from the associated schools. They also form the nuclei for the Science Clubs in schools.
Science Fairs

One of the factors that has been responsible for stimulating the Science Club activities is the conduct of Science Fairs. Beginning from December, 1961, Science Fairs have been organized and conducted annually at each of the Extension Centers, the associated schools and their Science Clubs participating in them. The Directorate sponsors the program of Science Fair by a special grant of Rs. 500/ to each Extension Center.

Science Fairs provide opportunities for students to give expression to their scientific abilities and also help the science teachers to discover hidden scientific talents in students. The Directorate of Extension Programs for Secondary Education has started the all-India Program of Science Talent Search which provides enrichment programs for students who show special talent in the Science Fairs and contests.

Science teachers, who are also the Science Club Sponsors, have a tremendous responsibility in this respect. They have to keep abreast of the latest advancements in science specially in those related to school science and those that are of interest to school children. The teachers have also to provide experiences that would stimulate a desire for knowing the facts, and for objective observation of facts, opinion forming on the basis of facts.
alone, and an open-mindedness for revising opinions. In addition to their personal efforts to gain knowledge and experience, the teachers can equip themselves better by participating in the various activities of the in-service education.

**Examination Reform**

In helping to carry out the program of examination reforms which has been launched on an all-India scale by the Ministry of Education, the Extension Centers have a significant role to play. The main areas where the Centers are assisting are:

1. Orientation of teachers to the new approach,
2. Improvement in home examinations in schools,
3. Improvement in internal assessment procedures,
4. Help rendered to reform internal examination.

A number of workshops on educational evaluation have been conducted at the various Centers, with the Evaluation officers acting as resource persons. These workshops have enabled the participating teachers to see that reform has to take place not only in the examining and evaluating procedures of schools, but also that tremendous improvement is needed in instructional procedures.

Some Centers are guiding selected schools to try out a modest program of improved methods in assessing home examinations based on the new approach to evaluation.
Experimental projects in the area of evaluation have also been taken up by some schools and these schools are concentrating on developing tools for measuring the achievements of various abilities that are involved in the learning process.

Bringing about changes in the examination procedure is a very difficult and complicated task. It is only by slow and steady steps that the reform can be achieved and the Extension Services have in this connection a tremendous responsibility.

**Intensive Work and School Improvement**

The intensive program that is carried on in selected schools by the Extension Centers has been mainly concentrated work in areas where the need has been felt or expressed. Naturally, this involves frequent visits to these schools by the Extension staff and lecturers concerned and help and guidance are given to teachers in carrying out the intensive program. The number and type of activities undertaken in the selected schools, and the duration of the work done is varied. But the ultimate aim is the improvement of teaching practices and programs in as many fields as possible, thereby bringing about an over-all change in the schools.

The chief criteria used in the selection of schools for intensive work are:
(1) The felt needs of the schools for improving school practices and programs,

(2) The willingness and cooperation of the staff in trying out new methods and techniques or to rethink the old procedures in the light of changes for improvement,

(3) The availability of resource persons--mostly from the training colleges--to guide this work.

The intensive work has to be carried out in a school over a period of time so that some visible change is brought about in the school. Moreover, this means that the program is continually evaluated and modified in the light of past experiences. The purposes for which intensive work is being done in schools are:

(1) To improve the teaching methods by acquainting the teachers with the latest techniques in teaching,

(2) To give help in specific areas or subjects,

(3) To introduce new methods: Project method in Social Studies, Group method in English, for example,

(4) To start and develop club activities: Science, Social Studies, cocurricular and parent-teacher associations,

(5) Making and using audio-visual aids,

(6) To start and develop study circles,

(7) To discover and use new books,

(8) Guidance in experimental projects and action research programs,

(9) Maintaining and improving Library Service, Museums, etc.,

(10) Maintaining Cumulative Records,

(11) Guidance to children with behavior problems.
In order to work out an effective intensive program, the Coordinator plays many roles. As a researcher, he studies the need for intensive work by consulting his colleagues, progressive heads of schools and teachers and refers to books and periodicals pertaining to recent trends in education. As an organizer and administrator, he plans for the intensive work, bearing in mind all those who will be involved in this: staff of the training college, heads of schools, teachers, and the inspectorate. In addition, his plan has to fit into the framework of each school, its curriculum and its setup. The Coordinator becomes also a teacher at times by giving demonstration lessons, working out simple experimental projects and action research programs. In order to take up intensive work, the Coordinator meets informally with individual teachers, visits their classrooms and watches their work, thereby helping them to identify the problems or problem areas. He attends teachers' meetings in schools with the same object in view. The workshops and seminars he conducts from time to time also enable him to locate again problems and problem areas. Finally, in Dr. Lawler's words, "the Coordinators have the responsibility for (1) increasing the experimenter's areas of new knowledge, (2) planning program with the group, (3) developing readiness for work and ideas, (4) developing skills needed to carry out ideas and experimentation." In short, the program of intensive work is
planned out in such a way that it revitalises the secondary schools (62, p. 1-4).

Library Services

The Extension Library at each Center has approximately 3,000 books that were supplied by the Technical Cooperation Mission of the United States of America in India. A catalogue of the library books available at the Center is circulated to the associated schools and heads of schools request the books their teachers need. Some Centers have a method of sending out library books regularly every month and collecting them after a certain period of time.

The teacher participants of seminars, workshops, and courses make good use of the library when such courses are conducted at the Center. Heads of schools and teachers visit the library for borrowing books or for reference work. The staff and the teacher trainees of the training college also use the library quite often.

Some of the Extension Centers have formed outposts for library service in the districts. A set of 100 to 150 books is left in charge of a Headmaster of a selected school and the nearby schools use the books according to their convenience. By this arrangement there is a considerable amount of saving on postage and wear and tear of the books. Moreover, the teachers who are
away from the Extension Center have a readier access to the library books.

Many Extension Centers bring out periodical digests and reviews of selected books so as to bring them to the attention of the schools.

Audio-Visual Services

The different phases of the audio-visual service of the Extension Centers to the associated schools can be listed as follows:

(1) Lending of Science and Social Studies charts, torso model, and relief maps,

(2) Showing of films and filmstrips at schools that do not have projectors,

(3) Encouraging the schools to use tape recorders specially for language teaching,

(4) Popularizing improvised teaching aids,

(5) Making of simple but useful charts and maps,

(6) Demonstrating silk screen equipment to make posters,

(7) Conducting workshops to teach the manipulation of audio-visual equipment such as film projectors and opaque projectors,

(8) Showing of film, filmstrips, maps and charts during workshops, courses, and seminars,

(9) Organizing special workshops for creating interest in teachers to make better use of simple aids, such as blackboards and bulletin boards.
(10) Helping to prepare exhibits and organize pupils work for exhibitions and science fairs.

Publications

Publications of the Extension Centers have been the most active agencies in popularizing and propagating the work of the Extension Services to those concerned with the in-service education of teachers. Each Center maintains a program of publication suited to its needs and requirements. Reports of the proceedings and recommendations of seminars, workshops, and courses are printed and published so that these will also be useful to teachers who did not have an opportunity to attend. Periodical newsletters and book reviews or book digests are general features of most of the Centers. Special publications are brought out on unusual projects carried on by either Extension Centers or some schools such as Statues in Madras, Birds at Vedanthangal (Bird Sanctuary), Diagnostic Tests in Mathematics, and Sample Cumulative Record Cards. The Extension Centers also exchange their publications.
CHAPTER V

EVALUATION OF THE EXTENSION SERVICES

The Extension Services Project which was started in 1955, on an experimental basis, with 24 centers, has grown into a well-established and successful in-service program. Now the Centers number 69 and in addition there are 24 Extension Units. The Extension Services Project has been acclaimed as one of the most successful schemes in the entire program of reorganization of Secondary Education in India.

Evaluation of Extension Services by The Directorate

The All-India Council for Secondary Education, which exercised a general supervision over the Extension activities the first three years of its inception, devised its own methods for evaluating the activities. Each Extension Center was requested to send to the All-India Council for Secondary Education, a monthly report of its activities and the significant items from all these reports were published in the Council's monthly journal, "Teacher Education".

Every year zonal conferences were held, when the Honorary Directors and Coordinators of all the Centers in each zone met for two or three days and exchanged information, shared
experiences, and tried to find solutions for particular problems. The Advisory Field Staff of the Council were normally present at these conferences to guide the proceedings. Reports and recommendations of the conferences were also published.

The Advisory Field Staff of the Council visited many of the Extension Centers during their term of office, in order to evaluate the activities of the Centers personally. The visits of the Field Staff were valuable because they gave helpful suggestions and advice for further improvement and development of the Extension activities.

Following the taking over of the executive functions of the All-India Council for Secondary Education by the Directorate of Extension Programs for Secondary Education in 1959, the Directorate continued the monthly and annual reports, zonal conferences, and visits of its Deputy Directors.

Further, the Directorate advocated the periodical assessment of the activities by the Coordinators serving in the Centers by means of questionnaires that were to be completed by participating teachers. The Coordinators were also requested to obtain opinions of other persons connected with the Center's activities. The details regarding the questionnaires were discussed at the first All-India Conference of Honorary Directors and Coordinators held at Delhi in March, 1962 and sample proformas were designed.
The recommendations of this conference in regard to the assessment of the activities of Extension Centers are as follows:

1. The Coordinator should prepare three questionnaires, one for teachers, one for heads of schools and one for the inspecting officers of his region (For suggested proformas see Appendices II, III, and IV).

2. The Coordinator should assess his program and send quarterly and annual reports to the Directorate of Extension programs for Secondary Education (see Appendix V).

3. The Coordinator should make approximately a 1000 word report of the most significant activity of his Center and send it to the Directorate of Extension Programs for Secondary Education once in three months.

4. The Coordinator should collect information about the utility and effectiveness of the Center's publications by making use of a post-card as suggested in Appendix VI. (34, p. 27-33).

These recommendations were implemented immediately and for every quarter of the year the Coordinators send to the Directorate, in addition to the questionnaire completed by themselves, a total of 21 questionnaires--ten completed by selected teachers, ten by heads of schools, and one by the inspecting officer.

It was also suggested at the Conference that an external assessment committee should be appointed to take up the question of the assessment of each center periodically. The details regarding the work of the committee are as follows:

1. The External Assessment Committee may visit each Extension Center once in two or three years.
2. The Committee should look into the questionnaires filled in by (I) Coordinator, (II) Teachers, (III) Headmasters, (IV) Divisional Inspector of Schools.

3. The Committee should look into the proceedings of Advisory Committee.

4. The Committee should look into the descriptive reports of significant activities sent to Directorate of Extension Programs for Secondary Education.

5. The Committee should interview the staff members of the college, selected teachers, Headmasters and Divisional Inspectors of Schools.

6. The Committee should visit selected schools to find out the impact of Extension Services.

7. The Committee should assess the work of the Extension Center and give guidance about the improvements that are needed (34, p. 80).

Evaluation of Participation of the Associated Schools in Extension Services

The impact of the Extension Services on the associated schools is multifaceted. The most noticeable improvements have been brought about in the attitude of teachers and the heads of schools. As a result of Extension activities they have come to realize the need for change and improvement in their classroom teaching as well as the importance of professional competence. This study is an effort to evaluate the Extension Services through an appraisal of participation by teachers and administrators in Extension in-service activities.
The Object of the Investigation

The object of the investigation was to evaluate the Extension Services through an analysis of:

1. Teachers' participation in in-service activities including intensity of participation, preference of activities and problems and inhibiting factors,
2. Teachers' and administrators' opinion concerning the adequacy of the help and guidance they have received,
3. Teachers' and administrators' expectations and desires in regard to the kind of activities to be organized,
4. Teachers' and administrators' suggestions for the improvement of in-service activities.

Development of the Questionnaires

For use in this investigation, two sets of questionnaires were developed, one for teachers and another for heads of secondary schools. A well constructed questionnaire may be regarded as a substitute for the personal interview. Both Hillway and Good have pointed out the advantages of questionnaires over interviews in collecting data by mail over a large area (23, p. 228). Further, questionnaires save time and expense. According to West, the questionnaire has a unique advantage and properly constructed and administered, it may serve as a most appropriate and useful data gathering device (10, p. 144).
In designing the two questionnaires, the characteristics of a good questionnaire as advocated by both West and Hillway were followed. Characteristics of a good questionnaire according to these authors are given below:

1. It should be as brief as possible.

2. It deals with a significant topic, a topic the respondent will recognize as important enough to warrant spending his time in completing.

3. It is as short as possible, only long enough to get the essential data.

4. It is attractive in appearance neatly arranged and clearly duplicated or printed.

5. Directions are clear and complete, important terms are defined, each question deals with a single idea, all questions are worded as simply and as clearly as possible and the categories provide an opportunity for easy, accurate and unambiguous responses (10, p. 151 & 26, p. 202).

The first draft of the questionnaires was scrutinized by the members of the doctoral committee and their suggestions were incorporated. The copies of the questionnaires were then distributed to a group of students registered in a course in Educational Research at Oregon State University. The students studied the questionnaires in detail with special emphasis on the format of the questionnaires and the ease with which the questionnaires could be completed by the respondents. Their recommendations were carefully considered in modifying the questionnaires. With
the final approval by the members of the committee, the questionnaires were sent to India for printing and distribution (see Appendices VII and VIII for copies of questionnaires).

**Distribution of the Questionnaires and Collection of Data**

Although the study is intended to analyze the participation of all the secondary schools associated with the various Extension Centers in India, it was decided to use the associated schools in Madras State, considering Madras State as the case study. In using Madras State as the case study, for this investigation, it was assumed that similar conditions exist in most of the states in India because of the centralized system of education and similar educational problems there. Moreover, Madras State is the home state of the writer and she has greater knowledge of the schools and Extension Services Centers of her state.

Madras State has approximately 1,700 secondary schools which are served technically by one or other of the seven Extension Centers in the state. For the purpose of this investigation all the schools in the state were considered to comprise the "population". From this population, by means of stratified random sampling technique, 112 schools were selected to represent the sample.

A stratified random sample is representative of the total population. Sampling is a well-established method whereby part
of a whole is selected in order to reduce the cost, increase the speed and scope and improve the accuracy of estimates relating to the whole (15, p. 1-2). When a simple random sample is taken in each stratum, the sample thus obtained is a stratified random sample.

For the sampling procedure the seven groups of schools served by the seven Extension Centers in Madras State were considered as the seven strata. By a simple random sampling method 16 schools were selected from each stratum. Five teachers selected at random from each of these schools completed the questionnaires designed for them. The administrators from these schools also completed the questions appropriate for them. Thus by stratified random sampling technique, 560 teachers and 112 administrators were selected to be the sample for the investigation.

Copies of the relevant questions were distributed to teachers and administrators (heads of schools) through the Extension Centers. Before the distribution, the writer corresponded with the Honorary Directors and the Coordinators of each of the seven Centers in Madras State, requesting permission to use their associated schools for the investigation. The Coordinators cooperated in distributing as well as in collecting the questionnaires.

The questionnaires designed for teachers were distributed to 560 teachers instructing in 112 schools. The administrators'
questionnaires were distributed to the same 112 schools to be completed by the heads of schools. Completed questionnaires were returned by 347 teachers and by 69 administrators (62 percent in both cases). A total of 91 schools (81 percent) returned the questionnaires.

The point by point analysis of the questionnaires completed by teachers and administrators as well as the interpretation of the data collected is presented in the following chapter.
CHAPTER VI

ANALYSIS OF THE QUESTIONNAIRES

The questionnaires that were completed and returned by teachers and administrators provided the data for the study of the impact of the Extension Services Project on secondary schools. A total of 347 teachers and 69 administrators from 91 schools associated with the Extension Centers in Madras State participated in this study.

The analysis of the questionnaires is given in two sections, the first section dealing with the responses from the teachers and the second with that of the administrators.

Analysis of Teachers' Questionnaire

The analysis of teachers' questionnaire was carried out under the following heads:

(1) General information about participating schools
(2) General information regarding teachers
(3) Teachers' participation in in-service activities

General Information about Participating Schools

The associated schools of the Extension Services in Madras State are of three kinds--those under government management,
those managed by local boards and those run by private agencies such as religious and other denominational bodies and registered trusts and societies. Both local board schools and private schools are aided by the annual state government grants and are under the supervision of the state governments.

In general, schools directly managed by the government form a comparatively small proportion of the total number of schools in the state. The large majority of the schools are under local boards such as district boards, municipality, and corporation. In Madras State, government schools form six percent, local board schools 54 percent, and private schools 40 percent.

All the schools that participated in the investigation were secondary schools, having grades one to ten or six to ten, ten being the highest grade of the school. However, the teachers who responded to the questionnaires were those teaching only grades six through ten.

**Government, private and local board schools.** Of the 91 schools that participated in this study, 68 schools, or 74.7 percent, were managed by private agencies and this formed the largest group as indicated in Table 2. The six government schools comprise the smallest group.

Table 3 shows the distribution according to boys' schools, girls' schools and coeducational schools. A majority of the schools,
40 in number, or 43.0 percent, had coeducation. There were 28 boys' schools or 31.7 percent and schools where only girls were admitted were 23, or 25.3 percent.

Table 2. Distribution of Schools According to Management

<table>
<thead>
<tr>
<th>Management</th>
<th>Number of Schools</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private agencies</td>
<td>68</td>
<td>74.7</td>
</tr>
<tr>
<td>Local boards</td>
<td>17</td>
<td>18.7</td>
</tr>
<tr>
<td>Government</td>
<td>6</td>
<td>6.6</td>
</tr>
</tbody>
</table>

Table 3. Distribution of Schools According to Boys', Girls', and Coeducational Schools

<table>
<thead>
<tr>
<th>Classification</th>
<th>Schools Managed by</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local board Private Government</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coeducational schools</td>
<td>10</td>
<td>26</td>
<td>4</td>
</tr>
<tr>
<td>Boys' schools</td>
<td>6</td>
<td>22</td>
<td>-</td>
</tr>
<tr>
<td>Girls' schools</td>
<td>1</td>
<td>20</td>
<td>2</td>
</tr>
</tbody>
</table>

In Madras State as in the rest of the country, the present trend is towards coeducation and the recently established schools admit both boys and girls. In a coeducational school, however, the percentage of girls enrolled is very small compared to that of the
boys, and generally forms less than ten percent of the total enrollment.

**Distance from the Extension Centers.** The schools that are associated with the Extension Centers are situated at varying distances from the Centers. Some are on the same campus as the Center and others are situated at a distance of as much as 150 miles. For the purpose of this analysis, the schools were grouped into two categories; those situated within a radius of 25 miles of the Center were called "near" schools and the rest as "distant" schools. The 25 mile radius was arrived at considering the transportation facilities and the ease with which a teacher can travel to the Center for attending in-service activity and return to his school the same day. Because of the insufficient travel expenses and daily allowances provided and the inadequate facilities of boarding and lodging, the teachers find it difficult to stay overnight at or close to the Extension Centers. It should be pointed out, however, that in-service activities are not conducted always at the Extension Centers.

According to the information on Table 4, 55 schools or 60.4 percent, were within a radius of 25 miles from the Extension Centers, and 36 schools or 39.6 percent were away from the Center.

In the case of the schools managed by the local boards, approximately two-thirds of the total number have schools more
than 25 miles from the Extension Centers. Those schools were all district board schools that had been purposely established in the different parts of the district, away from big towns and cities.

Table 4. Distribution of Schools According to Distance from the Extension Center

<table>
<thead>
<tr>
<th>Distance</th>
<th>Schools Managed by</th>
<th></th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local Boards</td>
<td>Private Agencies</td>
<td>Government</td>
<td></td>
</tr>
<tr>
<td>Near Schools</td>
<td>6</td>
<td>44</td>
<td>5</td>
<td>55</td>
</tr>
<tr>
<td>Within 25 miles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distant Schools</td>
<td>11</td>
<td>24</td>
<td>1</td>
<td>36</td>
</tr>
<tr>
<td>Over 25 miles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Medium of Instruction. The language of instruction in schools has changed from English to State Languages after India obtained its independence in 1947. The State Language of Madras is Tamil. There are schools in Madras State, however, having more than one medium of instruction. The second common language of instruction is English and instruction is carried on in parallel sections in each grade.

Table 5 represents the distribution of schools according to medium of instruction. It was noted that three-fourths of the schools have Tamil as the medium of instruction, and there was one school that offered instruction in four languages. This was a
girls' school managed by the government. All the government schools that participated in this study had more than one language for instruction.

Table 5. Distribution of Schools According to Medium of Instruction

<table>
<thead>
<tr>
<th>Medium of Instruction</th>
<th>Schools Managed by</th>
<th></th>
<th></th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local Boards</td>
<td>Private Agencies</td>
<td>Government</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tamil</td>
<td>17</td>
<td>48</td>
<td>3</td>
<td>68</td>
<td>74.7</td>
</tr>
<tr>
<td>Tamil &amp; English</td>
<td>-</td>
<td>17</td>
<td>1</td>
<td>18</td>
<td>19.8</td>
</tr>
<tr>
<td>Tamil, English &amp; Telugu or Malayalam</td>
<td>-</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>4.4</td>
</tr>
<tr>
<td>Tamil, English, Telugu &amp; Malayalam</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>1.1</td>
</tr>
</tbody>
</table>

General Information Regarding the Teachers

The first question of the questionnaire was designed to provide certain personal data about the teachers who participated in this investigation. The Tables 6 to 12 show the distribution of teachers according to sex, age, marital status, professional qualifications, teaching experience, subjects taught, and teaching load. Details regarding the number of teachers instructing in boys', girls', and coeducational schools, local boards, private and government schools, and distant and near schools are given in Tables 13 to 15.
Sex. Table 6 indicates that out of the 347 teachers included in this study, male teachers formed 65.1 percent of the sample and 34.9 percent were female teachers. This implies that, in general, there are more male teachers than female teachers in the associated schools of the Extension Services.

<table>
<thead>
<tr>
<th>Sex</th>
<th>Number of Teachers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>226</td>
<td>65.1</td>
</tr>
<tr>
<td>Females</td>
<td>121</td>
<td>34.9</td>
</tr>
</tbody>
</table>

Age. The distribution of age of the teachers is represented in Table 7. Out of the total number of 347 teachers, 25, or 7.2 percent were 24 years or under. The two groups of teachers between 31 and 35 years and 25 and 30 years were equal in number, 80 or 23.1 percent, and these groups had also the largest number of teachers. The teachers between 36 and 40 years formed the second largest group. There were 38 teachers or 11.0 percent between 41 and 45 years of age; 19 or 5.5 percent from the ages 46 to 50 and 24 or 6.8 percent between 51 and 55 years of age. The last group was the smallest consisting of 16 teachers or 4.6 percent, with teachers 56 years of age and over.
Table 7. Number and Percent of Teachers According to Age

<table>
<thead>
<tr>
<th>Age Interval</th>
<th>Number of Teachers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 years &amp; under</td>
<td>25</td>
<td>7.2</td>
</tr>
<tr>
<td>25 - 30 years</td>
<td>80</td>
<td>23.1</td>
</tr>
<tr>
<td>31 - 35 years</td>
<td>80</td>
<td>23.1</td>
</tr>
<tr>
<td>36 - 40 years</td>
<td>65</td>
<td>18.7</td>
</tr>
<tr>
<td>41 - 45 years</td>
<td>38</td>
<td>11.0</td>
</tr>
<tr>
<td>46 - 50 years</td>
<td>19</td>
<td>5.5</td>
</tr>
<tr>
<td>51 - 55 years</td>
<td>24</td>
<td>6.8</td>
</tr>
<tr>
<td>56 years &amp; over</td>
<td>16</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Marital status. Data in Table 8 shows that a high percentage of teachers were married and very few widowed. It was noted that 80 percent of the single female teachers were teaching in girls' or coeducational schools under private management.

Table 8. Number and Percent of Teachers According to Marital Status

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Number of Teachers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>235</td>
<td>67.7</td>
</tr>
<tr>
<td>Single</td>
<td>101</td>
<td>29.1</td>
</tr>
<tr>
<td>Widowed</td>
<td>11</td>
<td>3.2</td>
</tr>
</tbody>
</table>

Professional qualifications. As can be seen in Table 9, teachers holding the B. T. or B. Ed. degree formed the highest
number, 242, or 69.7 percent. The Bachelor of Teaching (B. T.)
or the Bachelor of Education (B. Ed.) course is a one year graduate
teacher training program pursued after four years of college work
towards a B. A. or B. Sc. degree. The Licentiate of Teaching (L. T.)
degree was held by 27, or 7.8 percent, and L. T. degree has
now been superseded by the B. T. degree. The Secondary Grade
Teachers formed the second largest group with 61, or 17.6 percent,
and these teachers did not have a college degree but had two years
of teacher training. The Pandits are the regional language teachers
who have special degrees in language that are equal to a college
degree. Only seven teachers had Master of Education (M. Ed.)
degree and out of the seven, five were from private schools and
two from local boards. The three untrained graduate teachers were
employed in the schools managed by private agencies. The one
technically trained teacher was an instructor in a boys' school.

Table 9. Number and Percent of Teachers According to Professional Qualifications

<table>
<thead>
<tr>
<th>Professional Qualifications</th>
<th>Number of Teachers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. T. or B. Ed.</td>
<td>242</td>
<td>69.7</td>
</tr>
<tr>
<td>L. T.</td>
<td>27</td>
<td>7.8</td>
</tr>
<tr>
<td>M. Ed.</td>
<td>7</td>
<td>2.0</td>
</tr>
<tr>
<td>Secondary Grade</td>
<td>61</td>
<td>17.6</td>
</tr>
<tr>
<td>Pandit</td>
<td>6</td>
<td>1.7</td>
</tr>
<tr>
<td>Technical training</td>
<td>1</td>
<td>.3</td>
</tr>
<tr>
<td>Untrained</td>
<td>3</td>
<td>.9</td>
</tr>
</tbody>
</table>
Background Knowledge. In the first question of the questionnaire details were asked regarding the subjects taken for bachelor's degree and the optional subjects in B. T. or L. T. course. The purpose for the inquiry was to find out whether the teachers had adequate background knowledge in the optional or elective subjects that they had been specially trained to teach. Only three teachers did not satisfy this requirement. Two of them had done undergraduate work in Economics and History and of these two, one was trained to teach in Mathematics and Tamil and the other in Science and English. The third teacher, with a background knowledge in Botany and Zoology had qualified to teach Home Science. All three teachers were from private schools.

Professional Knowledge. Out of the 344 teachers who were professionally qualified, 49 teachers or 11.5 percent were not teaching the subject for which they were trained. A large majority of them, 44 or 90.0 percent, taught English, having had no special training for it during their teacher education program. Out of the remaining five, three were teaching Science and two, Social Studies, with lack of professional training in the respective subjects.

Teaching Experience. The teaching experience of participating teachers is shown in Table 10. A majority of teachers, 96 or 27.9 percent, had had 6 - 10 years of teaching experience. The second largest group consisting of 69 teachers or 19.8 percent had
teachers with 2 - 5 years of experience. Those teachers who had had 11 - 15 years came close to the second group with 64 or 18.4 percent. The smallest group had the largest number of years of teaching experience, 30 years and over.

Table 10. Number and Percent of Teachers According to Teaching Experience

<table>
<thead>
<tr>
<th>Years of Experience</th>
<th>Number of Teachers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year</td>
<td>18</td>
<td>5.2</td>
</tr>
<tr>
<td>2 - 5 years</td>
<td>69</td>
<td>19.8</td>
</tr>
<tr>
<td>6 - 10 years</td>
<td>96</td>
<td>27.9</td>
</tr>
<tr>
<td>11 - 15 years</td>
<td>64</td>
<td>18.4</td>
</tr>
<tr>
<td>16 - 20 years</td>
<td>48</td>
<td>13.8</td>
</tr>
<tr>
<td>21 - 25 years</td>
<td>22</td>
<td>6.3</td>
</tr>
<tr>
<td>26 - 30 years</td>
<td>18</td>
<td>5.2</td>
</tr>
<tr>
<td>30 years and over</td>
<td>12</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Subjects taught. The participating teachers taught the following subjects: Tamil, Telugu, Malayalam, English, Mathematics, Science, History, Geography, Citizenship Training, Physical Education, Home Science, Commerce, Secretarial courses, Engineering, Music and Dancing. Table 11 indicates the distribution of teachers according to the number of subjects they taught and the range was from one subject to five. A majority of teachers, 133, or 38.3 percent, taught two subjects. There were
116 teachers, or 33.5 percent, teaching three subjects, 50 or 14.4 percent, four subjects and 34 or 9.8 percent, one subject. Teachers who taught five subjects formed the smallest group, 14 or 4.0 percent. English was the most common subject that was taught by a large number of teachers, 237 or 68.0 percent, either as a single subject or in combination with other subjects.

Table 11. Distribution of Teachers According to the Number of Subjects Taught

<table>
<thead>
<tr>
<th>Number of Subjects</th>
<th>Number of Teachers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>One subject</td>
<td>34</td>
<td>9.8</td>
</tr>
<tr>
<td>Two subjects</td>
<td>133</td>
<td>38.3</td>
</tr>
<tr>
<td>Three subjects</td>
<td>116</td>
<td>33.5</td>
</tr>
<tr>
<td>Four subjects</td>
<td>50</td>
<td>14.4</td>
</tr>
<tr>
<td>Five subjects</td>
<td>14</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Teaching load. In a school, the total number of periods per week is 35 and the maximum load for a teacher is generally 28 periods, which consists of teaching either one subject all the time or several subjects. The maximum and minimum number of periods taught in each subject is represented in Table 12. The language teachers taught the maximum number of periods in any one language and the minimum load was in Citizenship Training, Physical Education and Home Science. Teachers instructing in diversified courses had the maximum number of periods in a
particular diversified course.

Table 12. Distribution of Maximum and Minimum Number of Periods Taught Per Week

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Number of Periods</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum</td>
<td>Minimum</td>
<td></td>
</tr>
<tr>
<td>Regional Language</td>
<td>28</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>21</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>20</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>18</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>History</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Geography</td>
<td>8</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Home Science</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Citizenship Training</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Physical Education</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Diversified Courses</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>5</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Secretarial</td>
<td>5</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Home Science</td>
<td>3</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Music &amp; Dancing</td>
<td>3</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Teachers teaching in schools managed by local boards, private agencies and government. Of the 347 teachers who participated in this study, a majority of 259 teachers, or 74.8 percent, taught in schools managed by private agencies. The teachers who taught in local board schools formed 18.4 percent and the teachers from government schools, 6.8 percent, as shown in Table 13.
Table 13. Distribution of Teachers in Schools Managed by Local Boards, Private Agencies and Government

<table>
<thead>
<tr>
<th>Management</th>
<th>Number of Teachers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private agencies</td>
<td>259</td>
<td>74.8</td>
</tr>
<tr>
<td>Local Boards</td>
<td>64</td>
<td>18.4</td>
</tr>
<tr>
<td>Government</td>
<td>24</td>
<td>6.8</td>
</tr>
</tbody>
</table>

Teachers in boys', girls' and coeducational schools. Table 14 indicates the number and percent of teachers instructing in boys', girls' and coeducational schools. Teachers in coeducational schools formed the largest group with 153, or 44.0 percent.

Table 14. Distribution of Teachers in Boys', Girls' and Coeducational Schools

<table>
<thead>
<tr>
<th>Classification</th>
<th>Teachers from Schools Managed by</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local Boards</td>
<td>Private Agencies</td>
<td>Government</td>
</tr>
<tr>
<td>Coeducational schools</td>
<td>42</td>
<td>96</td>
<td>15</td>
</tr>
<tr>
<td>Boys' Schools</td>
<td>17</td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>Girls' Schools</td>
<td>5</td>
<td>80</td>
<td>9</td>
</tr>
</tbody>
</table>
Teachers instructing in schools that are near the Extension Centers and those more than 25 miles away from the Center. The majority of teachers, 208, or 60.0 percent were teaching in schools within a radius of 25 miles to the Extension Centers as shown in Table 15.

Table 15. Distribution of Teachers According to the Distance to the Schools from the Extension Centers

<table>
<thead>
<tr>
<th>Distance</th>
<th>Teachers from Schools Managed by</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local Boards</td>
<td>Private Agencies</td>
<td>Government</td>
</tr>
<tr>
<td>Near Schools</td>
<td>27</td>
<td>162</td>
<td>19</td>
</tr>
<tr>
<td>(within 25 miles)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distant Schools</td>
<td>37</td>
<td>97</td>
<td>5</td>
</tr>
<tr>
<td>(over 25 miles)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Teachers' Participation in In-service Activities

Teachers' participation in in-service activities is analyzed from the responses received from the teachers for questions II through X of the questionnaire.

Participation in content or training courses. Question II of the questionnaire was designed to find out the kinds of in-service activities in which the teachers had participated and the difficulties experienced by them in attending these activities. Table 16
indicates the number and percent of teachers who participated in the content and training courses organized by the Extension Services.

Table 16. Number and Percent of Teachers who Participated in Content and Training Courses

<table>
<thead>
<tr>
<th>Courses</th>
<th>Number of Teachers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Schools</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Distant</td>
<td>Near</td>
</tr>
<tr>
<td>English</td>
<td>64</td>
<td>86</td>
</tr>
<tr>
<td>Science</td>
<td>45</td>
<td>68</td>
</tr>
<tr>
<td>Geography</td>
<td>21</td>
<td>55</td>
</tr>
<tr>
<td>Mathematics</td>
<td>18</td>
<td>39</td>
</tr>
<tr>
<td>History</td>
<td>15</td>
<td>39</td>
</tr>
<tr>
<td>Citizenship Training</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Tamil</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Social Studies</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Arts &amp; Crafts</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Diversified courses</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Physical Education</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

As all the teachers have attended more than one course, the percentage was calculated on the basis of the total number of responses rather than on the total number of teachers who participated in this study. The same procedure is also followed for other questions in this section.
The courses conducted on the teaching of English had been the most popular ones; these constituted the highest percent, 28.5, of the total participation. Courses on Science and Geography follow these with 19.6 percent and 14.4 percent. The least attended courses were on Physical Education, Arts and Crafts and Diversified subjects. From the tables it is evident that teachers from schools which were closer to Extension Centers participated more frequently than those that were away from the Centers.

**Participation in workshops and seminars.** Concerning workshops and seminars, data in Table 17 indicate that workshops on Audio-visual aids had the highest number of teachers, 67 or 27.2 percent, participating in them. Workshops on Evaluation and Museum Training came next with 19.9 percent and 17.5 percent. The workshops and seminars that had the least attendance were the ones conducted on preparation of Source Booklets and Co-curricular activities.

**Participation in club meetings, study circles and symposia.** A large number of teachers, 67.2 percent, had participated in club meetings, both Science and Social Studies but the number of teachers who took part in symposia was very small, only 13.0 percent. There were 41 teachers or 19.8 percent who had attended study circles. As pointed out earlier, larger number of teachers came from schools within a radius of 25 miles to the Center (see Table 18).
Table 17. Number and Percent of Teachers who Participated in Workshops and Seminars

<table>
<thead>
<tr>
<th>Workshops &amp; Seminars</th>
<th>Number of Teachers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Schools</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Distant</td>
<td>Near</td>
</tr>
<tr>
<td>Audio-visual aids</td>
<td>25</td>
<td>42</td>
</tr>
<tr>
<td>Evaluation</td>
<td>14</td>
<td>35</td>
</tr>
<tr>
<td>Museum training</td>
<td>12</td>
<td>31</td>
</tr>
<tr>
<td>Diagnostic &amp; remedial teaching</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Cumulative records</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Library science</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Guidance</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Preparation of source booklets</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Cocurricular activities</td>
<td>5</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 18. Number and Percent of Teachers who Participated in Club Meetings, Study Circles, and Symposia

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number of Teachers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Schools</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Distant</td>
<td>Near</td>
</tr>
<tr>
<td>Science club meetings</td>
<td>35</td>
<td>45</td>
</tr>
<tr>
<td>Social studies club meetings</td>
<td>24</td>
<td>35</td>
</tr>
<tr>
<td>Study circle</td>
<td>15</td>
<td>26</td>
</tr>
<tr>
<td>Symposia</td>
<td>10</td>
<td>17</td>
</tr>
</tbody>
</table>
Difficulties experienced by teachers in attending courses, seminars, workshops, etc. According to the information in Table 19, the major difficulty that handicapped the teachers in taking full advantage of the in-service activities was pressure for time. A total of 132 teachers, or 28.3 percent, gave this reason. Insufficient payment of traveling expense and daily allowances had an almost equal stand with the first reason, with 26.1 percent. For 103 teachers or 22.1 percent, the time schedule was not suitable. It was noted that some teachers preferred the holidays for the conduct of in-service activities, and others preferred them to be organized during working days.

Table 19. Number and Percent of Teachers' Responses in Regard to Difficulties Experienced by Them in Attending Courses, Seminars, Workshops, Etc.

<table>
<thead>
<tr>
<th>Difficulties experienced</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure for time</td>
<td>132</td>
<td>28.3</td>
</tr>
<tr>
<td>Insufficient allowances</td>
<td>122</td>
<td>26.1</td>
</tr>
<tr>
<td>Time schedule not suitable</td>
<td>103</td>
<td>22.1</td>
</tr>
<tr>
<td>Place of meeting away from school</td>
<td>89</td>
<td>19.1</td>
</tr>
<tr>
<td>Not relieved from classroom teaching</td>
<td>21</td>
<td>4.4</td>
</tr>
</tbody>
</table>
Regarding the payment of traveling expenses and daily allowances, there are several procedures adopted by the managements. It is very seldom that a teacher is paid in advance for the expenses he incurs for attending an in-service activity. Often the teachers incurred the expense and the managements provided reimbursement at the end of the financial year. This procedure has been adopted by many schools, mainly because of the fact that travel expenses and daily allowances were the only admissible items for support from the state governments, but there was no provision for a separate grant under this heading.

Introduction of new techniques. Question III in the questionnaire was framed as follows: What new techniques have you introduced in your classroom teaching as a result of your participation in the Extension activities? Five possibilities were given with provision of space to mention others. The teachers' responses are presented in Table 20. Using group methods for teaching classroom subjects was the most popular new technique adapted. There was a 33.5 percent response for this technique. Second in order of rank was the technique of using improvised teaching aids. The project method of teaching and new concepts of evaluation in designing class test items were the least used techniques. Some of the other new techniques used by the participating teachers were structural approach to the teaching of languages, use of graded
sums in Mathematics, library orientated teaching, and demonstration method.

Table 20. Number and Percent of Teachers Using New Techniques

<table>
<thead>
<tr>
<th>New techniques</th>
<th>Number of teachers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group methods in teaching classroom subjects</td>
<td>200</td>
<td>33.5</td>
</tr>
<tr>
<td>Use of improvised teaching aids</td>
<td>170</td>
<td>28.5</td>
</tr>
<tr>
<td>Developing reading skills</td>
<td>131</td>
<td>21.9</td>
</tr>
<tr>
<td>Project method of teaching</td>
<td>51</td>
<td>8.5</td>
</tr>
<tr>
<td>New concept of evaluation made use of in designing class test items</td>
<td>45</td>
<td>7.6</td>
</tr>
</tbody>
</table>

Newly organized activities. In addition to introducing new techniques, certain activities were organized in schools as a result of teacher participation in in-service programs. Teachers responses as to the activities they organized are given in Table 21. A majority of the teachers, 146 or 23.2 percent, had arranged class libraries. A total of 129 teachers, or 20.5 percent, had started clubs in Science, Social Studies, Mathematics, and Geography. Improvising audio-visual aids and starting student governments attracted 14.5 percent and 16.6 percent of the teachers.
The responses for organizing class museums, action research studies and experimental projects were few.

Table 21. Number and Percent of Teachers who have Organized New Activities

<table>
<thead>
<tr>
<th>New activities</th>
<th>Number of teachers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class libraries</td>
<td>146</td>
<td>23.2</td>
</tr>
<tr>
<td>Starting of clubs</td>
<td>129</td>
<td>20.5</td>
</tr>
<tr>
<td>Student government</td>
<td>105</td>
<td>16.6</td>
</tr>
<tr>
<td>Making improvised audio-visual aids</td>
<td>91</td>
<td>14.5</td>
</tr>
<tr>
<td>Class museums</td>
<td>74</td>
<td>11.7</td>
</tr>
<tr>
<td>Experimental projects</td>
<td>72</td>
<td>11.4</td>
</tr>
<tr>
<td>Action Research studies</td>
<td>13</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Factors that have hindered the teachers from starting new activities or successfully working some of the new techniques.

Teachers' responses are tabulated in Table 22. The three major factors that hindered the introduction of new activities and techniques, as given by the teachers, were rigid syllabi, too much emphasis on the final examinations and over-loaded teaching schedule. Only 6.5 percent of the teachers responded to the factors, insufficient cooperation from the heads of schools and colleagues and lack of knowledge of procedure. Hence it could be inferred that a great majority of the teachers had the cooperation
from the administrators and colleagues to introduce new activities and techniques.

Table 22. Teachers' Responses in Regard to Factors that Hindered Them from Introducing New Activities and Techniques

<table>
<thead>
<tr>
<th>Factors that hindered</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too much emphasis on the final examinations</td>
<td>211</td>
<td>34.4</td>
</tr>
<tr>
<td>Rigid syllabi</td>
<td>194</td>
<td>31.7</td>
</tr>
<tr>
<td>Over-loaded teaching schedule</td>
<td>168</td>
<td>27.4</td>
</tr>
<tr>
<td>Insufficient cooperation from heads of schools and colleagues</td>
<td>21</td>
<td>3.4</td>
</tr>
<tr>
<td>Lack of knowledge of procedure</td>
<td>19</td>
<td>3.1</td>
</tr>
</tbody>
</table>

**Improvement due to the use of new techniques.** The purpose of question IV A was to find out the areas in which teachers had noticed improvement in their pupils as a result of implementing new techniques. The teachers were requested to evaluate the improvement under three categories: much, some, and none, and their responses are shown in Table 23. Much improvement was noticed by teachers in the following areas: encouraging pupil interest, class discipline, and group work. There was some improvement mainly in group work and changes in learning attitudes. Viewing the three categories, it could be said that there
was considerable improvement in group work and encouragement of pupil interest. The least improvement was in achievement as shown by test scores.

Table 23. Teachers Responses in Regard to the Degree of Improvement Noticed in Their Pupils as a Result of Implementing New Techniques

<table>
<thead>
<tr>
<th>Areas of Improvement</th>
<th>Degree of Improvement</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Much</td>
<td>Some</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of Responses</td>
<td>Percent</td>
<td>Number of Responses</td>
<td>Percent</td>
</tr>
<tr>
<td>Encouraging pupil interest</td>
<td>140</td>
<td>26.2</td>
<td>87</td>
<td>15.8</td>
</tr>
<tr>
<td>Class discipline</td>
<td>108</td>
<td>20.2</td>
<td>74</td>
<td>13.5</td>
</tr>
<tr>
<td>Group work</td>
<td>102</td>
<td>19.2</td>
<td>113</td>
<td>20.2</td>
</tr>
<tr>
<td>Practical work</td>
<td>85</td>
<td>15.9</td>
<td>84</td>
<td>15.3</td>
</tr>
<tr>
<td>Changes in learning attitude</td>
<td>63</td>
<td>11.9</td>
<td>92</td>
<td>16.8</td>
</tr>
<tr>
<td>Achievement as shown by test score</td>
<td>36</td>
<td>6.7</td>
<td>4</td>
<td>18.2</td>
</tr>
</tbody>
</table>

Suggestions for greater progress in pupils as a result of the implementation of the new techniques. From Table 24, it was inferred that the majority of teachers were of the opinion that improved facilities in terms of size of the classroom and laboratory and quality and quantity of equipment, audio-visual aids and books,
would help towards greater progress in pupils, especially when new techniques were implemented. The two other suggestions namely, need for more help from Extension staff for adapting new techniques and more time for teacher preparation, had approximately equal number of responses from the teachers. Additional suggestions from some of the teachers for bringing about greater progress in pupils were changes in the system of promotion of pupils from one grade to another, introduction of more internal assessment, and the need for follow-up programs.

Table 24. Number and Percent of Responses in Regard to Suggestions for Greater Progress in Pupils Due to the Implementation of the New Techniques

<table>
<thead>
<tr>
<th>Suggestions</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved facilities</td>
<td>209</td>
<td>41.0</td>
</tr>
<tr>
<td>Need for more help from Extension staff for adapting new technique</td>
<td>153</td>
<td>30.0</td>
</tr>
<tr>
<td>More time for teacher preparation</td>
<td>148</td>
<td>29.0</td>
</tr>
</tbody>
</table>

Audio-visual materials. The number and percent of teachers who had borrowed and used the audio-visual materials available at the Extension Centers are indicated in Table 25. The different kinds of audio-visual materials are arranged in the table in
descending order of usage. Films and filmstrips were more
frequently used with 31.9 percent. Science and Social Studies
charts were in equal demand. The least borrowed and used audio-
visual material was the silk screen materials, forming only 2.3
percent. The table also shows the number of teachers who came
from schools that were more than 25 miles away from the Centers
and those near the Centers.

Table 25. Distribution of Teachers Who Borrowed and Used
Audio-visual Aids

<table>
<thead>
<tr>
<th>Audio-visual material</th>
<th>Teachers from</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Distant Schools</td>
<td>Near Schools</td>
<td>Total</td>
<td>Percent</td>
</tr>
<tr>
<td>Films &amp; filmstrips</td>
<td>36</td>
<td>76</td>
<td>112</td>
<td>31.9</td>
</tr>
<tr>
<td>Science charts</td>
<td>22</td>
<td>53</td>
<td>75</td>
<td>21.4</td>
</tr>
<tr>
<td>S. studies charts</td>
<td>20</td>
<td>46</td>
<td>66</td>
<td>18.8</td>
</tr>
<tr>
<td>Globes, wall maps, relief maps</td>
<td>19</td>
<td>33</td>
<td>52</td>
<td>14.8</td>
</tr>
<tr>
<td>Projects &amp; tape records</td>
<td>14</td>
<td>24</td>
<td>38</td>
<td>10.8</td>
</tr>
<tr>
<td>Silk screen materials</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Difficulties encountered in borrowing or using the audio-
visual materials. According to the teachers' responses as indicated
in Table 26, inadequate arrangements for securing the material
from the Extension Centers formed the chief difficulty that was
noted by a total of 101 responses or 36.5 percent. The other
two difficulties, lack of facilities in the school for using them and inadequate transportation facilities to obtain them from the Centers had approximately the same number of responses. Lack of cooperation from the concerned persons, mentioned as a difficulty, received the smallest number of responses, 23 or 8.3 percent. A few of the teachers, 11.0 percent, reported that their schools were adequately equipped with audio-visual materials.

Table 26. Number and Percent of Teachers' Responses in Regard to Difficulties Encountered in Borrowing and Using the Audio-visual Materials

<table>
<thead>
<tr>
<th>Difficulties</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrangements for securing them from the Extension Centers not adequate</td>
<td>101</td>
<td>36.5</td>
</tr>
<tr>
<td>Inadequate transportation facilities</td>
<td>79</td>
<td>28.5</td>
</tr>
<tr>
<td>Lack of facilities in the school for using them</td>
<td>74</td>
<td>26.7</td>
</tr>
<tr>
<td>Lack of cooperation from concerned persons</td>
<td>23</td>
<td>8.3</td>
</tr>
</tbody>
</table>

Books and Journals. Question VI of the questionnaire was designed to find out the extent to which books and journals were used by the teachers of the participating schools of the Extension Services. As shown in Table 27, books for general reference were
borrowed by 84, or 27.9 percent, of the total number of teachers who used the library of the Extension Centers. Books on methods of teaching and subject matter content were in equal demand but books on research studies were seldom borrowed. Approximately one-fifth of the total number of teachers borrowed the library books to help them in improvising teaching aids.

Table 27. Number and Percent of Teachers Who Used the Books and Journals

<table>
<thead>
<tr>
<th>Books and Journals</th>
<th>Teachers from schools managed by</th>
<th></th>
<th></th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local Boards</td>
<td>Private Agencies</td>
<td>Government</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General reference</td>
<td>8</td>
<td>72</td>
<td>4</td>
<td>84</td>
<td>27.9</td>
</tr>
<tr>
<td>Subject matter content</td>
<td>12</td>
<td>54</td>
<td>4</td>
<td>70</td>
<td>23.3</td>
</tr>
<tr>
<td>Methods of teaching</td>
<td>10</td>
<td>54</td>
<td>5</td>
<td>69</td>
<td>22.9</td>
</tr>
<tr>
<td>Improvising teaching aids</td>
<td>10</td>
<td>46</td>
<td>4</td>
<td>60</td>
<td>19.9</td>
</tr>
<tr>
<td>Research studies</td>
<td>6</td>
<td>12</td>
<td>-</td>
<td>18</td>
<td>6.0</td>
</tr>
</tbody>
</table>

It was also noted that teachers from private schools used the library facilities more than the teachers from either the schools managed by the local boards or the government. A large number
of teachers, 121, or 40.0 percent of the total, however, did not make use of the library books. Approximately half this number remarked that they were not aware of the availability of books from the Extension Centers.

**Procedures adopted for borrowing books and journals.** The teachers' response in regard to the procedures adopted for borrowing books and journals are indicated in Table 28. A majority of teachers, 66 or 35.1 percent, reported that they obtained the books by requesting them through the office of the Principals or Heads of schools. During their visits to the Extension Centers, 61 teachers or 32.4 percent, borrowed the books and another 27.7 percent of the teachers had a direct contact with the Centers for securing the books. Only seven teachers obtained them by mail and two through the library sub-centers.

<table>
<thead>
<tr>
<th>Procedures adopted</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Through the Principals or Heads of schools</td>
<td>66</td>
<td>35.1</td>
</tr>
<tr>
<td>During teachers visit</td>
<td>61</td>
<td>32.4</td>
</tr>
<tr>
<td>Direct from the Extension Centers</td>
<td>52</td>
<td>27.7</td>
</tr>
<tr>
<td>By mail</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td>Through the sub-centers</td>
<td>2</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Table 28. Number and Percent of Teachers' Responses in Regard to Procedures Adopted for Borrowing Books and Journals
Difficulties encountered in borrowing and using books. The responses of teachers as shown in Table 29 indicate that major difficulty experienced by teachers in borrowing and using books was the lack of availability of books in regional languages. The other difficulties encountered are listed in the table below.

Table 29. Number and Percent of Teachers' Responses in Regard to Difficulties Encountered in Borrowing and Using Books

<table>
<thead>
<tr>
<th>Difficulties</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of books in regional languages</td>
<td>75</td>
<td>44.1</td>
</tr>
<tr>
<td>Inadequate procedure for borrowing books</td>
<td>50</td>
<td>29.4</td>
</tr>
<tr>
<td>Inadequate supply</td>
<td>23</td>
<td>13.5</td>
</tr>
<tr>
<td>Insufficient subject-matter coverage</td>
<td>13</td>
<td>7.7</td>
</tr>
<tr>
<td>Difficulty level in content and vocabulary</td>
<td>9</td>
<td>5.3</td>
</tr>
</tbody>
</table>

School visits. The data in Table 30 represent the frequency with which the Coordinator and the training college staff visited the associated schools. They paid visits to 31 schools, or 33.2 percent, once a year. A total of 27, or 28.8 percent, did not have the opportunity of a visit from either the Coordinator or the
members of the training college. The distance from the Extension Center was not, however, a handicap in this case, since the group that never had a visit, was composed of schools that were close to the Centers as well as those that were more than 25 miles away from them. Only two schools were visited fortnightly. The number and percent of visits made once a month and once in a term or two terms are indicated in the table.

Table 30. Number and Percent of School Visits by the Coordinator and the Staff of the Training College

<table>
<thead>
<tr>
<th>School visits</th>
<th>Number of visits to Distant</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once a year</td>
<td>11</td>
<td>20</td>
<td>31</td>
</tr>
<tr>
<td>Never</td>
<td>12</td>
<td>15</td>
<td>27</td>
</tr>
<tr>
<td>Once a term</td>
<td>7</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>Once a month</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Once in two terms</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Once a fortnight</td>
<td>-</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Activities conducted by the Coordinator and the training college staff in individual schools and teachers' participation in them. Demonstration lessons were conducted in individual schools by the staff of the Extension Centers and the training colleges, more often than any other activity. Discussion groups, workshops,
and filmshows were also popular as shown in Table 31. The table also indicates the number of teachers who participated in these activities. The activities that were least organized and which had poor attendance were for gifted or slow learners and examination reforms.

Table 31. Number and Percent of Activities Conducted in Individual Schools and Number and Percent of Teachers Who Participated in These Activities

<table>
<thead>
<tr>
<th>Activities</th>
<th>Activities conducted</th>
<th>Teachers who participated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percent</td>
</tr>
<tr>
<td>Demonstration lessons</td>
<td>79</td>
<td>20.7</td>
</tr>
<tr>
<td>Discussion groups</td>
<td>70</td>
<td>18.3</td>
</tr>
<tr>
<td>Workshops</td>
<td>58</td>
<td>15.2</td>
</tr>
<tr>
<td>Filmshows</td>
<td>52</td>
<td>13.6</td>
</tr>
<tr>
<td>Training courses</td>
<td>40</td>
<td>10.5</td>
</tr>
<tr>
<td>Experimental projects</td>
<td>32</td>
<td>8.4</td>
</tr>
<tr>
<td>Study circles</td>
<td>28</td>
<td>7.3</td>
</tr>
<tr>
<td>Examination reforms</td>
<td>16</td>
<td>4.2</td>
</tr>
<tr>
<td>Programs for gifted or slow learners</td>
<td>7</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Preference for the type of in-service activity. In this question, teachers were asked to indicate their preference to any one of the following two types of in-service activity: (1) Intensive type of activity conducted in individual schools or those near by
and (2) The comprehensive and exhaustive type of activities organized at the Extension Center. A large majority of responses, 292 or 84.0 percent was for intensive type of activity. Table 32 represents the distribution of the various responses given by the teachers for the selection of either intensive or extensive type of activity. In the case of intensive type of activity the four reasons given by the teachers that secured a high percentage of the responses were exchange of ideas and experiences with other teachers, equal chance for interested teachers to participate, opportunity to attend seminars and workshops, and attempt to solve specific problems in individual schools. It was interesting to note that the first three reasons stated above ranked high for preferring also extensive type of activity. Additional reasons for selecting extensive type of activity were contact with teachers from other schools and assistance from resource persons other than training college staff.

**Publications of Extension Centers.** Concerning publications of the Extension Centers, a great majority of the teachers, 147 in number or 51.4 percent, indicated that they had read and/or made use of Reports of seminars, workshops, and courses. The second item of publication most commonly used was the Newsletter but there was a large difference in the total number of responses between Reports and Newsletters. Only 50 teachers,
Table 32. Number and Percent of Teachers' Preferences for Intensive and Extensive Types of Activities

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Intensive type</th>
<th></th>
<th>Extensive type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percent</td>
<td>number</td>
<td>percent</td>
</tr>
<tr>
<td>Exchange of ideas and experience with other teachers</td>
<td>141</td>
<td>15.2</td>
<td>29</td>
<td>16.4</td>
</tr>
<tr>
<td>Equal chance for interested teachers to participate</td>
<td>113</td>
<td>12.2</td>
<td>22</td>
<td>12.4</td>
</tr>
<tr>
<td>Opportunity to attend seminars and workshops</td>
<td>107</td>
<td>11.5</td>
<td>22</td>
<td>12.4</td>
</tr>
<tr>
<td>Attempt to solve specific problems in your school</td>
<td>105</td>
<td>11.2</td>
<td>15</td>
<td>8.6</td>
</tr>
<tr>
<td>Contact with teachers from other schools</td>
<td>93</td>
<td>10.0</td>
<td>23</td>
<td>13.0</td>
</tr>
<tr>
<td>Stimulates immediate action for the improvement of classroom instruction</td>
<td>88</td>
<td>9.5</td>
<td>10</td>
<td>5.6</td>
</tr>
<tr>
<td>More cooperation from teachers who handle one class</td>
<td>86</td>
<td>9.3</td>
<td>8</td>
<td>4.6</td>
</tr>
<tr>
<td>Time schedule more suitable</td>
<td>71</td>
<td>7.6</td>
<td>5</td>
<td>2.8</td>
</tr>
<tr>
<td>Assistance from resource persons other than training college staff</td>
<td>66</td>
<td>7.1</td>
<td>22</td>
<td>12.4</td>
</tr>
<tr>
<td>Opportunity to be away from the routine of the school</td>
<td>33</td>
<td>3.6</td>
<td>10</td>
<td>5.6</td>
</tr>
<tr>
<td>Economically advantageous for the centers to conduct activities at a central location</td>
<td>26</td>
<td>2.8</td>
<td>11</td>
<td>6.2</td>
</tr>
</tbody>
</table>
or 17.5 percent, indicated that they read the Newsletters. The least used item of publication was library catalogues. The distribution of teachers responses for the various items of publication are shown in Table 33.

Table 33. Number and Percent of Teachers' Responses Regarding the Various Items of Publication of the Extension Centers

<table>
<thead>
<tr>
<th>Publications</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reports of seminars, workshops, and courses</td>
<td>147</td>
<td>51.4</td>
</tr>
<tr>
<td>Newsletters</td>
<td>50</td>
<td>17.5</td>
</tr>
<tr>
<td>Film catalogue</td>
<td>36</td>
<td>12.6</td>
</tr>
<tr>
<td>Book reviews</td>
<td>36</td>
<td>12.6</td>
</tr>
<tr>
<td>Library catalogue</td>
<td>17</td>
<td>5.9</td>
</tr>
</tbody>
</table>

Suggestions for making the publications more useful to the teachers. The question concerning the suggestions for the improvement of publications was an open-end question. The various suggestions given by the teachers were considered and a summary of the most valuable suggestions are given below:

(1) A special committee consisting of experienced teachers to be established for each Extension Center and this committee to aid the Coordinator in bringing out useful publications based on the needs of the teachers in each area or district,
(2) Publications to include (a) articles contributed by experienced and efficient teachers, (b) articles on latest trends in education, (c) some articles to be published in regional languages and (d) more of graded material and suggestions for practical work,

(3) A workable proposition to be designed and adopted so that the publications reach individual teachers at regular intervals,

(4) Effective methods to be used for the popularization of the publications of the Extension Centers.

Many teachers expressed the opinion that items of publication should be supplied free of cost. So far the Extension Services departments have been supplying their publications to their associated schools without charge but it has not been possible for the Centers to supply more than one copy to each school. Lack of provision for duplicating the needed materials in each school has proven to be a serious handicap.

Factors that prevented the teachers from taking more advantage of the in-service activities. The ninth question in the questionnaire was as follows: Do you feel more use could be made of the in-service activities offered by the Extension Centers? If so, what are the factors that prevented you from taking more advantage of the activities? Almost all the teachers who completed this question answered the first part in the affirmative. Some of the major factors that prevented them from taking more advantage of the Extension Services activities are listed below:
(1) Time not suitable—There was a difference of opinion as to the time when the in-service activities should be conducted. Some of the teachers preferred holidays since their teaching will not be interrupted, but there were others who felt in-service activities should be conducted during weekdays.

(2) Some of the factors, which were quoted by a majority of teachers, were high teacher-pupil ratio, lack of science laboratories, reference books and audio-visual aids, too much emphasis on final examinations, covering a set syllabus, and heavy correction of students' class work and test papers.

(3) Inadequate communication between classroom teachers and the Extension and training college staff.

(4) Insufficient follow-up work of the in-service activities at the school level as well as at the Extension Centers.

(5) Extension Center or the place of meeting for in-service activities, was too far away from the school and insufficient payment of travel expenses and daily allowances.

Suggestions for the improvement of in-service activities of the Extension Centers. The last question of the questionnaire was worded thus: Please check your suggestions for making the workshops, seminars, training courses and other activities organized by the Extension Centers more useful to teachers. The responses of the teachers are tabulated in Table 34. The teachers were of the opinion that the major need was for more demonstration lessons to be arranged by the Extension Centers so that new methods and new techniques could be illustrated. They also expressed their desire to have the Extension libraries equipped with more books in regional languages. In addition they felt that the Extension
Centers should make greater use of audio-visual aids at the workshops, seminars, and training courses. Approximately 15 percent of the responses were for providing satisfactory arrangements for the payment of travel expenses and daily allowances. It was noted that there were 137 responses or 13.1 percent for more cooperation between Extension Services and State Department of Education.

Table 34. Number and Percent of Teachers' Suggestions for the Improvement of Extension Activities

<table>
<thead>
<tr>
<th>Suggestions</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>More demonstration lessons</td>
<td>203</td>
<td>19.4</td>
</tr>
<tr>
<td>Books in regional languages</td>
<td>177</td>
<td>16.9</td>
</tr>
<tr>
<td>Greater use of audio-visual aids</td>
<td>157</td>
<td>15.0</td>
</tr>
<tr>
<td>Satisfactory arrangements for the payment of allowances</td>
<td>152</td>
<td>14.5</td>
</tr>
<tr>
<td>More cooperation between Extension Services and State Department of Education</td>
<td>137</td>
<td>13.1</td>
</tr>
<tr>
<td>Increase of activities at Centers</td>
<td>99</td>
<td>9.4</td>
</tr>
<tr>
<td>Increase the intensive types of activities</td>
<td>97</td>
<td>9.3</td>
</tr>
<tr>
<td>Incentives</td>
<td>26</td>
<td>2.4</td>
</tr>
</tbody>
</table>

In the case of incentives, suggestions were for two kinds. One type of incentive was attendance requirement in in-service activities, to be fulfilled within a period of five years. Increase in salary was the second type suggested but the criteria to base
the increase were not stated.

Additional suggestions given by some of the teachers, for improving the usefulness of in-service activities are as follows: (1) Extension Centers to be kept open for an hour or so either before or after school hours, (2) More training courses to be organized mainly for secondary grade teachers who teach grades five to seven or eight.

Analysis of Administrators' Questionnaires

The Administrators' questionnaires were analyzed under the following heads:

(1) General information concerning the schools from which the administrators responded

(2) General information regarding the administrators

(3) Administrators participation in and opinion of in-service activities

General Information Concerning the Schools From Which the Administrators Responded

A total of 69 schools was represented by the administrators who completed the questionnaire. Of the 69 schools, 16 schools were managed by local boards, 33 by private agencies, and four by the government.

Table 35 shows the distribution of schools according to
boys' schools, girls' schools and coeducational schools as well as to the different types of management. The majority of the schools were boys' schools, managed by private agencies.

Table 35. Distribution of Schools According to Boys', Girls', and Coeducational and also by Management

<table>
<thead>
<tr>
<th>Classification</th>
<th>Schools managed by</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local Boards</td>
<td>Private Agencies</td>
<td>Government</td>
</tr>
<tr>
<td>Boys' schools</td>
<td>8</td>
<td>22</td>
<td>-</td>
</tr>
<tr>
<td>Coeducational schools</td>
<td>7</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Girls' schools</td>
<td>1</td>
<td>12</td>
<td>2</td>
</tr>
</tbody>
</table>

Within a radius of 25 miles of the Extension Centers there were 43 schools. The majority of these were managed by private agencies, as indicated in Table 36.

Table 36. Distribution of Schools According to Distance From the Centers

<table>
<thead>
<tr>
<th>Distance</th>
<th>Schools managed by</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local Boards</td>
<td>Private Agencies</td>
<td>Government</td>
</tr>
<tr>
<td>Near Schools (within 25 miles)</td>
<td>6</td>
<td>33</td>
<td>4</td>
</tr>
<tr>
<td>Distant Schools (over 25 miles)</td>
<td>10</td>
<td>15</td>
<td>-</td>
</tr>
</tbody>
</table>
A total of 53 schools, or 76.8 percent, had Tamil as the medium of instruction. However, there were 11 schools instructing in two languages, Tamil and English, four others were using three languages and one had four languages.

**General Information Regarding Administrators**

The administrators who completed the questionnaires were heads of secondary schools, holding the position of a Head-master, Headmistress, or Principal. A total of 69 administrators, 53 males and 16 females, participated in this study.

The distribution of the age of the administrators is shown in Table 37. Administrators between 51 and 60 years formed the highest percentage. There were only three administrators 30 years of age and below.

**Table 37. Distribution of Administrators' Age**

<table>
<thead>
<tr>
<th>Age interval</th>
<th>Number of Administrators</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>age 30 and under</td>
<td>3</td>
<td>4.4</td>
</tr>
<tr>
<td>31 - 40 years</td>
<td>17</td>
<td>24.6</td>
</tr>
<tr>
<td>41 - 50 years</td>
<td>18</td>
<td>26.1</td>
</tr>
<tr>
<td>51 - 60 years</td>
<td>31</td>
<td>44.9</td>
</tr>
</tbody>
</table>
All the administrators were professionally qualified, having either a B. T. or L. T. degree. A total of 37 administrators had B. T. degree and the rest L. T. degree. In addition, there were four who held the master's degree in education, including one administrator from a girls' school whose degree was from Boston University. The master of arts degree was held by twelve administrators.

As indicated in Table 38, the administrators who had 11 - 15 years of experience as heads of schools formed the largest group. Administrators who had experience of 6 - 10 years and 26 - 30 years were equal in number forming approximately one-third of the total.

Table 38. Distribution of Administrators According to Teaching Experience

<table>
<thead>
<tr>
<th>Years of Experience</th>
<th>Number of Administrators</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 5 years</td>
<td>17</td>
<td>24.6</td>
</tr>
<tr>
<td>6 - 10 years</td>
<td>10</td>
<td>14.5</td>
</tr>
<tr>
<td>11 - 15 years</td>
<td>12</td>
<td>17.4</td>
</tr>
<tr>
<td>16 - 20 years</td>
<td>8</td>
<td>11.6</td>
</tr>
<tr>
<td>21 - 25 years</td>
<td>9</td>
<td>13.0</td>
</tr>
<tr>
<td>26 - 30 years</td>
<td>10</td>
<td>14.5</td>
</tr>
<tr>
<td>31 - 35 years</td>
<td>3</td>
<td>4.4</td>
</tr>
</tbody>
</table>
With the exception of six administrators who taught two subjects, all the others were instructing one subject. It was noted that out of these 63 administrators, 72.5 percent were teaching English, language, and literature.

Administrators' Participation In and Opinion Of In-service Activities

The administrators' participation and their opinions concerning in-service activities are analyzed from their responses for questions II through XI of the questionnaire.

Participation in the major services of the Extension Centers.

A list of the major services offered by the Extension Services was given in the second question and the administrators were asked to check the ones they took advantage of. The administrators' responses in regard to the services they utilized, are given in Table 39. A majority of the administrators, 55 or 26.7 percent, took advantage of the training courses, workshops, and seminars. Conferences of heads of schools came next in the list with 35 responses or 16.9 percent, and audio-visual services and library services received almost the same response. It is to be noted that administrators did not make much use of the publications, as this was last in the list with 6 responses or 2.9 percent.
Table 39. Distribution of Administrators' Responses Concerning the Advantages Derived from the Major Services of the Extension Centers

<table>
<thead>
<tr>
<th>Major Services</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training courses, workshops and seminars</td>
<td>55</td>
<td>26.7</td>
</tr>
<tr>
<td>Conference of heads of schools</td>
<td>35</td>
<td>16.9</td>
</tr>
<tr>
<td>Audio-visual service</td>
<td>23</td>
<td>11.2</td>
</tr>
<tr>
<td>Library service</td>
<td>22</td>
<td>10.7</td>
</tr>
<tr>
<td>Intensive work</td>
<td>20</td>
<td>9.7</td>
</tr>
<tr>
<td>Starting of clubs</td>
<td>16</td>
<td>7.8</td>
</tr>
<tr>
<td>Organization of experimental projects</td>
<td>15</td>
<td>7.3</td>
</tr>
<tr>
<td>Directional help from the Coordinator and the training college staff</td>
<td>14</td>
<td>6.8</td>
</tr>
<tr>
<td>Publication</td>
<td>6</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Advantages derived from the services of the Extension Centers. As indicated in Table 40, the administrators were of the opinion that teacher growth in terms of subject-matter competency, new methods and techniques, and increased interest were the most valuable advantages derived because of the in-service activities. The investigator considered this as one of the most revealing
factors in the analysis of the in-service activities. The other advantages are indicated in Table 40, arranged in a descending order in regard to the total number who responded.

Table 40. Distribution of Administrators' Responses in Regard to the Advantages Derived from the Services of Extension Centers

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher growth in terms of subject matter competency, new methods and increased interest</td>
<td>46</td>
<td>27.8</td>
</tr>
<tr>
<td>Improvement in practical work</td>
<td>34</td>
<td>20.6</td>
</tr>
<tr>
<td>Change in pupils attitude for learning</td>
<td>28</td>
<td>17.0</td>
</tr>
<tr>
<td>Better relationship between teacher and teacher and teacher and pupil</td>
<td>26</td>
<td>15.8</td>
</tr>
<tr>
<td>School and class discipline</td>
<td>22</td>
<td>13.3</td>
</tr>
<tr>
<td>Achievement as shown by test scores</td>
<td>9</td>
<td>5.5</td>
</tr>
</tbody>
</table>

Subjects in which more training courses, workshops, and seminars were desired. The administrators' desire for more training courses, workshops, and seminars are tabulated subject-wise in Table 41. A majority of the administrators, 20 or 28.4 percent, felt the need for workshops or seminars in Science.
Training courses in the teaching of English were also requested by 15, or 21.4 percent. Mathematics and Social Science came next in the list. Training courses or workshops for the teaching of Geography and Tamil were desired only by 7 or 10.0 percent and 3 or 4.3 percent respectively.

Table 41. Distribution of Subjects in Which More Training Courses, Workshops, and Seminars were Desired

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>20</td>
<td>28.5</td>
</tr>
<tr>
<td>English</td>
<td>15</td>
<td>21.4</td>
</tr>
<tr>
<td>Mathematics</td>
<td>13</td>
<td>18.6</td>
</tr>
<tr>
<td>Social Studies</td>
<td>12</td>
<td>17.2</td>
</tr>
<tr>
<td>Geography</td>
<td>7</td>
<td>10.0</td>
</tr>
<tr>
<td>Tamil</td>
<td>3</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Experimental Projects. Of the 69 administrators who participated in this study, 35 or 50.4 percent remarked that experimental projects of one kind or another were carried out in their schools. They also stated that the staff of the Extension Centers and training colleges were helpful in planning, organizing and guiding the projects. A list of the names of the projects carried out in some of the schools is given below.
1. A study of the relative effectiveness of group methods in the teaching of English and Social Studies

2. Diagnostic tests in Mathematics

3. Art and architecture of India

4. A study of supply and distribution of food and food products in Madras city

5. Improving the teaching of English, particularly in spelling and handwriting

6. How we are governed - Social Studies Project

7. Group method in the teaching of English composition

8. Unit method of teaching Science

9. Library centered method of teaching specific units in English and Social Studies

10. Teaching without textbook

11. Better Bulletin Board

12. Improving handwriting

13. Diagnostic and remedial work in English

14. Teaching of Science through arts and crafts

15. Improving teacher planning

16. Improving instruction in Geography through the building of a Geography Museum

Club activities. All the administrators pointed out the fact that club activities have become a regular feature of their schools. However, special emphasis has been given to Science club activities mainly because of the interest taken by the Extension
Services in promoting Science club activities and the Science Fairs organized annually.

Study Circles. Only 12 administrators, or 17.3 percent, reported that study circles in one or more subject areas were organized in their schools.

Participation in Science Fairs and benefits derived therefrom. As regards participation in Science Fairs, there were only five administrators whose schools did not participate in Science Fairs. Administrators' responses concerning the benefits derived as a result of participating in the Fairs are indicated in Table 42. The chief benefits obtained through Science Fairs were in terms of discovering Science talents among pupils and arousing interest in General Science as a hobby.

Table 42. Distribution of Administrators' Responses Concerning the Benefits Derived from Participating in Science Fairs

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discovering Science talents among pupils</td>
<td>37</td>
<td>27.2</td>
</tr>
<tr>
<td>Arousing interest in General Science as a hobby</td>
<td>37</td>
<td>27.2</td>
</tr>
<tr>
<td>Encouraging cooperative planning of work and study</td>
<td>23</td>
<td>16.9</td>
</tr>
<tr>
<td>Recognizing and motivating Science talents</td>
<td>21</td>
<td>15.4</td>
</tr>
<tr>
<td>Exchanging information and ideas with members of the Science clubs in other schools</td>
<td>18</td>
<td>13.3</td>
</tr>
</tbody>
</table>
Methods adopted for borrowing books, educational journals, and audio-visual aids. The different methods which the administrators generally used for borrowing books, educational journals and audio-visual aids from the Extension Centers for the use of the teachers were listed and the administrators were requested to check from this list the methods they used. The Table 43 represents the distribution of administrators responses concerning the procedures adopted in borrowing books, journals, and teaching aids. Data indicate that a majority of the administrators, 26 or 33.3 percent, borrowed books and aids by making a request to the Coordinators, depending on the felt needs of their teachers. The procedure of teachers obtaining the books and other aids while they visited the Centers for attending in-service activities, received the second highest percentage of responses from the administrators. It was noted that only nine administrators, or 11.6 percent, said that the Coordinators, during their visits to schools, found the needs of the teachers in regard to books and audio-visual aids. A total of 12 administrators remarked that their schools had sufficient number of books and audio-visual aids and there was no need to borrow them from the Extension Centers.

Difficulties encountered in borrowing and using books.

According to the administrators' responses as indicated in Table 44, lack of proper facilities for borrowing books was the chief
difficulty, mentioned by 23 administrators, or 35.9 percent. "Proper facilities" implies the availability of a helper to deliver the books and aids, from the Center or a person from the schools to pick them up at the Center. Sometimes, the Extension jeep or van is used for this purpose. The third difficulty mentioned in the table is inadequate supply and this results mainly because of the constant demand from several schools for the same books. It was noted that the last item, difficulty level in terms of content and vocabulary, received the least number of responses 6 or 9.5 percent.

Table 43. Distribution of Administrators' Responses Concerning the Methods Used for Borrowing Books, Journals, and Audio-visual Aids

<table>
<thead>
<tr>
<th>Methods</th>
<th>Number of responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on the needs of the teachers' request made to the coordinator by the heads of schools</td>
<td>8 18 26</td>
<td>33.3</td>
</tr>
<tr>
<td>Teachers make requests when they visit the center for attending seminar courses</td>
<td>8 15 23</td>
<td>29.5</td>
</tr>
<tr>
<td>Individual teachers send in their requests to the coordinator</td>
<td>2 8 10</td>
<td>12.8</td>
</tr>
<tr>
<td>Coordinator sends periodically selected books and aids</td>
<td>2 8 10</td>
<td>12.8</td>
</tr>
<tr>
<td>Coordinator finds the needs of the teachers during school visits</td>
<td>2 7 9</td>
<td>11.6</td>
</tr>
</tbody>
</table>
Table 44. Distribution of Administrators' Responses Concerning the Difficulties Encountered in Borrowing and Using Books

<table>
<thead>
<tr>
<th>Difficulties</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of proper facilities for borrowing books</td>
<td>23</td>
<td>35.9</td>
</tr>
<tr>
<td>Lack of books in regional languages</td>
<td>15</td>
<td>23.4</td>
</tr>
<tr>
<td>Inadequate supply</td>
<td>13</td>
<td>20.3</td>
</tr>
<tr>
<td>Insufficient subject matter coverage</td>
<td>7</td>
<td>10.9</td>
</tr>
<tr>
<td>Difficulty level in terms of content and vocabulary</td>
<td>6</td>
<td>9.5</td>
</tr>
</tbody>
</table>

Difficulties in borrowing and using the audio-visual materials.
The responses of the administrators concerning the difficulties encountered in borrowing and using the audio-visual materials, as shown in Table 45, indicate that the major difficulty was the lack of knowledge of the available materials at the Extension Centers. The other difficulties experienced by the administrators are listed in the table.

Assessment of the publications of the Extension Centers.
The question VI A of the questionnaire was worded thus: Are you familiar with the publication of the Extension Center mentioned below. If you are, please give your assessment based on a two-point scale; A, denoting most valuable and B, least valuable. A total number of 19 administrators, or 27.5 percent, replied that
they were not familiar with the publications of the Extension
Centers. Of the remaining 50 administrators, a majority of 34,
or 56.7 percent, remarked that Reports of the seminars, work-
shops, training courses and science fairs were the most valuable
items of the publications. The administrators' responses con-
cerning other items of publication are given in Table 46.

Table 45. Distribution of Administrators' Responses Concerning
the Difficulties Encountered in Borrowing and Using
Audio-visual Aids

<table>
<thead>
<tr>
<th>Difficulties</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of knowledge of the available materials</td>
<td>21</td>
<td>32.3</td>
</tr>
<tr>
<td>Inadequate transportation facilities</td>
<td>16</td>
<td>24.6</td>
</tr>
<tr>
<td>Insufficient interest on the part of the teachers</td>
<td>16</td>
<td>24.6</td>
</tr>
<tr>
<td>Lack of facilities in the school for using them</td>
<td>12</td>
<td>18.5</td>
</tr>
</tbody>
</table>

In regard to the least valuable items of publication, only ten
administrators responded to the question and library and film
catalogues were considered by them as the least valuable items.

The administrators considered Reports of seminars, work-
shops, and training courses as the most valuable publication for
the following reasons:
(1) Teachers who were not able to attend the activities were greatly benefited by the reports.

(2) Reports served as incentives for follow-up activities.

(3) Printed material has a continued and lasting appeal.

(4) Reports help in the exchange of ideas and knowledge with the other Extension Centers in the country.

Table 46. Distribution of Administrators' Responses Concerning Their Opinion in Regard to the Most Valuable and Least Valuable Publication

<table>
<thead>
<tr>
<th>Name of the publication</th>
<th>Most valuable</th>
<th>Least valuable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Responses</td>
<td>Percent</td>
</tr>
<tr>
<td>Reports of seminars, courses and workshops</td>
<td>34</td>
<td>56.7</td>
</tr>
<tr>
<td>Newsletters</td>
<td>11</td>
<td>18.3</td>
</tr>
<tr>
<td>Book reviews</td>
<td>7</td>
<td>11.7</td>
</tr>
<tr>
<td>Film catalogues</td>
<td>5</td>
<td>8.3</td>
</tr>
<tr>
<td>Library catalogues</td>
<td>3</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Suggestions for making the publications of the Extension Centers more valuable and useful to the teachers. A summary of the various suggestions given by the administrators concerning the publications are as follows:

(1) A list of the publications of each Extension Center to be made available for the administrators and teachers of the associated schools. Further this list to be brought up to date every three months,
(2) Reports of the various kinds of experimental projects conducted in the different schools to be published. If time and finance did not permit the publication of all these, the important and valuable projects to be printed,

(3) Some items of publication to be in the regional language,

(4) Administrators to draw the teachers' attention to the publications by referring to them in teachers' association meetings and subject teachers' meetings,

(5) An editorial board composed of selected, experienced teachers to be formed in order to assist the Coordinators to bring out publications to suit the needs of the teachers.

Follow-up activities for continuing the advantages derived from the Extension Services. Out of a total of 69 administrators, only 27 or 39.1 percent remarked that they had a plan of follow-up activities for continuing the advantages derived from the Extension Services. Some of the follow-up activities carried on by the administrations are given below:

(1) The teachers who attended the in-service activities to give a report of the activities at the teachers' association meetings or subject teachers' meetings. Later, interested teachers to discuss them in smaller groups,

(2) Carrying out the new techniques or methods suggested at the seminars or workshops in the classrooms,

(3) Teachers from neighboring schools getting together to share the experiences gained through the participation in in-service activities,

(4) Using the information and practical knowledge obtained at the training courses and workshops, to improvise teaching aids and to make inexpensive charts and maps.
Usefulness of the periodical visits of the Coordinator and the staff of the training college. Question VIII in the questionnaire was designed to find out if the visits of the Coordinators and the staff of the training colleges were useful and, if useful, the reasons for the same. A total of 12 administrators or 15.4 percent did not answer since the Coordinator or the training college staff had never visited their schools. The other administrators gave reasons for considering the visits of the Coordinators and the training college staff useful and these are tabulated in Table 47. A majority of the responses, 30 or 34.1 percent indicated that visits served as incentives for improving instructional methods. It was noted that the reason least checked was that the visits were useful in identifying and solving problems in a classroom situation.

Preference for the type of in-service activity. In question IX, the administrators were asked if they preferred the intensive type of activity conducted in individual schools or in schools nearby as compared to the extensive type organized at the Extension Center. A total of 60 administrators or 87.1 percent preferred the intensive type of activity and the rest 9 or 12.9 percent opted for extensive type. The administrators responses concerning the reasons for selecting any one type of activity, are indicated in Table 48.
Table 47. Distribution of Administrators' Responses Concerning the Usefulness of the Visits of the Extension and Training College Staff

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>As incentive for improving instructional methods</td>
<td>30</td>
<td>34.1</td>
</tr>
<tr>
<td>Teachers profit from demonstration lessons given by specialists</td>
<td>25</td>
<td>28.4</td>
</tr>
<tr>
<td>Help and guidance to individual teachers</td>
<td>22</td>
<td>25.0</td>
</tr>
<tr>
<td>Problems are more easily identified and solved in a classroom situation</td>
<td>11</td>
<td>12.5</td>
</tr>
</tbody>
</table>

Table 48. Distribution of Administrators' Responses Concerning Preference for Intensive and Extensive Type of Activities

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Intensive type</th>
<th></th>
<th>Extensive type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percent</td>
<td>number</td>
<td>percent</td>
</tr>
<tr>
<td>Equal chance for interested teachers to participate</td>
<td>28</td>
<td>23.3</td>
<td>5</td>
<td>41.7</td>
</tr>
<tr>
<td>Attempt to solve specific problems of each school</td>
<td>26</td>
<td>21.7</td>
<td>1</td>
<td>8.3</td>
</tr>
<tr>
<td>More cooperation among teachers who handle one class</td>
<td>26</td>
<td>21.7</td>
<td>2</td>
<td>16.7</td>
</tr>
<tr>
<td>Stimulates immediate action for the improvement of classroom instruction</td>
<td>24</td>
<td>20.0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Time schedule more suitable</td>
<td>16</td>
<td>13.3</td>
<td>4</td>
<td>33.3</td>
</tr>
</tbody>
</table>
Factors that prevented the administrators from taking more advantage of the Extension Services. As indicated in Table 49, the major factor that prevented the teachers from taking advantage of the in-service activities was pressure for time. The two factors that followed the above, in terms of total number of responses were inadequate arrangement for the payment of allowances and the examination-oriented syllabus. It was noted that lack of interest on the part of the teachers was found as the factor that hindered least as it had only 16 responses for 13.6 percent.

Table 49. Distribution of Administrators' Responses Concerning Factors that Prevented Them from Taking More Advantage of the In-service Activities

<table>
<thead>
<tr>
<th>Factors</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure for time</td>
<td>40</td>
<td>33.9</td>
</tr>
<tr>
<td>Inadequate arrangement for the payment of allowances</td>
<td>33</td>
<td>27.9</td>
</tr>
<tr>
<td>Examination-oriented syllabus</td>
<td>29</td>
<td>24.6</td>
</tr>
<tr>
<td>Lack of interest on the part of the teachers</td>
<td>16</td>
<td>13.6</td>
</tr>
</tbody>
</table>

Suggestions for making the workshops, seminars, training courses and other activities organized by the Extension Services more useful to the teachers. The administrators' responses to
this last question are represented in Table 50. The majority of the responses, 43 or 18.9 percent were for providing more demonstration lessons. The next two suggestions in the list, namely, arranging for adequate travel expenses and daily allowances and providing books in regional languages, had approximately the same percentage of responses. The administrators responses, concerning the provision of some kind of incentives for teachers for their participation in in-service activities was the smallest in number, 8 or 3.5 percent.

Table 50. Distribution of Administrators’ Responses in Regard to Making the In-service Activities More Useful to Teachers

<table>
<thead>
<tr>
<th>Suggestions</th>
<th>Number of Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>More demonstration lessons</td>
<td>43</td>
<td>18.9</td>
</tr>
<tr>
<td>Satisfactory arrangement for allowances</td>
<td>39</td>
<td>17.2</td>
</tr>
<tr>
<td>Books in regional languages</td>
<td>37</td>
<td>16.3</td>
</tr>
<tr>
<td>Greater use of audio-visual materials</td>
<td>32</td>
<td>14.1</td>
</tr>
<tr>
<td>Increase the intensive type of activities</td>
<td>27</td>
<td>11.9</td>
</tr>
<tr>
<td>More cooperation between Extension Services and State Department of Education</td>
<td>26</td>
<td>11.5</td>
</tr>
<tr>
<td>Increase the extensive type of activity</td>
<td>15</td>
<td>6.6</td>
</tr>
<tr>
<td>Incentives</td>
<td>8</td>
<td>3.5</td>
</tr>
</tbody>
</table>
Interview of an Educational Officer from the Department of Education. On behalf of the investigator, one of the District Educational Officers, who is an administrator in the Department of Education, Madras Government, was interviewed by a prominent educator in Madras city. The essence of the interview is given below.

Regarding training courses, workshops and seminars, the Educational officer remarked that a number of schools have taken advantage of these activities and these have to a very great extent helped teacher growth in terms of subject matter competency, knowledge of new methods and techniques and increased desire for professional growth. Further, there is a marked improvement in classroom discipline and pupils' attitude for learning. Pupils are taking a lively interest in the new methods used and the simple inexpensive teaching aids improvised by the teachers.

The Educational Officer pointed out that the Extension Centers have given an impetus to Science Club activities as well as to the Science Fairs, conducted annually. As a result, there has been an amazing discovery of pupils' talents in science.

Concerning audio-visual material, the officer was of the opinion that almost all the schools make use of the audio-visual services of the Extension Centers even though transportation facilities are inadequate. However, he was disappointed that the
schools are neglecting the library services. He expressed the desire for starting and popularizing manuscript journals, consisting of articles contributed mainly by teachers and pupils and these to be attempted in every school. These journals may also be exchanged, borrowed from or lent to neighboring schools.

The Officer remarked that the Coordinators, on an average, pay only one visit to a school in a year. Schools near the Centers are paid more visits. Concerning the intensive and extensive type of work, he preferred the intensive type of work and hoped that more of it would be organized in the near future.

His suggestions for the improvement of in-service activities are as follows:

(1) More courses to be organized in Science, Geography, and English,

(2) Extension library to provide more books on regional languages,

(3) Study circles to be encouraged in schools,

(4) Managements of private schools to increase their budget allotment for library books and audio-visual materials.

The analysis of the data provided by the two sets of questionnaires and the report of the interview with an Educational Officer have given valuable information concerning the participation of teachers and administrators in the Extension In-service program. These have also given worthwhile suggestions for further growth.
and development of the program. A summary of the findings as well as the major suggestions and recommendations are given in the last chapter.
CHAPTER VII

SUMMARY OF FINDINGS AND RECOMMENDATIONS

In this dissertation, an attempt was made to analyze and evaluate the in-service teacher education program in India. For the past 100 years or so, the various all-India commissions and committees that were appointed to study and improve the existing educational system, have stressed the need for and the importance of organized in-service education in the country. Up to 1954, the in-service activities were the concern of individual schools, teachers' associations or the Department of Education in some states. The in-service activities have also been mostly in the form of refresher courses arranged at irregular intervals, generally during the summer vacation. It was in 1955 that the Ministry of Education established the Department of Extension Services, which is an all-India program for in-service education of teachers in secondary schools.

The all-India program of in-service education is carried out by 69 Extension Centers and 24 Extension Units that are attached to the training colleges. These Centers and Units have developed a program of organizing and conducting training courses, seminars, and workshops and encouraging teachers to begin and
develop club activities, study circles, school museums and projects on an experimental basis. In addition they provide audio-visual services and library services and bring out publications periodically. All these activities are conducted in individual schools or schools nearby as well as at the Extension Centers. The Extension program is a continuous program that is provided for the benefit of teachers all the year round, with the main purpose of improving teacher competency and providing professional growth.

**Major Findings of the Study**

The acceptance of the Extension Services in secondary schools has been analyzed from the data obtained from the two sets of questionnaires that were completed by 347 teachers and 69 administrators, from 91 schools. A summary of the findings of this study is given in the following 14 points:

1. The teachers and administrators have similar characteristics (Table 51, page 142). The difference however is mainly in the age interval and teaching experience of the two groups. The majority of the teachers are between 25 to 35 years of age and the administrators are from 51 - 60 years. Concerning teaching experiences, teachers have 6 - 10 years experience but the administrators have 0 - 5 years as heads of schools, over and above their experience as a teacher. Administrators have an average of 10 years of teaching experience.

2. Administrators are of the opinion that the most valuable advantage derived from the in-service activities of the
Extension Centers is teacher growth in terms of subject matter competency, new methods and techniques, and increased professional interest.

(3) Administrators take more advantage of training courses, seminars, and workshops than any other program offered by the Extension Centers.

(4) A majority of the teachers have participated in training courses on the teaching of English and Science and workshops on the preparation and use of audio-visual aids.

(5) Meetings organized for the establishment and functioning of clubs in schools have been well attended. Science club meetings have a priority over Social Studies club meetings.

(6) The most commonly used new techniques are the group method in the teaching of classroom subjects, and improvising and using inexpensive teaching aids. As a result of using these new techniques, teachers reported improvement in class discipline and pupils interest. The new activities introduced by a majority of the teachers are maintaining class libraries and starting of clubs.

(7) Most frequently reported factors that hinder the teachers from introducing or successfully working some of the new techniques and methods are as follows: pressure for time, insufficient provision for travel expenses and daily allowances to attend in-service activities, too much emphasis on final examination, and a rigid syllabus to follow the whole year round.

(8) A majority of the teachers and administrators have participated in Science Fairs which helped a great deal in discovering Science talents among pupils.

(9) Approximately 50 percent of the teachers stated that they are not aware of the availability of the books and journals at the Extension Centers. Those who borrow books, use them for general reference and they obtain them by making requests to the Extension Centers, through their Headmasters or Headmistresses.
(10) Books and journals have been relatively little used by teachers because of the insufficient supply of books written in regional languages and the inadequate procedures adopted for borrowing them.

(11) The audio-visual aids, films, filmstrips and charts in Science and Social Studies are in high demand but the arrangements for securing any of the aids from the Centers are not adequate.

(12) Administrators and teachers indicated that the Coordinators and/or the staff of the training colleges, on an average, visit the schools only once a year. However, the schools near the Centers are paid more visits.

(13) Administrators and teachers reported preference for intensive type of activities conducted in individual schools or near by schools to the extensive type organized at the Centers.

(14) The most common suggestions given by the teachers and administrators for improving the in-service activities are (1) to organize more demonstration lessons, (2) to provide more books written in regional languages and, (3) to make satisfactory arrangements for the payment of travel expenses and daily allowances.
Table 51. General Information Concerning Teachers and Administrators in Terms of the Majority of the Group

<table>
<thead>
<tr>
<th>General information</th>
<th>Majority of teachers</th>
<th>Majority of administrators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>males</td>
<td>males</td>
</tr>
<tr>
<td>Age</td>
<td>25 - 35 years</td>
<td>51 - 60 years</td>
</tr>
<tr>
<td>Qualifications</td>
<td>B. T.</td>
<td>B. T.</td>
</tr>
<tr>
<td>Teaching experience</td>
<td>6 - 10 years</td>
<td>0 - 5 years</td>
</tr>
<tr>
<td>Subjects taught</td>
<td>two subjects</td>
<td>one subject</td>
</tr>
<tr>
<td>Boys', girls' or coeducational schools</td>
<td>coeducational</td>
<td>boys'</td>
</tr>
<tr>
<td>Managed by local boards, private agencies, or government</td>
<td>private agencies</td>
<td>private agencies</td>
</tr>
<tr>
<td>Within or more than 25 miles from the Centers</td>
<td>within 25 miles</td>
<td>within 25 miles</td>
</tr>
<tr>
<td>Medium of instruction</td>
<td>one language (Tamil)</td>
<td>one language (Tamil)</td>
</tr>
</tbody>
</table>

**Recommendations**

On the basis of careful analysis and study of the 416 completed questionnaires combined with the long experience of the investigator in in-service training, the following recommendations are submitted for the improvement and growth of the Extension Services:
(1) Additional training courses or seminars should be organized on the teaching of Science, English, Mathematics and Social Studies,

(2) More attention should be given to informing teachers in the associated schools of the availability of the library books at the Centers,

(3) Library sub-Centers should be established in some selected schools that are distant from the Centers,

(4) Increased efforts should be taken to secure for the Extension library, books written in or translated into regional languages,

(5) Workable propositions should be designed and adopted for borrowing and transporting library books and audio-visual materials to schools,

(6) Effective methods should be used for the popularization of the publications of the Extension Centers,

(7) A special committee consisting of experienced teachers should be established at each Extension Center, this committee aiding the Coordinator in bringing out useful publications based on the needs of the teachers in each area,

(8) The Coordinator and the staff of the training college should visit schools more often so that they can study, on the spot, the problems and difficulties teachers face and thus help and guide them,

(9) Increased emphasis should be made in providing the intensive type of activities organized in individual school or centrally situated schools in the area,

(10) Arrangements should be made for giving more demonstration lessons by the Coordinator or the training college staff in individual schools,

(11) Guidance should be provided to teachers, at the time of the conduct of in-service activities and later on, for adopting well-planned follow-up activities,

(12) Extension Centers should be kept open for an hour or so either before or after school hours,
Special efforts should be made in seeking the cooperation of the Department of Education of the State Government in arriving at a satisfactory arrangement for the payment of travel expenses and daily allowances.

Administrators and the Extension Services should work out the most convenient time for the conduct of training courses, seminars, and workshops.

The Directorate of Extension Programs for Secondary Education should provide funds for the establishment of Extension Centers or Units in areas where the present Centers serve more than 100 associated schools.

In summary, this study confirms that the all-India program of in-service teacher education is fulfilling one of the important and urgent needs of the present educational system, namely that of increasing teacher competency and professional growth of teachers and administrators through its multifaceted activities and services. Further, the investigation has served as a basis for the appraisal of the activities of the all-India in-service program as well as providing suggestions and recommendations for its further improvement.
BIBLIOGRAPHY


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APPENDICES
APPENDIX I a

NAMES OF EXTENSION SERVICES CENTERS

North Western Zone

Punjab

1. Government Training College, Jullundur
2. Government Post-Graduate Basic Training College, Chandigarh
3. State College of Education, Patiala
4. Dev Samaj College for Women, Ferozepur
5. College of Education, Kurukshetra
6. Government Post-Graduate Basic Training College, Dharamsala

Jammu and Kashmir

7. Teachers' Training College, Srinagar
8. Teachers' College, Jammu

Rajasthan

9. Vidaya Bhawan G. S. Teachers College, Udaipur
10. Government Teachers' Training College, Bikaner
11. Government Teachers' Training College, Ajmer
Delhi

12. Central Institute of Education, Delhi
13. Teachers College, Jamia Millia Islamia, New Delhi

Northern Zone

Uttar Pradesh

14. Government Central Pedagogical Institute, Allahabad
15. Government Constructive Training College, Lucknow
16. Department of Education, Muslim University, Aligarh
17. Balwant Rajput college of Education, Agra
18. Isabella Thoburn College, Lucknow
19. Meerut College, Meerut
20. Teachers Training College, Benaras Hindu University, Varanasi
21. Government Training College for Women, Allahabad

Madhya Pradesh

22. Prantiya Shikshan Mahavidyalaya, Jabalpur
23. Government Post Graduate Basic Training College, Dewas
24. Government Post Graduate Basic Training College, Bhopal
25. Government Post Graduate Basic Training College, Raipur
26. Government Post Graduate Basic Training College, Rewa
27. Government Post Graduate Basic Training College, Khandwa

Eastern Zone

West Bengal

28. David Hare Training College, Calcutta
29. Institute of Education for women, Alipore, Calcutta
30. Vinaya Bhavana, Visva-Bharati, Santiniketan
31. Government Training College, Hooghly
32. Kalyani B. T. College, Kalyani

Bihar

33. Patna Training College, Patna
34. Teachers' Training College, Turki
35. Teachers' Training College, Ranchi
36. Teachers' Training College, Bhagalpur

Assam

37. Department of Education, Gauhati University, Gauhati
38. Post-Graduate Training College, Jorhat

Orissa

39. Radhanath Training College, Cuttack
Central Zone

Gujarat

40. Faculty of Education and Psychology, M. S. University, Baroda
41. A. G. Teachers' College, Ahmedabad
42. R. G. Teachers' College, Porebunder
43. Secondary Teachers' Training College, Sardar Vallabhbhai Vidyapeeth Vallbh, Vidyanagar

Maharashtra

44. Secondary Training College, Bombay
45. Shri Maharani Tarabai Teachers' College, Kolhapur
46. Tilak College of Education, Poona
47. University Training College, Nagpur

Andhra Pradesh

48. Government Training College, Kurnool
49. College of Education, Osmania University, Hyderabad
50. Government Training College, Rajamundry
51. Government Training College, Warangal
52. Government Training College, Nellore
Southern Zone

Madras

53. Teachers' College, Saidapet, Madras


55. Dr. Alagappa Chettiar Training College, Karaikudi

56. Meston Training College, Madras

57. Faculty of Education, Annamalai University, Chidambaram

58. Thiagarajar College of Presceptors, Madurai

59. St. Christopher's Training College, Madras

Mysore

60. St. Ann's Training College, Mangalore

61. Secondary Teachers' College, Belgaum

62. Rashtreeya Vidyalaya Teachers' College, Bangalore

63. Teachers' College, Mysore

64. Government B. Ed. College, Gulbarga

Kerala

65. Government Training College, Trivandram

66. Government Training College, Calicut

67. Government Training College, Trichur
68. St. Thomas Training College, Palai

69. N. S. S. Training College, Ottapalam
APPENDIX I b

EXTENSION UNITS

1. Government Training College, Faridkot, Punjab

2. Government Training College for Women, Simla, Punjab

3. Gandhi Vidya Mandir, Basic Teacher Training College, Sardarshahr, Rajasthan


5. Government P. G. B. T. College, Bilaspur, Madhya Pradesh

6. Government P. G. B. T. College, Sagar, Madhya Pradesh

7. Andhra Christian College, Guntur, Andhra Pradesh

8. Government M. R. College, Vizianagaram, Andhra Pradesh

9. Graduate Basic Training Centre, Rajpipla Dist. Broach, Gujarat

10. Sarvajanik College of Education, Athwa Lines, Surat, Gujarat

11. N. S. S. Training College, Changanacherry, Kerala


13. Government Training College, Tellicherry, Kerala

14. Government Training College, Mangalore, Mysore

15. M. E. S. Teachers' College, Mallaswaram, Bangalore - 3, Mysore

16. Tilakdhari College, Jaunpur, Uttar Pradesh

17. D. A. V. College, Kanpur, Uttar Pradesh
18. K. R. Training College, Mathura, Uttar Pradesh

19. Sevayatan B. T. College, Sevayatan, Midnapur, Viajhargram, West Bengal

20. A. C. Training College, Jalpaiguri, West Bengal

21. Union Christian College, Bchrampur Murshidabad Dist., West Bengal

22. Belur B. T. College, Belurmath, Hawra, West Bengal

23. St. Xavior’s College, B. T. Dept., 30, Park Street, Calcutta, West Bengal

24. Basic Training College, Angul, Orissa
APPENDIX II

PROFORMA TO BE FILLED IN BY SELECTED TEACHERS

1. What books from the Extension Library have you consulted?

2. What educational journals have you consulted?

3. What additions in the Extension Library would make it more useful for you?

4. What are your suggestions for improving the library service?

5. What services of the Extension Center have been most helpful to you?

6. What are your suggestions for making the Workshops, Seminars and Training Courses organized by the Extension Center more useful to teachers?

7. What are your suggestions for making the publications of the Extension Center more useful to you?

8. What are your suggestions for the organization of discussions, lectures and symposia by the Extension Center?

9. What are your suggestions for the improvement of audio-visual service of the Extension Center?

10. What new service would you like the Extension Center to offer for the benefit of teachers and schools?
APPENDIX III

PROFORMA TO BE FILLED IN BY SELECTED HEADS OF SCHOOLS

1. How many teachers have you sent for Workshops, Seminars or Training Courses?

<table>
<thead>
<tr>
<th>No.</th>
<th>Subject of Workshop</th>
<th>Place</th>
<th>Duration</th>
<th>Teachers Deputed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
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<td>2.</td>
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<td>3.</td>
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</tr>
</tbody>
</table>

Also give your suggestions for the subject and duration of such activities for future.

2. Have you established a staff Study Circle in your school? If so, what was the program and what guidance did the Extension Center give?

3. Have you undertaken any Experimental Project in the school? If so, what activities were carried out and what guidance was provided by the Extension Center?

4. Have you started any scheme for the improvement of teaching of various school subjects? If so, what guidance did you get from the Extension Center?

5. Have you established a Science Club in your school or any other club? If so, what guidance did you get from the Extension Center?

6. How many books and educational journals did you get from the Extension Center and what steps have you taken for their use by the teachers?
7. What teaching aids from the Extension Center did you use in your school? What guidance did you get from the Extension Center in the use and preparation of teaching aids.

8. What is your plan of follow-up activities for continuing the advantages you have derived from the Extension Services?

9. What publications of the Extension Center did you receive during the year? Please give your assessment of each and suggestions for future publications.

10. What are your suggestions for the improvement of the Services offered by the Extension Center?
APPENDIX IV

PROFORMA TO BE FILLED IN BY THE INSPECTING OFFICER, ONE COPY TO BE SENT TO THE DIRECTORATE OF EXTENSION PROGRAMS FOR SECONDARY EDUCATION AND ONE COPY TO BE SENT TO THE CENTER

1. Did you attend the meeting of the Advisory Committee? If so, please give your reaction about the business conducted in it.

2. Please write briefly your assessment of the work of the Extension Center.

3. Please indicate the priorities for the activities and programs of the Extension Center.

4. What publications of the Extension Center did you receive? Please give your assessment of these publications and indicate the topics on which the Center should bring out new publications.

5. Please give your suggestions for the improvement of library and audio-visual service of the Extension Center.

6. Please give your suggestions for the follow-up work of the extension activities in schools.

7. Please indicate briefly how the Extension Services can be made more effective.
APPENDIX V

PROFORMA TO BE FILLED IN BY EACH EXTENSION CENTER ONCE IN THREE MONTHS. ONE COPY SHOULD BE RETAINED AT THE CENTER AND THE OTHER SHOULD BE SENT TO THE DIRECTORATE OF EXTENSION PROGRAMS FOR SECONDARY EDUCATION

1. Please fill in the number.

1) No. of new schools contacted during the last quarter. ____________________

2) No. of new teachers contacted during the last quarter. ____________________

3) No. of teachers who visited the Extension Center during the last quarter. ____________________

2. Please check the activities undertaken by you during the quarter under review:-

1) School visits
2) Workshops, Seminars.
3) Training Courses
4) Audio-visual Services.
5) Library Service
6) Guidance in Study Circle.
7) Guidance in Experimental Projects
8) Guidance in Science Clubs
9) Guidance in Personnel Work for Students.
10) Guidance in improvement of teaching in schools.
11) Guidance in Co-curricular Work
12) Publications
13) Guidance in the Preparation of teaching Aids.
14) Discussion with teachers to discover their problems.
15) Symposium or Lectures
16) Guidance to teachers in Examination Reforms.
17) Any other
3. Please write briefly about the activities carried on by you in the last quarter.

4. What steps did you take in the last quarter to improve the library service?
   1) Opening of sub-centers in schools.
   2) Encouraging schools to start book reviews in staff meetings.
   3) Distribution of book reviews and book digests to individual teachers.
   4) Distribution of annotated bibliographies of books and educational journals in Extension Library.

5. Give details of audio-visual services.
   1) Use of Tape Recorder.
   2) Use of Maps, Charts, Models.
   3) Preparation of audio-visual aids by teachers.
   4) Use of films, film-strips.

<table>
<thead>
<tr>
<th>No.</th>
<th>Place</th>
<th>Names of Films or Film-strips exhibited</th>
<th>Date</th>
<th>Number of Teachers Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<td>2.</td>
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<td>3.</td>
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<td>4.</td>
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<td>5.</td>
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<td>6.</td>
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<tr>
<td>7.</td>
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</tr>
</tbody>
</table>
6. Please fill in the details of Workshops, Seminars and Training Courses.

<table>
<thead>
<tr>
<th>No.</th>
<th>Place</th>
<th>Subject of Workshop</th>
<th>Duration</th>
<th>No. of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td></td>
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<tr>
<td>2.</td>
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<td>3.</td>
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<td>4.</td>
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<td>5.</td>
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<td>6.</td>
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<tr>
<td>7.</td>
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</tr>
</tbody>
</table>

7. What publications have been brought out by your Center during the last quarter?

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>No. of copies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
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<td>3.</td>
<td></td>
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<tr>
<td>4.</td>
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</tbody>
</table>

8. What are the observations of the Advisory Committee in their last meeting?

9. What are your plans for follow-up program of the work of the Extension Center?

10. What help would you like the D.E.P.S.E. to provide you?

11. Quarterly Return of Expenditure.
APPENDIX VI

A SELF ADDRESSED POSTCARD ATTACHED TO THE PUBLICATIONS OF EXTENSION CENTER IN ORDER TO GET THE REACTION OF SELECTED READERS

1. Name of the publication ________________________________

2. Please indicate the worth of this publication for teachers.

3. Please give your suggestions for new publications.
APPENDIX VII
**QUESTIONNAIRE FOR TEACHERS IN THE PARTICIPATING SCHOOLS OF THE EXTENSION SERVICES, MADRAS STATE, INDIA**

Please fill in by checking (✓) or writing brief answers, as the case may be. Use separate sheets for answers, if necessary.

### I.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Name of your school</td>
<td>Boys' ( ) Girls' ( ) Co-educational ( )</td>
</tr>
<tr>
<td>2.</td>
<td>Type</td>
<td>Govt. ( ) Dt. board ( ) Private ( )</td>
</tr>
<tr>
<td>3.</td>
<td>Management</td>
<td>Tamil ( ) English ( ) Others ( )</td>
</tr>
<tr>
<td>5.</td>
<td>Your professional qualification</td>
<td>Secondary grade ( )</td>
</tr>
<tr>
<td>6.</td>
<td>Subjects taken in Part 3, for bachelor's degree</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Optionals in B. T. or L. T.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Your age group</td>
<td>24 years &amp; under ( ) 41 - 45 years ( )</td>
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<tr>
<td></td>
<td></td>
<td>25 - 30 years ( ) 46 - 50 years ( )</td>
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<td></td>
<td></td>
<td>31 - 35 years ( ) 51 - 55 years ( )</td>
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<tr>
<td></td>
<td></td>
<td>36 - 40 years ( ) 56 &amp; over ( )</td>
</tr>
<tr>
<td>9.</td>
<td>Sex</td>
<td>Male ( ) Female ( )</td>
</tr>
<tr>
<td>10.</td>
<td>Marital status</td>
<td>Single ( ) Married ( ) Widowed ( )</td>
</tr>
<tr>
<td>11.</td>
<td>Years of teaching experience</td>
<td>1 year ( ) 16 - 20 years ( )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 - 5 years ( ) 21 - 25 years ( )</td>
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<tr>
<td></td>
<td></td>
<td>6 - 10 years ( ) 26 - 30 years ( )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 - 15 years ( ) 31 &amp; over ( )</td>
</tr>
<tr>
<td>12.</td>
<td>Indicate the subjects taught by you this year by stating the number of periods per week</td>
<td>Tamil ( ) English ( )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mathematics ( ) Science ( )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>History ( ) Geography ( )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. T. ( ) Phy. Education ( )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diversified Courses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Home Science ( ) Engineering ( )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Commerce ( ) Agriculture ( )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Secretarial ( ) Music &amp; Dancing ( )</td>
</tr>
<tr>
<td>13.</td>
<td>Indicate hours spent out of classroom for each of the following</td>
<td>Co-curricular activities ( )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Experimental Projects ( )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lectures ( )</td>
</tr>
</tbody>
</table>
II.

A. The following are courses organized by the Extension Services. Please check (mark) all the content or training courses you have attended.

1. Tamil ( )
2. Mathematics ( )
3. History ( )
4. Social Studies ( )
5. Physical Education ( )
6. Diversified courses ( )
7. English ( )
8. Science ( )
9. Geography ( )
10. Citizenship Training ( )
11. Arts & Crafts ( )
12. Others __________________________ ( )

B. Have you attended any workshop or seminar in the following areas? Yes ___ No ___
Please check all that you have attended.

1. Evaluation ( )
2. Museum Training ( )
3. Audio-visual aids ( )
4. Diagnostic and remedial teaching ( )
5. Library Science ( )
6. Cumulative records ( )
7. Guidance ( )
8. Preparation of Source Booklets ( )
9. Any other __________________________ ( )

C. Check the ones you have attended in these areas.

1. Science club meetings ( )
2. Study circles ( )
3. Social Studies club meetings ( )
4. Symposia ( )
5. Others __________________________ ( )

D. What are some of the difficulties experienced by you in attending these courses, seminars, workshops, etc.? 

1. Pressure for time ( )
2. Insufficient payment of T. A. and D. A. ( )
3. Time schedule not suitable ( )
4. Place of meeting away from school or home ( )
5. Not relieved from classroom teaching ( )
6. Others __________________________ ( )

III.

A. What new techniques have you introduced in your classroom teaching as a result of your participation in the Extension activities? Below are some possibilities. Please check and feel free to add others.

1. Group methods in teaching your subjects ( )
2. Project method of teaching ( )
3. Developing reading skills ( )
4. Use of improvised teaching aids ( )
5. New concept of evaluation made use of in designing class test items ( )
6. Others __________________________
B. Which of the following have you organized in your school? Please check.

1. Experimental projects ( )
2. Class museums ( )
3. Starting of clubs ( )
4. Student Government ( )
5. Action Research Studies ( )
6. Class Libraries ( )
7. Making improvised A. V. aids ( )
8. Others __________________________ ( )

C. What factors have hindered you from either starting or successfully working some of the new techniques?

1. Rigid syllabus ( )
2. Too much emphasis on the final examinations ( )
3. Over-loaded teaching schedule ( )
4. Insufficient co-operation from heads of schools and colleagues ( )
5. Lack of knowledge of procedure ( )
6. Please mention others __________________________

IV.

A. In what areas have you noticed improvement in your pupils as a result of implementing the new techniques listed in III A? Check in the appropriate column for each item.

<table>
<thead>
<tr>
<th>Degree of improvement</th>
<th>Much</th>
<th>Some</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Achievement as shown by test scores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Changes in learning attitude</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3. Class discipline</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4. Encouraging pupil interest</td>
<td></td>
<td></td>
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<tr>
<td>5. Group work</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6. Practical work</td>
<td></td>
<td></td>
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<tr>
<td>7. Any other</td>
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</tbody>
</table>

B. What are your suggestions for bringing about greater progress in pupils as a result of the implementation of the new techniques? Please check.

1. Need for more help from Extension staff for adopting new techniques ( )
2. More time for teacher preparation ( )
3. Improved facilities--size of room, lab, equipment, books, etc. ( )
4. Mention others __________________________

V.

A. Have you used any of the audio-visual materials available from the Extension Centers? Please check those used.

1. Films and filmstrips ( )
2. Science charts and models ( )
3. Silk-screen materials ( )
4. Globes, wall maps, relief maps ( )
5. Projectors and tape recorders ( )
6. Social Studies charts ( )
7. Others __________________________
B. Indicate the difficulties, if any, in borrowing or using the audio-visual materials.

1. Lack of facilities in the school for using them
2. Inadequate transportation facilities
3. Arrangements for securing them from the Extension Centers not adequate
4. Lack of co-operation from concerned persons
5. Others

VI.

A. If you have made use of the books and journals from the Department of Extension Services, for what purpose did you borrow them? Please check.

1. Subject matter help
2. General reference
3. Improvising teaching aids
4. Method of teaching
5. Research studies
6. Others

B. What procedure do you adopt for borrowing books and journals?

1. Direct from the Extension Center
2. Through the sub-centers
3. Through the Principal or H. M.
4. During teacher's visits to the Extension Center
5. By mail

C. What are some of the difficulties encountered in borrowing and using books?

1. Difficult level in content vocabulary
2. Inadequate supply
3. Inadequate procedure for borrowing books
4. Lack of books in regional languages
5. Insufficient subject-matter coverage
6. Others

VII.

A. School visits, by the co-ordinator and the training college staff, form an important part of the Extension work. How often do they visit your school?

1. Once a fortnight
2. Once a month
3. Once a term
4. Once in two terms
5. Once a year
6. Never

B. Have the co-ordinator and the training college staff conducted any of these activities in your school? Yes  No

Please check all that have been held.

1. Demonstration lessons
2. Training courses
3. Experimental projects
4. Study circles
5. Examination reforms
6. Discussion groups
7. Workshops
8. Film shows
9. Programmes for gifted or slow learners
10. Others
C. Have you participated in any of the above-mentioned activities? If so, circle the number of activities you have participated in.

1  2  3  4  5  6  7  8  9  10

D. Indicate the type of in-service activity you prefer by checking your preference.

1. Intensive type of activity conducted in your school or those near yours
2. Comprehensive and exhaustive type of activities organized at the Extension Center

E. Check the reasons stated below which you feel support your preference for the type of in-service activity.

1. Attempt to solve specific problems in your school
2. Equal chance for interested teachers to participate
3. More co-operation among teachers who handle one class
4. Time schedule more suitable
5. Stimulates immediate action for the improvement of classroom instruction
6. Exchange of ideas & experience with teachers from other schools
7. Opportunity to attend seminars & workshops on general problems
8. Contact with teachers from other schools
9. Assistance from resource persons other than Training College staff
10. Opportunity to be away from the routine of the school
11. Economically advantageous for the Extension Center to conduct activities, broad in nature, at a central location
12. Others

VIII.

A. Which of the following publications of the Extension Centers have you read and/or made use of?

1. Newsletters
2. Film catalogue
3. Reports of seminars, workshops and courses
4. Book reviews
5. Library catalogue
6. Others

B. Please give your suggestions for making the publications of the Extension Center more useful to the teachers.
IX. Do you feel more use could be made of the in-service activities offered by the Extension Centers? Yes  No  
If so, what are the factors that prevented you from taking more advantage of the activities?

X. Please check your suggestions for making the workshops, seminars, training courses and other activities organized by the Extension Center more useful to teachers.

1. Books in regional languages  
2. Incentives--mention types  
3. More demonstration lessons  
4. Satisfactory arrangement for T. A. and D. A.  
5. Increase of activities at the Extension Center  
6. Increase the intensive type of activities  
7. Greater use of audio-visual materials  
8. More co-operation between Extension Services and State Department of Education  
9. Add any other

Place ____________________________  Signature ____________________________
Date ____________________________  Designation ____________________________
APPENDIX VIII
**QUESTIONNAIRE FOR HEADS OF PARTICIPATING SCHOOLS OF THE EXTENSION SERVICES, MADRAS STATE, INDIA.**

Please fill in by marking (✓), or writing brief answers. Kindly use extra sheets for answers wherever necessary.

### I.

1. **Name of your school**
2. **Your professional qualification**
   - B. T. ( )
   - L. T. ( )
   - B. Ed. ( )
   - M. Ed. ( )
3. **Other degrees held**
   - M. A. ( )
   - M. Sc. ( )
   - B. A. ( )
   - B. A. (Hons) ( )
4. **Sex**
   - Male ( )
   - Female ( )
5. **Your age group**
   - under 30 years ( )
   - 31-40 years ( )
   - 41-50 years ( )
   - 51-60 years ( )
   - 61 & over ( )
6. **Subjects you taught/now teach**
7. **Years of experience**
   - As a teacher ( )
   - As a H. M. ( )

### II.

A. The major services of the Extension Center are given below. Which of these services do you take advantage of?

1. **Training courses, workshops and seminars** ( )
2. **Directional help from the co-ordinator & the training college staff** ( )
3. **Audio-visual service** ( )
4. **Library service** ( )
5. **Organization of experimental projects** ( )
6. **Starting of clubs** ( )
7. **Publications** ( )
8. **Conference of heads of schools** ( )
9. **Intensive work** ( )

B. What are some of the advantages you derived from the above-mentioned activities? Given below are some possibilities. Please feel free to add.

1. **Teacher growth in terms of subject matter competency, new methods, increased interest, etc.** ( )
2. **Better relation between teacher & teacher and teacher & pupils** ( )
3. **Achievement as shown by test scores** ( )
4. **School and class discipline** ( )
5. **Change in pupils' attitude for learning** ( )
6. **Improvement in practical work** ( )
7. **Mention others** ( )

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Dissertation Study for Doctorate in Education, Under the Guidance of the School of Education, Oregon State University, Corvallis, Oregon.

Miss E. G. VEDANAYAGAM, M. A., M.S., Oregon State University, Corvallis, Oregon.
C. Please list the subjects or areas in which you would like more training courses, workshops, and seminars to be conducted.

III. Have you or your teachers undertaken or organized any of the following? Yes ____ No ____
If so, what activities were carried out and what types of guidance were provided by the Extension Center? Please give your answers for each.

1. Experimental projects:
   Activities
   Guidance

2. Clubs:
   Activities
   Guidance

3. Study circles:
   Activities
   Guidance

IV. Did your school participate in the Science Fairs organized by the Extension Centers? Yes ____ No ____
If so, what were the benefits derived from them?

   1. Discovering Science talents among pupils ( )
   2. Recognizing & motivating Science talents ( )
   3. Arousing interest in General Science as a hobby ( )
   4. Exchanging information & ideas with Science clubs in other schools ( )
   5. Encouraging co-operative planning of work and study ( )
   6. Others ___________________________________________ ( )

V.

A. What methods do you follow for borrowing books, educational journals, and audio-visual aids from the Extension Center for the use of the teachers?

   1. Based on the needs of the teachers, request made to the co-ordinator by the Principal or H. M. ( )
   2. Individual teachers send in their requests to the co-ordinator ( )
   3. Co-ordinator finds the needs of the teachers during school visits ( )
   4. Teachers make requests when they visit the center for attending seminars, courses, etc. ( )
5. Co-ordinator sends periodically, selected books & aids ( )
6. Please mention others ________________________________ ( )

B. What are some of the difficulties encountered in borrowing and using books? Please check.

1. Difficult level in terms of content, vocabulary, etc. ( )
2. Inadequate supply ( )
3. Lack of proper facilities for borrowing books ( )
4. Lack of books in regional languages ( )
5. Insufficient subject matter coverage ( )
6. Others ________________________________ ( )

C. Indicate the difficulties, if any, in borrowing and/or using the audio-visual materials.

1. Lack of facilities in the school for using them ( )
2. Inadequate transportation facilities ( )
3. Insufficient interest on the part of the teachers ( )
4. Lack of knowledge of the available materials ( )
5. Please mention others ________________________________ ( )

VI. A. Are you familiar with the publications of the Extension Center mentioned below?

Yes ____ No ____

If you are, please give your assessment based on a two-point scale; A, denoting most valuable and B, least valuable.

1. Newsletters ( )
2. Book reviews ( )
3. Library catalogues ( )
4. Film catalogues ( )
5. Reports of seminars, courses, etc. ( )
6. Please specify any others ________________________________ ( )

B. Will you, please, give reasons for considering them most or least valuable?

C. Please give your suggestions for making the publications of the Extension Center more valuable and useful to the teachers.

VII. Do you have a plan to follow-up activities for continuing the advantages you have derived from the Extension Services? Explain the plan briefly.
VIII. Have you found the periodical visits of the co-ordinator and/or the staff of the training college useful? Yes ___ No ___
If so, the following possibilities may help in stating the reasons. Please add others.

1. Help & guidance to individual teachers
2. Problems are more easily identified & solved in a class-room situation
3. Teachers profit from demonstration lessons given by specialists
4. Visits serve as incentives for improving instructional methods
5. Others ___________________________

IX. Do you prefer the intensive type of activity conducted in individual schools or in schools near-by, as compared to the extensive type organized at the Extension Center? Yes ___ No ___
Would some of the reasons given below support your answers?

1. Attempt to solve specific problems of each school
2. Equal chance for interested teachers to participate
3. Time schedule more suitable
4. Stimulates immediate action for the improvement of class-room instruction
5. More co-operation among teachers who handle one class
6. Mention others ___________________________

X. What are some of the factors that prevent you from taking more advantage of the in-service activities offered by the Extension Services?

1. Pressure for time
2. Examination-oriented syllabus
3. Inadequate arrangement for the payment of T. A. & D. A.
4. Lack of interest on the part of the teachers
5. Others ___________________________

XI. Please give your suggestions for making the workshops, seminars, training courses, and other activities organized by the Extension Services, more useful to the teachers.

1. Books in regional languages
2. More demonstration lessons
3. Increase the intensive type of activities
4. Satisfactory arrangement for T. A. & D. A.
5. Incentives--mention type
6. Greater use of audio-visual materials
7. More co-operation between Extension Services and State Department of Education
8. Increase the extensive type of activities
9. Add any other ___________________________

Place ___________________________ Signature ___________________________
Date ___________________________ Designation ___________________________