

## CHAPTER VI

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HIGHER SECONDARY TEACHER EDUCATION PROGRAMME

This chapter presents the proposed programme for higher secondary teachers. In order to design the programme the investigator ascertained the training needs of the higher secondary teachers through a survey of the opinions of teacher educators and higher secondary teachers of Gujarat (The report has been presented in Chapter III). The investigator also studied the existing preservice training programmes (M.Sc.Ed.) and the inservice training programmes. (The report has been presented in Chapter II, Part II). The investigator collected the opinions of higher secondary teachers about the functions of higher secondary teachers (The detailed report has been presented in Chapter IV). Further, the syllabi of B.Ed. programmes in the universities of Gujarat were analysed. (The report of the B.Ed. syllabi analysis has been presented in Chapter V). The data collected through all these sources became the data bases for evolving the programme of higher secondary teacher education programme. The programme has been designed with a national perspective. After evolving the programme it was sent to a sizeable group of experts in the field of education for their comments to validate the programme.

In the following pages the higher secondary teacher education programme has been presented.

### 6.1 INTRODUCTION

A sound programme of professional education for teachers is essential for qualitative improvement in education. The Education Commission (1964-66) recommended 10 + 2 + 3

pattern of education<sup>1</sup>. This pattern has been implemented in almost all the states<sup>2</sup>. The change in the pattern of education has necessitated the structural changes at different levels of teacher education.

Although, the significance of teacher education was stressed by the University Education Commission (1949), the Secondary Education Commission (1953), the International Team on Teachers and Curricula in Secondary Schools (1954) and Education Commission (1964-66), their recommendations have not yet been implemented in any large measure.

In modern days, the knowledge has been growing very rapidly. This has resulted in the consequent changes in the curricula at different stages. The teacher education systems at different levels have to respond to the rapid changes taking place in the school system and society. The need for change in teacher education content has been acutely felt, especially, for the secondary and higher secondary teachers. The rapid advances made in science and technology has also made the curriculum planners, to revise the content of courses at different levels.

The recruitment policy of the government and the entry qualification prescribed by the institutions have a remarkable influence on the teacher preparation programme. The candidates are required to be master degree holders (i.e., M.A./M.Sc/M.Com.) in content subjects and to have a bachelors degree in education to get employment as teacher in higher secondary schools. But, the candidates are required to have a bachelor's degree in content area (i.e. B.A/B.Sc/B.Com.) and a bachelor's degree in education to get employment as teacher at secondary school. It could

be clearly observed that except for the higher qualification in content area that candidates for secondary as well as higher secondary school teaching have to undergo the same degree course, namely, Bachelor of Education, which is meant for secondary teacher preparation. This anomaly has been rightly high-lighted by many educationists concerned with teacher education. Therefore, the need for examining the secondary teacher education programme with reference to the needs of higher secondary teachers has been considered urgent and further, the change in the pattern of education calls for re-organisation of the teacher education programmes.

The National Council for Teacher Education (N.C.T.E.) has deliberated on some of these issues in its meetings. Recognising the anomaly pointed out in the previous section, at the national level, National Council for Teacher Education has proposed a curriculum framework, for plus two (+2) stage teachers after serious deliberation of issues by experts in the field<sup>3</sup>. The National Council for Teacher Education has emphasised more on vocationalization of courses at +2 stage and it suggested for designing special training programmes for teachers at that stage. However, these recommendations are yet to result in separate well designed pre-service and regular in-service programmes for teachers at +2 stage.

The higher secondary stage which comes in between the stages of secondary and university education is a linking one. The teacher at the higher secondary stage has to prepare the children for entering into the university. Further, he has to initiate them into the specialized subject matter. He has got the onus of laying sound foundation for

the adequate coverage of the general content and to provide specialized and focused content aspects in pre-vocational subject areas. Generally, the higher secondary students will be in adolescent and post adolescent periods. The students in this period usually face emotional stress and strain in identifying their self and making adjustment to their roles: Therefore, the teacher at this stage should be sympathetic to student's problems : personal as well as academic, and help them to gain confidence and adjust to the environment. As the higher secondary stage is also highly impressionable period, the teachers have to try to instil in the students the belief in social justice and national integration, the values befitting a democratic, socialist and secular society. He has to act as a catalyst in the process of developing students into productive citizens. To effectively carry out these functions the higher secondary teacher needs to have appropriate learning experiences which help him in developing abilities, interests, aptitude and personality. This requires that the pedagogical theory should reflect our national ideology and the problems and issues that our society is facing today. The teacher education programme has to initiate the higher secondary teacher into the professional knowledge, skills and values.

It is well recognized that the secondary teacher education programme (B.Ed.) offered in different colleges of education are not fully able to cater to the needs of the higher secondary teachers. Further, the programme as being run, has a number of short comings.

The investigator conducted a survey to understand the inadequacies of the present B.Ed. programme with reference to the higher secondary teachers. Out of 75 teacher educators from all the teacher education institutions of Gujarat 77 per cent responded that the B.Ed. programme

is not able to cater to all the needs of the higher secondary teachers, 15 per cent of teacher educators opined that B.Ed. programme is able to satisfy all the needs of higher secondary teachers and eight per cent of teacher educators opined that B.Ed. programme is partially catering to the needs of the higher secondary teachers.

This indicates that majority of the teacher educators opine that B.Ed. programme is inadequate in meeting the needs of higher secondary teachers. This calls for restructuring of the B.Ed. programme or developing a new programme for higher secondary teachers.

Out of one hundred and eightysix higher secondary teachers drawn from all over Gujarat state, majority of the teachers opined that the B.Ed. programme is inadequate.

The teacher educators as well as higher secondary teachers pointed out the following major inadequacies of the B.Ed. programme with respect to the needs of higher secondary teachers :

1. The B.Ed. curriculum does not make any distinction in the fundamental courses like psychology, sociology, philosophy etc.
2. The B.Ed. curriculum is rigid and does not focus on higher secondary stage.
3. The B.Ed. curriculum caters only to the needs of secondary stage teachers. However, many teacher educators observed that the B.Ed. programme does not cater to the needs of secondary teachers satisfactorily.
4. The content course in B.Ed. programme is weak.

5. B.Ed. curriculum does not lay adequate emphasis on the methods of teaching for higher secondary stage.
6. The B.Ed. programme does not provide any practical experience for science teachers.
7. The B.Ed. programme is highly theoretical.
8. The B.Ed. curriculum is irrelevant and inadequate.

The National Council for Teacher Education in the year 1978 constituted four regional study teams of Professors of Education under the Chairmanship of the Principals of the Regional Colleges of Education to study the problems of teacher education in the respective regions and to suggest ways and means for raising its standards. It was found by all the study teams that there is need for the reorganisation of the B.Ed. programme.

The study team for the Western Region has recommended the introduction of separate courses for higher secondary teachers. Further, it has emphasized on the specialization in the training of teachers for secondary and the plus 2 level in the teaching of science as separate subjects (Biology, Physics, Chemistry, Mathematics) rather than merely training them in the methodology of science which is very general and vague.<sup>4</sup>

Therefore, there is an urgent need to critically examine the teacher education course at the secondary level and restructure the same to fulfil the needs of higher secondary teachers. Further, there is also a need for developing new courses relevant to the needs of the higher secondary teachers.



In order to realize these felt needs the investigator assessed the pre-service and in-service needs of the higher secondary teachers by collecting the opinions of teacher educators and higher secondary teachers and co-ordinators. The functions of higher secondary teachers was examined with the help of a job analysis questionnaire. Further, the investigator examined the course outline of the secondary teacher education to identify the relevant components for higher secondary teacher education programme. The data collected was analysed and the different components of the higher secondary teacher education programme was identified.

An attempt has been made to design a higher secondary teacher education programme. Researches concerning the +2 stage are conspicuous by their absence. However, it also appears from the research papers, articles and reports published over the years, that many educationists are concerned about the problem of lack of training programmes for the +2 stage teachers. (Mehrotra 1979; Pandharipande 1978; Anand C.L. and Padma M.S. 1984).

Decisions about the components of the model have been taken based on the surveys conducted by the investigator. The investigator studied the pre-service needs of the higher secondary teachers by collecting the opinions of higher secondary teachers and teacher educators (Through questionnaire and interview schedules). The sample for the study constituted seventy five teacher educators drawn from all the teacher training colleges of Gujarat and one hundred and eighty six higher secondary teachers (Representing all the districts of Gujarat) from the selected higher secondary schools of Gujarat.

In order to study the in-service training needs, the co-ordinators of all the extension services departments and continuing education centres in Gujarat and all the four extension services departments of the regional colleges of education (Mysore, Bhubaneswar, Bhopal, Ajmer) were contacted and the relevant data were collected through questionnaire and personal interviews.

In order to understand the functions of higher secondary teachers, the investigator conducted a survey in Baroda District. One hundred and forty one higher secondary teachers constituted the sample for the study.

The study of the recommendations of several relevant reports, proceedings of the seminar and minutes of the meetings of progressional bodies, has also influenced the investigator while taking decisions regarding the course structure.

In this backdrop the following programme has been visualised.

#### HIGHER SECONDARY TEACHER EDUCATION PROGRAMME

##### 6.2.1 Assumptions about teaching :

- i) Teaching is intentional activity; it is purposeful and goal directed.
- ii) Teaching is an active, culturally-oriented art and craft.
- iii) Teaching is a means of establishing and developing human relationships.

To sum up : teaching is an expression in practice of acquired and personalised knowledge, understanding, skill, ability, technology and cultural perspective. Teaching is directed thus towards the transmission of information, the imparting of knowledge, the organisation and humanitarian management of educational environments, the participation in human interaction, the fostering of healthy, substantial and enduring human relationships, and the art of arousing the enthusiasm of others for learning.

### 6.2.2 Assumptions about the programme :

The following are the assumptions of the Higher Secondary Teacher Education Programme :

1. The introduction of the new pattern (10 + 2 + 3) of education has necessitated ~~the~~ restructuring the teacher education programmes.
2. The Secondary Teacher Education Course (B.Ed.) is not fully catering to the needs of higher secondary teachers.
3. There is a strong need for some relevant professional education for higher secondary teachers.
4. Learning includes content, skills, attitudes, and values. Learning is promoted by feedback.
5. Human reactions are voluntary and involuntary.
6. Man can examine his own acts, feelings and needs.

### EXPLANATIONS

1. An important component in the preparation of teachers - important certainly for secondary and higher secondary school teacher - is the knowledge he must possess of the subject or field which he is teaching. The importance of such knowledge to the teacher will be determined to some extent by the level at which he teaches. The fifth standard teacher will have considerably more need for breadth than depth, but this will not be true of a teacher in the secondary and more so in the higher secondary school, who must have knowledge of his subject that goes well beyond that he gains as part of

his general or liberal education. Further, the rapid changes that have occurred in a number of sciences in the last few years, changes often complex, require more intensive study on the part of higher secondary teachers to ensure their own comprehension of these developments. New emphases by the colleges on demonstrated proficiency in subject matter areas rather than on the accumulation of school credits or total marks obtained in the final examinations, are forcing teachers to prepare their students with greater depth of understanding. A growing concern for the gifted at all grades and the development of programmes of college entrance examinations, has necessitated the higher secondary teachers in science as in other fields to make a higher level of preparation in their subject matter.

2. The higher secondary teacher has to act as a catalyst in the process of developing a citizen who is productive, believes in social justice and national integration and possesses values befitting a democratic, socialist and secular society. For carrying out this function effectively, the higher secondary teacher needs to become such a citizen through appropriate learning experiences. This requires that the pedagogical theory should reflect our national ideology and the problems and issues that our society is facing today. Discussion of these will create in the student teacher awareness of the national scene and sharpen his social sensitivity which may, in turn, have a similar impact on the children.

3. In order to effectively develop the required skills, the higher secondary teachers have to be properly equipped with the cognitive, affective and psychomotor skills.

4. To function effectively as a teacher at the higher secondary level, the teacher needs to understand the bio-psycho-social needs of the adolescent and the problems arising out of their non-fulfilment. Consequently, teachers have to be provided with the elements of natural sciences, psychology, and sociological features concerning the adolescent period. Further, they should be provided with the knowledge of problems of non-fulfilment of the needs of adolescent and the needed guidance and counselling : principles and techniques.

5. The teacher has to continuously grow in his professional field by undertaking research projects, thinking of new methodology of teaching and further generation of knowledge. Especially, the higher secondary teacher has to take more initiative in his professional growth for the demands at this stage has been increasing for the qualitative improvement of standards of education as this is the preparatory stage for the university education.

6. As the higher secondary stage is preparatory stage for university education or a stage of pre-vocational education, it is imperative that the students have to develop self-study habits and involve in group learning methods and take initiative in participating in the curricular activities. The teachers at this stage, therefore, have to develop the skills of promoting self-study habits among children, acquire competence in group-study methods and the activity centred teaching.

7. Teacher education is conceived in two phases:  
Preservice education and in-service teacher education.

Pre-service teacher education has to be continued, reinforced and further improved through continuous and regular in-service teacher education programmes. This ensures continuous professional growth of higher secondary teachers.

### 6.3 OBJECTIVES

The following are the objectives of higher secondary teacher education programme :

The student teachers -

1. Develop competence to teach the subject of his specialization on the basis of accepted principles of learning and teaching.
2. Keep abreast of the latest developments in the subject matter he is teaching and the methodology of teaching.
3. Develop an understanding of the aims and objectives of education in general and of higher secondary education in particular in the Indian background, to promote awareness of the role of education and of the teacher in building up a democratic, secular and socialist society.
4. Develop skills - cognitive, affective and psychomotor for teaching academic and/or vocational subjects by providing appropriate learning experiences.

5. Develop skills in making use of educational technology in teaching academic and/or vocational subjects.
6. Understand the bio-psycho-social needs of the adolescent and the problems arising out of their nonfulfilment;
7. Develop skills in guiding and counselling the adolescent in solving his personal and academic problems.
8. Undertake investigatory projects, action research and experimental projects both in education and specialized subject areas.
9. Understand the role of the school and teachers in changing the society.
10. Develop the skills of promoting self-study habits among children, acquire competence in group-study-methods and activity - centred teaching.
11. Provide the student teacher with a programme of continuing professional and personal education on completion of the pre-service phase of teacher education.
12. Provide a curricular experience which gives unity to pre-service and in-service education.

#### 6.4 THE CONCEPTUAL SCHEME

The Higher Secondary Teacher Education Programme comprises the pre-service teacher education, the in-service teacher education and Evaluation. To ensure the continuous professional growth of the teacher, the pre-service and in-service teacher education programmes have to be seen as a continuous process of education of teachers wherein pre-service education constitutes the first phase and the in-service education keeps the teacher abreast of the recent developments in the content as well as methodology of teaching. The in-service education constitutes the second phase of teacher education and it is a regular and continuous process which employs various strategies and techniques to equip the teacher with appropriate knowledge and skills to be effective in the classrooms. Evaluation forms the third major component of the programme which compares the process of pre-service and in-service programmes with the stated objectives. The discrepancy observed would be sent as a feed back information for further modification of objectives to fulfil the felt needs of higher secondary teachers. The Schematic representation of the model could be seen on page 294.

#### PHASE I

##### 6.4.1 PRE-SERVICE TEACHER EDUCATION PROGRAMME.

The Pre-Service Teacher Education is defined as the academic and professional work in teachers' college or university that a person has done before employment as a teacher. The pre-service teacher education provides the student-teacher the means of experiencing educational practice as a teacher and it also provides an opportunity for dialogue



with others with the objective of examining, questioning, reconstructing and building related educational theory.

The Pre-service teacher education programme comprises the pedagogical theory, the practicum, the co-curricular activities and the project work.

The pedagogical theory is the theoretical component and it consists of nine courses. These nine courses could be further classified as under:

Foundation Course : Course 1 to 5

- Course 1 : Philosophical and sociological perspectives in education and the emerging society.
- Course 2 : Psychology of the adolescent learner.
- Course 3 : Higher secondary school organisation and management.
- Course 4 : Strategies and approaches for higher secondary teaching.
- Course 5 : Educational evaluation.

Special Course : Course 6 and 7

- Course 6 : Method of teaching science/commerce/humanities/languages.
- Course 7 : Method of teaching special subject : Chemistry/physics/mathematics/history/economics/accountancy, etc.
- Course 8 : Content course (subject).

and

Special Fields : Course 9

Education technology, educational and vocational guidance, school library organization, non-formal education, population education, adult and continuing education, education of the exceptional children, elementary education, socially useful productive work, environmental education, mental hygiene, audio-visual education, applied linguistics, etc.

For details please refer schematic representation of the Model on page No. 294. The second component constitutes the practicum which includes skill based training in simulated micro-teaching, clinical activities, pre-internship programme and internship programme. The third component consists of co-curricular activities.

The fourth component comprises a project work to be undertaken by the higher secondary teacher to get acquainted with the elements of research work.

#### 6.4.1.1 THE NEED FOR PEDAGOGICAL THEORY

In the early part of twentieth century, the apprenticeship system was accepted as the teacher training adequate to function effectively in the classroom teaching. However, in these days, conditions have changed and the old apprenticeship system is not viable. Education no longer has completely agreed upon aims; procedures are constantly under discussion and vary according to what different people conceive themselves as doing in teaching the various subjects; fundamental questions concerned with principles

underlying school organisation, class management and the curriculum are constantly being raised; and in the area of moral education the task is made more perplexing by the variations of standards which characterize a highly differentiated society. Under these changed circumstances, the teacher has to indulge in philosophical reflection about what he is doing and how well it could be done. Similarly, the knowledge about the psychology of children and about the historical and social conditions which affect their behaviour and organisation of schools has vastly increased. Consequently, a working knowledge of these sciences of man is becoming as essential to a teacher as a knowledge of anatomy and physiology is to a doctor. A beginning must, therefore, be made at the level of initial training to equip the teacher with rudiments of disciplined philosophical thought with those parts of psychology and the social sciences which are of particular relevance to his complex task. For, though those who come for teacher education course are presumed to be educated in a general sense, very few of them have more than a nodding acquaintance with those particular disciplines that are ancillary to their task. Further, it could well be argued that though the main emphasis at the level of initial training must be on the training of teachers, it is important to educate them as persons. Philosophy, psychology, history and the social sciences play a vital role in what may be called a liberal education under modern conditions.

The investigator conducted a survey to ascertain the need of foundation course/s for higher secondary teachers. Out of one hundred and eighty six higher secondary teachers drawn from all over Gujarat, one hundred twenty nine teachers opined that there is need for foundation course for higher

secondary teachers (69.35%) and fiftytwo teachers opined that there is no need for foundation course (like philosophy of education, psychology of education, curriculum development, sociology of education, etc.) for higher secondary teachers (28%). This clearly indicates that the majority of the higher secondary teachers are in favour of the introduction of foundation course. Therefore, there is a need to include foundation course/s in the higher secondary teacher preparation programme.

#### 6.4.1.1.1 FOUNDATION COURSES

The foundation courses constitute the first sub-component in pedagogical theory. It comprises all the theoretical elements required for a teacher to understand the educational context and function systematically to solve educational problems.

Course 1 : Philosophical and sociological perspectives in education and the emerging society.

This course helps the prospective teacher in understanding the nature of Indian society and the role of education in it. It provides a general background of education and the nature of the problems in education. It gives a broad outline of the development of education in India which helps the teacher to understand the educational problems in the wider context of educational development, certain current issues like value education, environmental education, universalization of education, equalization of educational opportunities etc., are discussed to make the teacher think about these issues in a wider perspective while discussing these issues the prospective teacher is expected to look at the educational phenomena from different perspectives to

understand these issues in a better way. The proper understanding of the problems in the higher secondary education will sensitise the prospective teacher, which helps him in adjusting properly to the higher secondary school system. The aims of education and the concept of education are discussed in greater detail to understand the process of education and its relation with philosophy.

Some of the practical activities are suggested (please refer Section 6.6.1. The prospective teachers involving themselves in these practical activities, with adequate theoretical understanding of the basic concepts and constructs would be able to develop their own perspective. The suggested practical activities is an integral part of the course.

It may be observed that the selection of the topics has been made taking into consideration the perspective to be provided to prospective teachers, the understanding of fundamental problems and the role of teacher in the Indian society.

An illustrative course outline has been presented in Section 6.6.1. This course outline describes the course elements in detail.

**Course 2 : Psychology of the adolescent learner.**

The purpose of this course is to equip the prospective teachers with those psychological skills and insights which are essential for the successful guidance of the growth, learning and adjustment of the child. It helps the higher secondary teachers to understand the needs and problems of students and to devise appropriate strategies to fulfil the

needs and solve personal and academic problems of students. This course tries to provide the necessary psychological knowledge, skills to function effectively as a higher secondary teacher.

This course covers a wide range of topics to have a better perspective for the teacher. The course is built keeping in focus the needs and problems of the higher secondary student and the competencies needed for the teacher to teach effectively at the higher secondary stage. The course comprises theory and practical activities. The units covered under theory may be seen in Section 6.6.2. In this course emphasis has to be given for understanding the characteristics of the adolescent and post adolescent stage of development. Emphasis also has to be given for the methods and approaches which help the student to learn independently. Therefore, the teacher tries to understand the psychological principles and processes involved in various methods and approaches of guiding the adolescent children to learn independently.

The practical activity forms an integral part of the course which helps the teacher to apply the principles learnt in the theory classes, to solve the practical problems. It also provides an opportunity for the prospective teacher to understand the various psychological concepts and constructs in relation to the practical educational situations. An illustrative list of practical activities are provided in the course outline. The details of the course outline and the suggested practical activities are presented in the Section 6.6.2.

The investigator conducted a survey to ascertain the need for foundation course/s, for higher secondary teachers. (Please refer P. 225 ). Majority of the higher secondary teachers opined that there is need for foundation course for higher secondary teachers (69%). The reasons given by the higher secondary teachers for including psychology course in teacher education programme for higher secondary teachers are :

1. To understand the psycho-social problems of students.
2. To make the trainee aware of psychological needs of a student.
3. To help the students to solve their personal and academic problems.
4. Consequently, a course on psychology has become an indispensable component in the teacher education programme of higher secondary teachers.

Course 3 : Higher secondary school organisation and management.

This constitutes the third important course in the sub-component 'the Foundation course'. The purpose of this course is to provide knowledge about the development of higher secondary education, its organisation and management. It also provides the necessary skills for the higher secondary teacher to carry out administrative and management functions effectively in the school. The course comprises a theory component and the practical activities component. The theoretical elements try to describe the structure, hierarchy and functions of various administrative bodies related to the higher secondary education. For further details about the course elements please refer Section 6.6.3.

The practical activities form an integral part of the course. It helps the higher secondary teacher to develop the necessary skills to function effectively. It also provides appropriate experiences for the teacher to understand his role in the higher secondary school.

An illustrative outline of the course and practical activities are presented in Section 6.6.3.

The investigator through a survey found out that no special training is given in administration for higher secondary teachers, (for details about the study please refer p.285). The teacher educators, in the study, have recommended some of the activities in the curriculum to expose the higher secondary teachers to educational administration. The following are the major recommended activities:

1. The trainees should be given opportunity to organize seminar, workshop, etc.
2. The trainees should be provided some experiences in school like taking attendance, maintaining progress cards, maintenance of records, solving some of the problems in classroom situation.
3. To provide opportunity for the trainee to handle a class of large size.
4. To provide opportunity for teacher trainees to participate in planning of annual work in schools.

The activities recommended above are suggestive and the individual teacher education institution can design relevant activities according to their local needs.

The course on educational administration and management helps the teacher to understand the management (in which he



is working) and the different roles he has to perform to carry out the educational activities effectively in the school.

Course 4 : Strategies and approaches for higher secondary teachers.

This is the fourth course in the sub-component 'foundation course'. This course has link with almost all the components of the teacher education programme. This course consists of the elements which help in realizing effectively the cognitive and affective objectives of teaching. This course has to be seen in relation to the content course (Course No.8) so that the prospective teacher develops an appropriate perspective and also develops his/her style of teaching. Recognising the needs of the higher secondary students, teachers at this stage have to be well trained in the non-directive approaches of teaching. Further, the teachers are required to develop appropriate skills in directing the students for self study or independent study. The teachers have the onus of initiating the student of higher secondary stage to different branches of specialized subjects and pre-vocational skills.

The detailed course outline along with practical activities are presented in Section 6.6.4. In these theoretical elements a wide range of topics have been listed to fulfil the objectives. Practical work is an integral part of the course. The teacher trainees will be able to appreciate the concepts and constructs when they are able to apply them in practical situations. The practical activities also provide the trainee an opportunity to experience the effectiveness of different strategies and approaches.

In a study the investigator found that many of the teacher educators use methods like lecture-cum-demonstration, demonstration, assignments, small group discussions more frequently. (Please refer p.225 for details of study). The teacher educators have reported that higher secondary teacher trainees complain about the problems which they are facing like difficulties in framing questions, sequencing of the content, integrating content with the methodology and difficulty in handling large classes. Whereas majority of the higher secondary teachers have reported that they do not have any problem in teaching activities like asking questions, framing questions, controlling or managing the class-room etc., but nearly half of the higher secondary teachers in the sample have reported that they have some difficulties in organising group discussions (for example, organising the students into small groups and completing the discussion within the time limit). These findings show that higher secondary teacher trainees require more intensive training in the pre-service phase in teaching activities. Some of the higher secondary teachers may not be finding difficulty in teaching activities for after their pre-service training, they have gained some teaching experience and the induction period (probationary) of learning teaching has filled the gap in their repertoire of teaching skills.

With regard to the involvement of higher secondary teacher trainees, in pre-service phase, in teaching-learning activities, nearly half of the teacher educators have reported that trainees are involved in teaching-learning activities like seminar, discussion and helping the teacher educators in teaching activities. However, the other half of the teacher educators in the sample have reported that trainees are not involved in activities like

seminar, discussion and trainees' help is not taken for teaching. This implies that some teacher education institutions are providing opportunities for the trainees to participate in activities like seminar, discussion and teaching activities. Further, it could be observed that there is need for more involvement of higher secondary teacher trainees in the teaching-learning activities like seminar, discussion etc., A list of general skills and methods of teaching relevant to higher secondary teaching provided by the teacher educators and higher secondary teachers in the study has been incorporated into the course outline. Most of the higher secondary teachers (70%) have recommended that the higher secondary teacher trainees should be exposed to the designing of investigatory projects/ assignments/experiments and improving of the existing materials. Most of the teacher educators (79%) and higher secondary teachers (70%) in the study have opined that the trainees should be provided training in the use of audio-visual materials. Therefore, a unit on audio-visual materials has been included in the course. Further, some practical activities are also suggested to make the teacher trainee familiar with audio-visual equipments. The practical activities provided at the end of the course outline is illustrative and many other relevant practical activities could be included in the list. For further details about course outline and practical activities please refer section 6.6.4. Further, the practicum will provide more opportunities for the teacher trainees to practise different teaching skills, methods and approaches in simulated as well as real school situations.

Course 5 : Educational evaluation.

Evaluation is the fifth course under the sub-component 'foundation course'. This course is very essential for any teacher to maintain the standard and find the inadequacies in the teaching learning methods and approaches. It helps the teacher trainee to develop the ability to select and use the most appropriate techniques and tools for the assessment of student behaviour in relation to the stated objectives in different situations. It also helps the teacher trainee to understand the place and role of evaluation in the teaching-learning process and the implications of various techniques and tools of evaluation for the assessment of educational growth at the level of higher secondary education.

The investigator in a study (please refer p.285 ) found that fiftyfour teacher educators (72%) have opined that there is need for suitable training in evaluation theory and techniques for higher secondary teacher trainees. This indicates that there is need for suitable training in evaluation theory and techniques for higher secondary teacher trainees.

In an another study (please refer p.285 ) majority of the higher secondary teachers have opined that the following evaluation activities help the higher secondary teacher trainees to evaluate effectively:

1. Sampling of items.
2. Training in item analysis.
3. Types of scoring/scoring procedures.
4. Question paper preparation.
5. Designing of test/s.

These activities have been incorporated in the course outline.

Considering the evidences presented in the previous section, it is clear that there is need for a course in evaluation for higher secondary teachers. Recognising this need, the course on educational evaluation has been designed. The course outline and practical activities are presented in the Section 6.6.5.

The course outline has been quite comprehensive and tries to include almost all the essential elements required for the higher secondary teacher trainees. The practical activities provide some experience to the teacher trainee to appreciate the principles of evaluation and to recognise the principles and needs of higher secondary students. The knowledge of the principles of evaluation, techniques and tools of evaluation helps the trainee to apply the same in practical situations in schools while undergoing the practicum phase of the teacher education programme.

#### 6.4.1.1.2 SPECIAL COURSE

Special course is one of the important sub-component in the pedagogical theory. The special course provides the required knowledge and skills to the prospective teacher to function effectively in the school system. The mastery of the content and strengthening of the repertoire of skills are very essential for a teacher. The higher secondary teacher needs more depth in the knowledge of his subject (specialization) for the differentiation of the subject takes place at the higher secondary level. Further, he has to equip himself with the relevant teaching strategies and approaches. The method of teaching has close relation

with the content area. Some teacher educators are of the view that content and methodology should be seen in an integrated way. In a national seminar on teacher education, teacher educators have recommended that "The method courses should always be taught in the context of content. Methods should not only be determined by the content but also by the objectives and styles" <sup>5</sup>. However, other teacher educators advocate that knowledge of methods of teaching should be provided to the prospective teachers and freedom should be given to the prospective teachers to use the appropriate methodology suitable for different teaching situations. The investigator examined whether the special methods provided in the B.Ed. programme is meeting the needs of higher secondary teachers. In the study, majority of the teacher educators think that the special methods given in B.Ed. programme is not meeting the needs of higher secondary teachers. It implies that there is need for developing special methods course relevant to the needs of higher secondary teachers (please refer P.285).

The special course consists of three courses:

Course 6 : Method of Teaching Science/Commerce/  
Social Sciences/Languages/Mathematics.

Course 7 : Method of Teaching special subject :  
Chemistry/Physics/Mathematics/History/  
Economics/Accountancy, etc.

Course 8 : Content subjects.

The method courses (course 6 and 7) should be studied in relation to the content subjects (course 8). The teacher trainees should be able to understand and appreciate the structure of the content and develop an ability to decide an appropriate teaching strategy considering the teaching situation.

Course 6 : Method of Teaching Science/Commerce/  
Social Science/Languages/Mathematics.

The purpose of this method course is to examine the different techniques of teaching relevant to the teaching of broad interdisciplinary areas like Science, Commerce, Social Science, Mathematics and Languages. This course tries to provide the required link between the conceptual schemes of related disciplines and further, it gives a broader framework for the higher secondary teacher to understand the place of the subject of his specialization and the related disciplines. This also provides an opportunity for the teacher to integrate the different conceptual schemes to understand the organization of the nature. Moreover, the higher secondary teacher will be able to understand the strengths and the limitations of the different approaches of teaching in relation to the structure of the content area to be taught.

METHOD OF TEACHING SCIENCE

This method course could be further sub-classified into Method of Teaching Natural Science and Method of Teaching Physical Science. Here, in each of the sub-classes, relevant interdisciplinary issues, methods and strategies could be discussed.

This course purports to provide an understanding of science teaching and to develop the methods, approaches and techniques relevant to the teaching of science.

Although it could be assumed that many of the teacher trainees would have already mastered the laboratory skills in their master's degree course in science, an attempt here

has been made by providing certain practical activities to give them continuity of experiences. It has been suggested that a science teacher trainee has to undergo two weeks of apprenticeship with a science laboratory co-ordinator and conduct atleast four laboratory classes. This experience provides a science teacher trainee an awareness regarding the problems related with laboratory setting.

The method of teaching science thus provides a broad framework for higher secondary science teacher to assimilate the theoretical as well as practical aspects in the course. Further, the higher secondary teacher has to try to relate the method of teaching science (course 6) with the method of teaching special subject : physics, chemistry, etc. The method of teaching science provides a background and covers general aspects of the methodology of science teaching. The method of teaching special subject has to be studied on the edifice of the method of teaching science. The method of teaching special subject : physics, chemistry etc. tries to provide deeper knowledge about the content aspects and relates the content with the methodology of teaching special subject. Therefore, course 6 i.e., Method of teaching science is complementary to course 7 i.e., method of teaching special subjects, physics/chemistry, etc.

#### METHOD OF TEACHING COMMERCE

It is a composite and general method course for commercial subjects. The purposes of this method course are to provide an understanding of the objectives of teaching commercial subjects, to develop skill to select and apply different methods and approaches to teach commercial subjects like accountancy, banking, commercial mathematics (business



mathematics), book-keeping. The method tries to develop in teacher trainees an understanding about the relationship between the different commercial subjects and the need for interdisciplinary approach. With the help of this course the teacher trainee would be able to understand the general principles governing the commercial subjects. Moreover, he will be able to recognise the similarities and differences in the conceptual schemes, methodology, and evaluation in different commercial subjects.

The course consists of two parts. They are course outline and practical activities. For further details please refer Section 6.6.6.1. The practical activities are integral part of the course. An attempt should be made in this course to provide as many practical activities as possible for the teacher trainees to realize the importance of principles studied in the course outline. This helps him to understand the structure of the commercial subjects and appreciate the applications of the principles in commercial operations in the daily life situations. The teacher trainee has to understand the relationship between the course 6 i.e., method of teaching commerce and course 8 i.e., content subject/s.

#### METHOD OF TEACHING SOCIAL SCIENCES

This method purports to provide the knowledge about the place and importance of social sciences at higher secondary school level. It helps the trainee to understand the aims and objectives of teaching social sciences and to develop the methods, approaches, techniques relevant to the teaching of social sciences. By studying this course, the trainee develops a democratic attitude and imbibes the national values into his personal value system.

This enables the higher secondary teacher to inculcate in the students the spirit of democracy, social co-existence and national integration ; with the help of this course the trainee will be able to understand the relationship between different social science disciplines and realize the need for interdisciplinary approach.

The course consists of two parts. They are : The course outline which forms the theoretical part and the practical activities - which tries to provide opportunity for the trainee to understand the application of principles of social sciences in daily life situations. The details are provided in Section 6.6.6.2. The experts in social sciences and teachers could think of more activities on similar lines to give a practical bias to the teaching of social science methodology.

This course lays a sound foundation for the higher secondary teacher trainees to launch into the specialized study of their interest area in the course 7 i.e., the method of teaching special subjects.

The social sciences consist of the following disciplines : History, Geography, Economics, Psychology, Sociology and Political Science.

#### METHOD OF TEACHING LANGUAGES

The Method of Teaching Languages is an integrated course to be offered to all the language teacher trainees (compulsory) along with their special methods of teaching the particular language of their specialization.

This method course purports to provide the prospective language teacher the knowledge regarding the nature of language, its components : phonological, lexico-semantic and

syntax and its over all organisation and development. It helps the trainee to develop basic skills of language teaching and to understand the aims and objectives of teaching languages at higher secondary level. It also helps the prospective teacher to understand the universal features of various languages.

The course outline forms the theoretical part of the course and practical part constitutes the practical activities. Further details about the course are given in Section 6.6.6.3. The participation of the teacher in practical activities gives an opportunity for the teacher to reflect on the structure of the language and its organisation.

The knowledge regarding the universal features of various languages lays a sound foundation for the prospective teacher to take up the study of the specialization. (i.e., the language of their specialization). This also provides an opportunity for the prospective teacher to understand the basic difference found in various languages - in their structure and organization. e.g., the English language differs in some respect from the native languages. Further, the Dravidian languages differ from the language found in the northern India. These contrasts are very well depicted in the course, for the language teacher to understand the various aspects of language teaching and their inter relationships.

#### METHOD OF TEACHING MATHEMATICS

This method course purports to provide a broad framework for the higher secondary teacher trainee to understand the general aspects of mathematics teaching. This course helps the trainee to understand the objectives of teaching mathematics at higher secondary level and develops skills to select and apply different methods, approaches and techniques of teaching of mathematics.

The course consists of two parts. The course outline constituted the theoretical part and practical activities. The details about the course elements are provided in Section 6.6.6.4.

The experts and teachers in mathematics could think of developing more activities on the lines suggested in practical work. This provides a much needed practical orientation to the teaching of mathematics methodology.

The Course 7 : is the method of teaching special subject mathematics and would provide the necessary specialized knowledge and skills in mathematics for teaching at higher secondary level. The content subject (Course 8) mathematics provides the necessary content to teach at higher secondary level.

In this course 6 i.e., the method of teaching science/commerce/social sciences/languages and mathematics, an effort has been made to integrate the methodologies and provide a wider framework for teacher educators and higher secondary teachers to understand and practise the methods of teaching. Teacher Education Curriculum Framework prepared by National Council for Teacher Education has also recommended the interdisciplinary approach in the methods of teaching in the following words "There is need for integrating different subjects by way of developing interdisciplinary units in order to save time and to make teaching more meaningful"<sup>6</sup>.

Course 7 : Method of Teaching Special Subject :  
 Chemistry/Physics/Biological Science/  
 History/Mathematics/Economics/Accountancy etc.

In the higher secondary stage, the special subjects are offered for higher secondary students, where the student gains more depth of knowledge and understanding in specialized course content. The higher secondary teacher should have adequate knowledge of his area of specialization and he should also have the specialized knowledge i.e., the various special methods suitable for the structure of the content area of specialization. The basic assumption for introducing this course is that each discipline has its own structure and the structure of the discipline and methods are highly related. Smith (1962) has rightly pointed out this in the following words : "There is a methodology of teaching inherent in any discipline - its order, its essential relationships, its mode of conceptualizing, and the subtle ways in which its body of knowledge is increased which any beginning teacher must understand and appreciate before there are any attempts on his part to organise derivatives of this knowledge, for teaching purposes, without this, he is incompetent to teach, for he is a threat not only to the discipline but to his own students - basing his instruction in ignorance rather than on knowledge"<sup>7</sup>. The study team on teacher education in the western region has also recommended for the introduction of specialization instead of general method of teaching at secondary and higher secondary teachers' training<sup>8</sup> .

In the following sections two syllabus drafts of special subjects viz., Chemistry and Biology Methods are presented for consideration. These drafts have to be further modified in accordance with the suggestions and

comments given by the teacher educators of the concerned special subjects and content area experts.

#### METHOD OF TEACHING CHEMISTRY

This method course tries to provide the essential knowledge and skills to the chemistry teacher regarding the structure of the discipline : chemistry and special methods and strategies required to teach chemistry effectively. This method purports to provide the knowledge about the objectives of teaching chemistry at higher secondary school. This method also tries to enable the prospective chemistry teacher to develop a favourable attitude for the new innovation and advancement taking place in chemistry.

This course consists of two parts, the first part being the theoretical part forms the course outline and the second part comprises the practical activities. The details about the course elements are presented in the Section 6.6.7.1.

#### METHOD OF TEACHING BIOLOGICAL SCIENCES

This course purports to provide to the prospective teacher the basic concepts and their applicabilities and enables him to understand the objectives of teaching biological sciences. It tries to develop the ability of the teacher to use various methods, approaches, techniques and skills of teaching biological sciences.

This course consists of two parts. They are: Course outline and practical activities. The details about the course elements are presented in the Section 6.6.7.2.

The structuring of the course for the methods of teaching special subjects has to be undertaken by a group of subject and methodology experts of these subjects. The number of disciplines handled at the higher secondary level is quite large. The subject experts from the content disciplines with the collaboration of methodologists in the Departments of Education, have to devise a number of courses in this area to suit the special requirements of each subject.

Course 8 : Content Subjects.

The need for the knowledge of the content subject  
and its Importance

The content subjects provide the substance for organizing the instruction. The prospective higher secondary teacher should have a fairly sturdy grasp of the main body of knowledge - its substance and methods.

Many of the teacher educators complain that although the teacher trainees have master's degree in content area/s., they are not able to solve many instructional problems for the lack of adequate knowledge of the content. The teacher trainees in B.Ed. programme have also expressed their difficulty in understanding the concepts, sequencing the content matter and selecting appropriate strategy of instruction. This state of affairs calls for more attention to be given in teacher preparation programme for developing adequate knowledge in teacher trainees about the content structure and to delineate the relationship between the content structure and the methodology of instructions.

The increasing need for more adequate instruction in the subjects they are teaching is well illustrated by the situation in which many experienced higher secondary school teachers of science now find themselves. The teachers of other subjects also are in no way better. The rapid changes that have occurred in a number of sciences in the last few years, changes often complex, require more intensive study on the part of teachers to ensure their own comprehension of these developments. The frequent enrichment of courses at higher secondary level are forcing teachers to equip themselves with adequate comprehension of new developments in their subject of specialization. This demands for making adequate provision of new developments in their subject of specialization. This, in turn, demands for making adequate provision in teacher preparation programme for some form of systematic inquiry into the problems which relate to the selection and application of content in the development of appropriate instruction for higher secondary level.

A glance at the higher secondary school curriculum will indicate the nature of the problem faced by the prospective teacher as he deals with the derivatives of his knowledge in the formulation of instruction at this level. Nearly sixtythree different subjects are now listed as being taught in the nation's higher secondary schools<sup>9</sup>. In any one school differentiation may have progressed to the point where as many as dozen curricula are open to a student ; the average is about five.

The courses which the prospective teacher has taken in his major in many cases bear small specific reference or application to this highly differentiated programme at the higher secondary level. They offer small help, therefore



in determining objectives and appropriate content for the rather extensive array of specialized courses which are normally offered in higher secondary schools to meet the widely varying purposes and abilities of students.

Another problem a beginning teacher finds difficult to face is that the knowledge of a subject he is likely to possess as the result of his concentrated study is at an advanced stage, so advanced in fact that he finds difficulty in retracing even the steps he has taken in its acquirement as the basis for organising similar forms of instruction. Further, the specialisation at advanced study usually orient the students for research. Even when a beginning teacher is able to retrace his steps the resultant instruction may bear little relation to the demands of his classes. Another important difficulty a prospective teacher has to encounter is that the advanced course he has studied at the university may not be there as a school subject specialization at the higher secondary level. This anomalous situation is usually found in higher secondary level. Then, the prospective teacher has to be provided with a fulfilled advanced course in content of the school subject or the content area which is closely related to his previous advanced course study.

In a study the investigator tried to ascertain the content needs of the higher secondary teachers. (Please refer p. 285 ). Majority of the higher secondary teachers and teacher educators in the study have recommended the following two approaches to solve the problem of content deficiencies in the prospective higher secondary teachers.

1. Providing an advanced course in the specific subject area like physics, chemistry, history, etc., The major problems which have to be faced for providing the advanced course in training colleges are the lack of adequately qualified staff, the lack of facilities like good laboratory, library, building etc. However, this type of advanced courses could be provided when a separate teacher training institution (like the Regional College of Education) with adequate facilities are visualized for higher secondary teachers, or a few colleges which are having good facilities could be strengthened to provide the advanced courses. The other teacher training colleges which do not have adequate qualified staff and/or proper facilities can take the help of the willing staff members of the specific content area and can utilize the facilities available in science and arts colleges. In the university set up, the Faculty of Education could utilize the services of the staff of Faculty of Science/Arts/Commerce and use the laboratories in Science Departments.

2. The general components of the specific subject areas like Physics, Chemistry, History etc. should be reviewed functionally in relation to the higher secondary school curriculum.

This approach is practically feasible for training colleges. The task is justifiable in terms of need and in terms of the competence and facilities available in the training colleges. In this approach, the method of teaching should be flexible with a lot of self learning (including programmed') procedures and group work. The emphasis should be given for the complete concept analysis. Special emphasis

should be given for new contents, new approach to the discipline, new ways of pedagogical processing.

**Explanations :** This calls for team work between very high level content experts and education experts who are actually involved in such content-pedagogy inter-action and inter-disciplinary dialogue at depth. When such inter-disciplinary teams are formed, it may be possible to prepare materials which can be useful for going through on self-learning, guided learning and group work. The materials thus prepared could be utilized in the content course of the preservice training of higher secondary teachers.

6.4.1.1.3 Course 9 : SPECIAL FIELDS (For details please refer Section 6.6.8)

6.4.1.2 PRACTICUM

Practicum constitutes the second component in the model and it has to be considered along with the first component well interlinked with the theoretical aspects. This helps the teacher to :

1. Understand the theoretical principles, and
2. Translate the principles effectively into some practical teaching activity. The practical experience of teaching has become indispensable for a prospective higher secondary teacher. The practicum provides the initial experience and initiates the student teacher to the significant aspects of the teaching profession.

#### 6.4.1.2.1 SKILL BASED TRAINING IN SIMULATED MICRO-TEACHING

This forms the first component in the practicum. The skill based approach of teacher training has been gaining more ground and getting widely accepted in different training colleges in the country.

The concept of teaching as skilled performance in interpersonal influence is scarcely a new idea. Historical accounts going back to ancient times have stressed it<sup>10</sup>. But it has been only during the past decade that psychologists and educational researchers have begun systematically to study the nature, causes and effects of person-to-person skills in teaching. However, it has been well established by a number of research studies that teaching ability can be defined primarily as overt behaviours affecting the performance of others. Further, it is assumed that these skills can be systematically trained, measured and evaluated. These assumptions have been important grounds for the development of various approaches of teacher education like performance based teacher education, skill based approach of teacher education, etc.

The skill based training has been detailed out in the following sections :

A schematic representation of the skill based training is presented on page No. 322 .

1. Class-room observation : This constitutes the first step in the training programme. In this, the teacher trainee visits the actual class-room and makes his observations. The teacher trainee is directed to make systematic observation

to perceive the teaching activities as a whole. Later, the teacher educator helps the trainee to classify the observed behaviours into meaningful categories.

2. Orientation for skill based training : In the orientation the teacher educator tries to explain the definition of teaching skills as given by different psychologists and educational researches. He will analyse teaching into a number of meaningful teaching skills. Further, the teacher educator describes the different types of skills, for example, general teaching skills and disciplinary teaching skills.

The teacher educator can involve the student teachers in the discussion to arrive at meaningful sets of combination of teaching skills.

3. Presentation of a model : The model could be a well structured episode or a demonstration of a lesson. The presentation could be made through video/audio/print media. When the teacher educator is giving a demonstration, the care has to be taken in selecting relevant topics from higher secondary level such that it represents nearly the real conditions.

After the presentation of the model, the teacher educator along with the student teachers analyses the model to i) search for teaching skills it represents and (ii) to identify the pattern of combination of the teaching skills. The discussion is done after each presentation of the model (episode or demonstration) and presentation is repeated for another careful examination of skills of teaching. This discussion acts as a feedback and it helps the higher secondary teacher trainees to focus their attention on the nature and types of the teaching skills.

## EVALUATION

Evaluation has been considered in this component at two levels, with a purpose of continuously assessing the knowledge about teaching skills of student teachers and to monitor their progress.

### Evaluation<sup>1</sup>

In order to find out whether the student teachers have been able to understand the nature of teaching skills, types and their manifestation in the teaching situation, the teacher educator can give a check-list or rating scale consisting of teaching episodes to student teachers. The teacher educator can ask the teacher trainees to identify different types of teaching skills and the pattern of combination of teaching skills. This activity helps the student teacher to verify his knowledge of teaching skills and it helps the teacher educator to further plan the course of the training activities.

## SIMULATED MICRO-TEACHING

This forms one of the important phases of the training. It has been found that the simulated experiences provided before the actual classroom teaching has helped the student teachers in developing the self confidence in teaching and improving their teaching skills. The simulation technique has found wide acceptance in the teacher education colleges. Simulation involves a learner in active participation in a situation modelled on a real-life problem. The problem is normally one that involves the learner in a decision making situation which encourages the learner to think and act upon the particular strategy he selects to use to solve the problem.

In the present programme, the simulated activities are to be seen as a means for making the theoretical aspects of the teacher education programme more relevant to the practical issues. It should be seen as an integrating factor between theoretical and practical components in the programme. Through these simulated experiences, the students would be able to take "abstract" theories and apply them in practical situations. Peer teaching forms the simulated practice session and further micro-teaching which is a form of simulation is also used for further training in skills.

#### PEER TEACHING :

In the previous step (presentation of the model) the higher secondary teacher trainee was presented with a model to identify and classify the teaching skills. In peer teaching, the teacher trainees develop some episodes based on one or more skills and each trainee presents an episode. A few of the trainees act as students and other trainees observe the teaching to record systematically the teaching skills used. Further, the teacher educator along with the teacher trainees discuss the appropriateness of the teaching skills and their manifestation. The feedback is provided to the teacher trainee immediately so that he can improve his performance in the next presentation.

Micro-teaching as a form of simulated training has been extensively studied and widely adopted (Gage 1978). The micro-teaching is essentially scaled down teaching situation in which the time span of the lesson and the number of pupils involved has been reduced. Usually, a lesson or a concept which lasts about ten minutes with a

class size of about six students, are the form of arranging micro-teaching session. However, lessons of longer duration and groups of about 12 students are still found to be manageable forms of arranging micro-teaching experiences.

This scaling down of the teaching situation enables teachers to be less concerned with subject content and problems created by large instructional groups. They are then able to focus more intensively on teaching processes. In particular, the micro-teaching situation becomes very suitable for concentrating on a specific teaching skill allowing for the discussion of the theoretical basis of a skill, its application in a teaching situation by the student teacher and the review of its use by the teacher in a feedback session. This has been schematically presented on the page No. ~~322~~<sup>2</sup>. If the student teacher has any instructional problems, he may discuss the problem with the teacher educator and decide the appropriate strategy of teaching. (He may reteach if necessary).

Evaluation<sup>2</sup> : The teacher educator may give a check list of critical incidents (after the micro-teaching-practice) to the student teacher to identify the different skills of teaching and selection of appropriate skills to teach a particular concept. The teacher educator may also give a situation test. This testing helps the teacher educator to understand the progress of students in learning the skills of teaching. The student teacher gets an opportunity in working on this test, to review his knowledge of teaching skills. The teacher educator while assessing the effectiveness of the programme has to take into consideration, the observation records of student teachers as well as the performance on the situation test or check-list of critical incidents.



#### 6.4.1.2.2 FIELD EXPERIENCES (CLINICAL EXPERIENCES)

The student teachers, after the completion of simulated micro-teaching programme have to undergo field experiences in order to gain some insight into the conditions under which the higher secondary teacher has to function. It also helps the student teachers in evolving effective strategies to understand the needs of students.

The field experiences serve several purposes :

- 1) Bring to life the content taught in the professional education courses making it more meaningful.
- 2) Permit the student teacher to observe education from the teacher's side of the desk ;
- 3) Gain a better understanding of the teaching learning process; and,
- 4) Become more aware of learners as individuals with unique qualities and behaviours.

The field experiences have been classified into the following four types of activities:

Activity 1 : This activity helps the student teacher in understanding the needs of the higher secondary students. When the teacher trainee interacts freely with the students, he will be able to understand the perceptions of students of their teacher. The regular discussion with the co-operating teacher (regular teacher in the school, who has been helping the student teacher by providing the necessary guidance) and the teacher educator/s in the college of education helps the trainees in perceiving the needs of the students in a proper perspective.

**ACTIVITY 1 : UNDERSTANDING NEEDS OF PUPILS :** Each trainee should be allowed to visit a Higher Secondary School. The trainee has to adopt a few students and interact with them about the instructional activities. He should try to develop close contact, play with them and share their experiences. He may take up some activities of the regular teacher and carry out the same as though he is the actual teacher. The higher secondary teacher trainee may discuss with the regular teacher in the school about the instructional setting. The student teacher has to report these experiences to the teacher educator and seek his guidance.

**Activity 2 :** Understanding the children with special abilities and the slow learners.

This activity helps the higher secondary teacher trainee to understand the behaviour pattern of higher secondary students with special abilities. The trainee will also learn as to how to provide support materials or enriched materials for these pupils. The trainee will be able to understand the learning difficulties of slow learners and think of appropriate strategy to bring them to the main stream. The trainee may consult teacher educator and co-operating teacher whenever he feels that some thing needs to be explained. This activity helps the trainee in making realistic assessment of needs of the higher secondary students. Further, it also helps him in planning his instructional strategy.

**ACTIVITY 2 : UNDERSTANDING THE CHILDREN WITH  
SPECIAL ABILITY AND SLOW LEARNERS**

The student teacher has to identify two children with special abilities and two children who are slow learners. He has to make continuous systematic observations of their behaviour and prepare supporting materials. For this purpose, the higher secondary teacher trainee may consult the concerned teacher educator, the trainee should also prepare a report on this activity and discuss the same with the teacher educator.

**Activity 3 : Understanding the teacher's behaviour pattern.**

This activity helps the teacher trainee to understand the role of the teacher in a higher secondary school. The classroom observations helps the teacher trainee in understanding the strategies followed in regular class-room teaching. The reporting of the experiences to the teacher educator and further discussion helps the teacher trainee in getting a clear picture of the class-room.

**ACTIVITY 3 : UNDERSTANDING THE TEACHER'S BEHAVIOUR  
PATTERN**

The student teachers should visit a higher secondary school and observe all the activities of two teachers and prepare a report. The teacher trainee has to identify the similarities and differences in behaviours and try to locate the emerging pattern of behaviour. The trainee should write a critique of his observations. The teacher trainee may discuss with the teacher educator about the observation.

**Activity 4 : Participating in co-curricular activities to further develop leadership qualities.**

The participation of student teacher in the cocurricular activities will help him to become familiar with the different student activities in the school. It also helps the teacher trainee in understanding the different aspects of organising the co-curricular activities. These activities further help the teacher trainee in recognising the attributes required for a leader.

**ACTIVITY 4 : PARTICIPATING IN CO-CURRICULAR ACTIVITIES  
TO FURTHER DEVELOP LEADERSHIP QUALITIES**

The student teacher should participate in the student activities in the school, e.g., Debate, Sports and Games, Science Club Activities, N.S.S. Activities, Social Service Activities, etc.

This activity (activity No.4) has to be seen in relation with the co-curricular activities component in the pre-service teacher education programme.

After undergoing all the field experiences, the student teacher begins his pre-internship programme.

#### **6.4.1.2.3 INTERNSHIP PROGRAMME**

This is a school based programme which provides the student teacher with the relevant practical experience. This programme has four sub-components. The first sub-component constitutes the pre-internship programme; second: the regular teaching practice; third: the observation of lessons, and the fourth: participation in school activities.

OBSERVATION OF LESSONS : This forms the first step in the pre-internship programme. In this, the student teachers observe the actual classroom teaching and try to record systematically the interaction in the class room. With the help of the knowledge of teaching skills, student teachers will be able to see the interplay of skills in the classroom interaction.

#### PLANNING OF SKILL BASED LESSONS

In recent years, teachers training programmes have tried to concentrate on teacher's cognition of the different techniques of teaching and his ability to use a set of skills in proper combinations to achieve his objective. This calls for a teacher to develop the ability to understand the context, and to take appropriate decisions to use a particular combination of skills. A gradual acquisition of knowledge regarding the relative effectiveness of different combinations of teaching skills and the effectiveness of the teaching. The decision of the teacher to use a particular pattern is guided by the factors like the content matter being taught (nature of the content), the level of the pupils, the facilities available in the institution, etc.

In this context, the teacher trainees are asked to plan lessons based on a set of skills (keeping in view the meaningfulness of the combination). The teacher educator helps the teacher trainees in translating the set of skills into the lesson planning. The student teacher focussing his attention on the set of skills he is trying to master, teaches the lesson. The student teacher has to take all precautions, and he has to be flexible in his approach, i.e., in the classroom condition, if the change of sequence of skills or combination of skills are required, he may immediately take decision and teach. The other teacher

trainees observe the teaching and record their observations in a proforma. After the teaching is over, the lesson is analysed with the help of teacher-educator and peers. The supervisor and the trainees discuss the appropriateness of selection of skills, their use and the sequence in which the skills was presented, this feedback helps the teacher trainee to improve his strategy to suit the classroom conditions.

#### PLANNING OF THE REGULAR LESSON WITH WHOLISTIC PERSPECTIVE

The teacher trainee plans a regular lesson taking into consideration all the class-room contingencies and under the guidance of a supervisor. He tries to get at a scheme of teaching. The teacher trainee teaches the lesson. The other trainees observe the teaching and record their observations systematically on a proforma. After the teaching is over, the supervisor along with the other trainees analyse the lesson and discuss about the strengths and weakness of the lesson. Further, they try to suggest to improve the strategy of teaching. The student teacher considers this feedback and revises his lesson plan and reteaches the lesson in the regular class-room. This cycle is carried out for a long period (say three to four months). This sub-component provides the student teacher opportunity to experiment with new ideas and build his repertoire of skills. The student teacher has to reflect on his lessons to improve his lessons further. The student teacher tries to develop his style of teaching in the internship programme.

## OBSERVATION OF OTHER'S LESSON AND CRITIQUE

This sub-component is closely related with the teaching of lessons. In this sub-component, the student teacher observes the teaching of other trainees with the help of a proforma and later tries to analyse the lessons to look for better representation of different skills and the consideration of different contingencies in the classroom. By observing different patterns of teaching, the student teacher understands the relative advantage of using a particular pattern of teaching. This helps him in evolving his own style of teaching under real conditions. This observation also helps the trainee to learn to criticise other's lessons in a constructive way.

## PARTICIPATION IN ACTIVITIES OF SCHOOL

In this sub-component the student teacher tries to participate in all the activities of the school as a regular teacher would do. He tries to take up different roles of the teacher and examine the relative effect of these activities on his own behaviour pattern. The active participation of the student teacher in these activities helps him to understand the relationship between theory courses and school practices. The internship programme has been schematically represented on page No. .

## 6.4.1.3 CO-CURRICULAR ACTIVITIES

Co-curricular activities form an important component in the Higher Secondary Pre-service Teacher Education Programme. The co-curricular activities have been

introduced as a paper in the special fields. This has been done with a view that the student teachers who have special interest in acquiring more theoretical knowledge about the co-curricular activities, should have easy access to the knowledge. The practical activities which form the course 'co-curricular activities' are compulsory for all the teacher trainees. An illustrative list of activities has been presented on page 335 . Each trainee has to participate in as many co-curricular activities as possible. The participation in co-curricular activities in teacher education institution as well as in practising school helps the student teacher in many ways. It provides opportunities for the student teacher to develop leadership qualities. It helps him in developing certain qualities like co-operation, empathy, etc., This also provides an opportunity for the student teacher to give expression to his talents. The active participation in co-curricular activities and experience in organising the co-curricular activities helps the student teacher in organising similar activities when he becomes a regular teacher in a higher secondary school.

#### CO-CURRICULAR ACTIVITIES

1. ORGANISING LITERARY ACTIVITIES: Debates, Drama, Essay writing, Competition, etc.
2. ORGANISING SCIENCE ACTIVITIES : Organising Science Club, Science Fair, Setting up new experiments, Studying Scientific problems etc.
3. Organising Lectures of Experts.
4. Observation of some special day for Example : Gandhi Jayanti, Independence Day, Republic Day.
5. Organising Field trips, Excursion, Visits to Museum, Laboratory or any place of Educational interest.
6. Organising sports and games and assisting the Physical Education Director.
7. Maintaining Bulletin Board, Publishing school news letter.



#### 6.4.1.4 PROJECT WORK

This is the last component in the Higher Secondary Pre-service Teacher Education Programme. This has been introduced with a view to develop sensitivity in the higher secondary teacher to the educational problems and to equip him with the scientific methodology to solve the educational problems.

The higher secondary teacher trainee has to take up a small project and study the problem systematically with the help of the supervisor.

The project work helps the higher secondary teacher trainee in developing the following aspects.

1. It helps the student teacher to become sensitive to educational problems.
2. It provides the trainee an opportunity to work independently on an educational problem.
3. It trains the student teacher in collecting data systematically and preparing report.
4. It develops a positive attitude in the teacher trainee about the educational studies.
5. The teacher trainee develops a broader outlook and constantly evaluates his own way of teaching and strives to improve his presentation.

As the higher secondary teacher has to take up the important function of laying the foundation for the study of different special subjects for higher secondary students, the acquaintance of independent modes of inquiry and a positive attitude to the research findings on the part of

the teacher helps the prospective higher secondary teacher to use more and more research findings in the teaching of the subject matter. Further, it helps the higher secondary teacher to approach the educational problems in a scientific way.

#### 6.4.2 IN-SERVICE TEACHER EDUCATION PROGRAMME

##### 6.4.2.1 INTRODUCTION

The unprecedented growth of knowledge, the new developments in pedagogy, new curricula and developments in educational technology, new changes in the school structure, acceptance of the need for providing for individual differences make it imperative to reorient the teacher, already trained. The inservice education seems to be the answer for this problem. As the higher secondary teachers have to lay foundation for higher education, it is very essential that they are aware of the new developments taking place in their field.

It is therefore visualised here that the pre-service education programme is the initial programme given to a teacher to initiate him into the fundamental professional competencies. The in-service programme is an integral part of the Higher Secondary Teacher Education programme, which tries to ensure continuous professional growth of the higher secondary teacher. The in-service teacher education programme may be of different forms and it may be organised periodically or arranged as the need is felt. The in-service teacher education programme, is usually of short duration and it is given throughout the teaching career.

The assessment of teacher's needs before undertaking or even designing in-service training programme is a necessary step towards maximising the effective utilization of human and material resources with a minimum cost. A number of in-service training programme fail because in-service training effort do not match training needs of the teacher.

Realising this vital need the investigator conducted a survey (through questionnaire and interviews) to study the in-service training programmes organised for secondary and higher secondary teachers. The sample for the study constituted all the co-ordinators of extension services departments, continuing education centres in Gujarat state and the co-ordinators of extension services departments of all the four regional colleges of education (Mysore, Bhubaneswar, Bhopal and Ajmer). The opinions of co-ordinators were collected about the in-service training programmes organised for the secondary and the higher secondary teachers and the suggestions for the needed changes were recorded.

The training needs (in-service) of the secondary and the higher secondary teacher were identified through a survey. The sample in this study consisted of seventyfive teacher educators from all the secondary teacher training colleges of Gujarat state and one hundred and eightysix higher secondary teachers from the selected schools of Gujarat state.

Considering the needs identified by the above personnel an attempt here has been made to propose some in-service teacher training programmes for the secondary and the higher secondary teachers. However, these programmes have to be considered tentative and needing further research on the relative effectiveness of programme components.

#### 6.4.2.2 MAJOR ASSUMPTIONS

The following are some of the major assumptions on which the in-service education programme is based:

1. It is impossible to conceive of pupil growth without teacher growth. The teaching profession cannot become or remain vital, dynamic and adjusting entity without the people involved continually expanding both their understanding and effectiveness.
2. Maximum pupil growth is correlated with effective teacher growth.
3. All attempts to improve education through the provision of better facilities, better programmes and better teaching aids can prove effective only if the teacher is kept professionally alert and academically sound.
4. Teacher education is a life long process.
5. It is always possible for a practising teacher to become a better teacher.

#### 6.4.2.3 OBJECTIVES

The following are the objectives of the In-service Teacher Education Programme.

1. To develop in the in-service teachers professional knowledge, attitudes and skills necessary for higher secondary school teaching in their own environment.
2. To make the in-service teachers apply the knowledge, attitudes and skills learned during training in their day-to-day teaching.

3. To extend the service of the expertise available in the institution for assisting schools in solving their problems.
4. To help the participants of in-service education to understand and solve various problems concerning school education and its practices through their participation in the in-service training courses.

These objectives are general objectives governing the entire in-service teacher education programme. However, each specific training programme will have its own programme objectives. These general objectives subsume the specific programme objectives and they provide direction to the specific programme objectives.

#### 6.4.2.4 IN-SERVICE TEACHER EDUCATION PROGRAMMES

The in-service training programmes have been discussed in the following sections under five heads viz., curriculum development programmes, up-grading programmes, remedial programmes, programmes for special needs, instructional leadership programmes.

The orientation programme itself has to be organised in the forms of seminars, group discussions, symposia, etc. so that the teachers can see the scope of using these methods in their actual classroom teaching. The need for the use of different methods of teaching at higher secondary level is widely felt. Therefore, the higher secondary teachers have to learn various methods of presentation.

##### 6.4.2.4.1 CURRICULUM DEVELOPMENT PROGRAMMES

These programmes are intended to train the secondary and higher secondary teachers to handle new curricula

and methods or acquire skills and pedagogical knowledge required for the new teaching roles. These programmes also provide an opportunity for the secondary and the higher secondary teachers to design new courses, instructional materials, modules, hand books, work books, laboratory manual, etc.

#### MODE OF TRAINING :

1. Seminar : This is a well known method of organising the in-service programme. This provides an opportunity for the higher secondary teacher to think about the substantive and methodological issues. Further, the teacher can share his ideas with other higher secondary teachers and experts in different fields. The higher secondary teacher also learns about various innovations that has taken place in different regions of the country. As the participants in the seminar are comparatively experienced teachers, greater professional growth will be effected through cross-fertilization of ideas providing opportunities for mutual interchange of other's experience, under the general direction and co-ordination of the resource persons. The seminars provide a stimulating academic climate where free discussion, analysing, summing up, explaining or elucidating or evaluation of experiences are made possible.

The seminars have to be organised on relevant themes on a continuing basis. A minimum of three seminars per year may set the pace for organising more and more number of seminars by different institutions.

2.     **Projects** : The teachers can plan out individual or group project/s on various aspects of teaching and see the effectiveness of these planned projects through teaching the actual class. The project may be of short duration or a detailed study of different stages with a developmental approach. The higher secondary teachers have to be trained well in the various processes involved in designing the project, carrying out the project and evaluating the project.

3.     **Workshop** : It may be organised to make the teachers exercise in thinking out specific points of relevance in teaching. For example, they may work out schemes of presenting a topic by identifying different components (teaching behaviours) to be included in the scheme as also the evaluation procedures essentially required in view of the objectives of presentation.

The teachers may do certain activities in the workshop like syllabus revision, preparing instructional materials, preparing test items, developing handbook or manual. The workshop helps the higher secondary teachers to collectively work on conceptual things to produce concrete materials required for instruction and evaluation.

The higher secondary teachers can also design some modules for higher secondary students. The workshop gives scope for the higher secondary teachers to pool their resources and to get opinions of the other teachers on the material developed.

4.     **Symposia** : Symposia on different aspects of teaching behaviour and teacher's functions at secondary and higher secondary levels of education can be organised to bring to focus the important issues that is relevant for the professional growth of the higher secondary teacher.

5.     **Summer Course** : When a completely new curriculum is to be introduced, a group of secondary and higher secondary teachers can be sent to a intensive summer course dealing with the content or method, e.g., introducing of new mathematics, or introducing computer education. These teachers then return to orient their colleagues in the material and methods - sort of "each one-teach-one" programme at the professional level. The summer course may be of two to three months duration.

6.     **Innovative programme/s** : The higher secondary teachers should be trained through in-service programmes emphasising teaching students how to inquire, to think, to organise facts and ideas and apply them to real life not just to memorize facts. Fenton, a history professor at Carnegie Institute of Technology, recently pointed out that the total quantity of known knowledge is doubling every ten years. Only the student who knows how to inquire can cope with this knowledge explosion. Unless a student learns how to seek, find new knowledge, and correct past misconceptions, he will be unprepared for the future.

#### 6.4.2.4.2 UP-GRADING PROGRAMMES

These programmes are intended to keep the secondary and higher secondary teachers abreast of new advances in knowledge in their specific specialisation.



- i) Refresher Course : The refresher course should introduce the higher secondary teacher to the new developments that has taken place in his discipline. It should also emphasize the close relationship between the content and methodology. This course has to be provided on a regular and continuing basis. It may be provided after every two years. The course may be run during vacations, in the mornings and evenings or at the week ends, particularly in the institutions which are located within the reach of a large number of teachers.
- ii) Advanced Courses : These courses try to provide the latest information, challenging content, and improved methods, techniques and procedures. One of the major reasons of the failure of the inservice education programme has been the lack of challenging content and procedures of conducting the programme. The advanced courses for higher secondary teachers have, therefore, to be carefully designed, incorporating the latest information, concepts, processes and already tried out methods, modes and procedures. The higher secondary teacher should take up these courses on a voluntary basis.

The course outline may be worked out involving experts in the respective discipline. While designing these courses the experts have to take into consideration the latest trends in the field, advances in research, current problems and the emerging needs of the higher secondary teachers in relation to student aspirations for adjustment in a changing society.

iii) Correspondence Course : The higher secondary teacher can be given an opportunity to do his higher studies such as M.Phil. in his subject area of specialization through correspondence programme. This helps the teacher in improving his content knowledge as well as his teaching skills.

iv) Content enrichment programme through media : It is also possible to provide opportunities for teachers to further their education in content as well as methodology through planned, regular radio and/or television broadcasts to the secondary and higher secondary teachers. The Satellite Instructional Television Experiment (SITE) covered the primary teachers. The Massive Teacher Education Programme had also primary teachers as the target group. The University Grants Commission's Higher Education Programme is meant for university students and teachers. Therefore, there is utmost need for designing and organising specific programmes for higher secondary teachers after a survey of the needs of the higher secondary teachers in different states in India.

v) Teachers Centre : Teachers centres could be established at central places where learning facilities such as good libraries, laboratories, teaching machine, C.C.T.V. system, computerised materials, films, film strips, etc., would be made available to the higher secondary teachers.

vi) Reorientation programme : At the end of every five years, a programme of one semester duration may be given to higher secondary teachers to provide, some pedagogical theory and general methods of teaching. The

pedagogical aspects should be given in an integrated manner. The content and methods should be interwoven in such a way that the higher secondary teacher gets a total view of the structure of the discipline and the methodology relevant for the particular discipline.

The reorientation programme on the one hand ensures professional growth of the higher secondary teacher and on the other provides feedback to the teacher education system to redesign or modify the course content or methodology to make it more client oriented. This, hopefully tries to bridge the gap between the training college and the school.

#### 6.4.2.4.3 REMEDIAL PROGRAMMES

These programmes are intended to correct the deficiencies of the initial pre-service preparation or to build on the introductory experiences given in pre-service preparation.

The teacher training institutions have to take the responsibility of giving guidance, consultation service for in-service teachers. The freshly appointed teachers in the school may require some guidance and supporting services from the teacher training colleges.

The programmes organised for correcting the deficiencies of the initial pre-service preparation has to be individual oriented. i.e., the programmes should aim at correcting the deficiencies of the individual so that he can function effectively in the school system. Some of the programmes which could serve this purpose are :

1. Programmed learning material.
2. Micro-teaching.
3. Mini-course.

A mini course consists of a training manual and depends basically for its co-ordination on the presence of a course leader and on group work. In a minicourse the stress is on group interaction. Meyer (1979) has defined mini course as a fully self-contained flexible miniature course for individuals or groups usually involving a variety of media and strategies and with specific objectives achievable in a short span of time, usually a few days or less".<sup>11</sup>

The audio-tutorials as well as modules could be effectively utilized for providing remedial programmes.

However, the other forms of remedial programmes could be thought of taking into consideration the learning deficiencies of teachers and the levels of competencies required to be achieved by the teacher.

#### 6.4.2.4.4 PROGRAMMES FOR SPECIAL NEEDS

These programmes are intended to provide training opportunities which are designed for the special needs not covered adequately in pre-service programmes. Under this head the following training programmes may be considered which are crucial for the development of the nation.

1. Education of scheduled caste and scheduled tribe.
2. Non-formal education.
3. Adult and continuing Education.
4. Rural education.
5. Women's Education.
6. Environmental education.
7. Education for the handicapped people.
8. Tribal education.
9. Vocational education.
10. Education for people living in slums in urban areas.

These programmes may be organised through lectures from experts, seminars, project work, symposia, workshops and courses of study (theory). In all these programmes emphasis should be laid on the functions of higher secondary teachers towards national development programmes.

#### 6.4.2.4.5 INSTRUCTIONAL LEADERSHIP PROGRAMMES

These programmes are designed specially for those who will fulfil positions intended to provide guidance and leadership, for example, master teachers who supervise practice teaching of teachers under training (teacher educators) guide beginning teachers, Head Masters, and Supervisors.

Some national institutes are offering short term courses for administrators at different levels of education, for example, National Institute for Educational Planning and Administration (NIEPA) and N.C.E.R.T. offer courses for educational administrators, teachers, teacher educators and supervisors. However, more specific training programmes for administrators at higher secondary level of education are needed for

effective organisation of the higher secondary education. The needs of the higher secondary level administrators have to be identified through systematic inquiry and appropriate programmes have to be designed and organised.

The in-service training programmes suggested are to be taken as exemplary and it has to be further improved taking into consideration the higher secondary teachers training needs. The programmes organised should be flexible and have enriched content matter. The length of the programme may be varied according to the needs of higher secondary teachers.

#### 6.4.2.4.6 EVALUATION OF IN-SERVICE EDUCATION PROGRAMMES

The inservice teacher education programmes have to be periodically evaluated to check whether the programmes are in accordance with the stated objectives. The various forms of evaluation may be adopted for examining the effectiveness of different in-service training programmes, for example, the outcome of the seminar may be assessed on an informal basis or by using a rating scale or check list. The report of the seminar should be brought out regularly to provide feedback. The project and workshop can be evaluated on the basis of their reports and by interviewing the people involved in the work.

The refresher course, the advanced course etc. have to be evaluated periodically and redesigned up-dating the content. The opinion of the participants of these courses may be collected to determine the effectiveness of these courses.

In addition to the traditional evaluation instruments used for assessing the programmes, the following evaluation instruments may also be used : attitude scale, situation test, in-basket technique, role play, etc,

#### 6.4.3 EVALUATION : TOTAL PROGRAMME

This is an important component in the Higher Secondary Teacher Education Programme. Evaluation should be an integral component of each programme (whether it is pre-service programme or the in-service programme). Evaluation of the total programme has to be done to see whether both pre-service and in-service training programmes proposed are able to match the objectives of the higher secondary teacher education programme. The discrepancy has to be identified and feedback should be provided for further improvement of (redesigning) the higher secondary teacher education programme. This evaluation helps the programme designer to identify the shortcomings of the specific programme and try to strengthen the same with the help of additional inputs. Further, evaluation also helps to maintain the balance between different components in the teacher education programme.

#### 6.5 OPERATIONAL FEATURES

The Higher Secondary Teacher Education Programme (Pre-service) may be of two years' duration i.e., four semesters. The special feature of the programme is that the practical aspects and theoretical aspects of the programme are integrated in such a way that the higher secondary teacher undergoing the programme gets a total experience at different stages in a developmental sequence.

A tentative plan for the organisation of the courses and practicum are provided as under:

	Course No.	Name of the Course
Foundation Courses	1.	Philosophical and sociological perspectives in education and the emerging society.
	2.	Psychology of the adolescent learner
	3.	Higher secondary school organisation and management.
	4.	Strategies and approaches for higher secondary teaching and
	5.	<u>Evaluation</u>
Special Courses	6.	Method of teaching science/ commerce/humanities/languages
	7.	Method of teaching special subject (Physics, Chemistry, Botany, Accountancy etc.).
Courses	8.	Content course
	9.	Special field (Any one course out of the number of courses provided in the list) (Please refer page 392 )



SEMESTER NOS.	COURSE NOS	PRACTICUM
I	1, 2, 3, 6, 7	S.B.M.T.
II	2, 4, 5, 6, 7	S.B.M.T.
III	7, 8, 9	S.B.M.T. + Clinical Activities
IV	P.I.P., I.P. P.I.P. = Pre- Internship programme I.P. = Internship Programme	Project Work S.B.M.T. = Skill based Micro teaching

#### INTERPRETATION OF THE SCHEDULE

In the above organisational plan, it may be observed that the foundation course No.2 is provided in two semesters consecutively. This has been done with a purpose that the higher secondary teacher should have a good background of psychological foundation for better understanding of his students. The course 6 is also provided in the first two semesters to give a general background of the subject area. The course 7 is provided in the first three semesters. As the higher secondary teacher has to specialise in teaching a particular subject area, he needs a strong background of the special subject area (like physics, accountancy, economics etc.) and should have a sound knowledge of the progress made in the special subject area. For this purpose, more emphasis has to be given for the study of the special course. The skill based training is provided more emphasis in the first two semesters and in the third semester the skill based training leads to clinical activities.

The content course (course No.8) and the special field is provided in the third semester. In the third semester the higher secondary teacher trainee will be able to study the relationship between the content and the special subject area. Further, to broaden his knowledge in the general subject matter, he undergoes a course in the special field.

In the fourth semester the pre-internship programme and internship programme are organised along with the project work. One month may be allocated to the pre-internship programme and two months for the internship programme. The last month could be allocated entirely for project work. It may be observed here that three months' duration is allocated for regular teaching. This provides more opportunity for higher secondary teacher trainee to develop his competency to teach and practice.

For organising this programme, considering the array of programme components, it is suggested that it may be organised in a well established teacher training college with adequate facilities for providing enriched curricular experiences.

In each state three or four well established teacher training colleges with adequate facilities in terms of well qualified staff and resources may be selected to cater to all the higher secondary teacher trainees in different regions of the state. While selecting these colleges, care must be taken to see that it can cater to adequate number of higher secondary teacher trainees in each region of the state.

In addition to this, the Regional Colleges of Education and the Post-graduate Departments of Education in the universities can also introduce this programme for preparing higher secondary teachers.

#### 6.6.1 COURSE - I

#### PHILOSOPHICAL AND SOCIOLOGICAL PERSPECTIVES IN EDUCATION AND THE EMERGING SOCIETY

#### A - OBJECTIVES

The Student - Teacher :

1. Understands the basic concept of education and its aims and objectives in the Indian background.
2. Understands the social, political, economic religious, ideological and technological forces tending to transform the Indian Society in relation to the social goals and values and their implications for school education.
3. Identifies the problems of higher secondary school education and examines critically the possible alternative solutions.
4. Identifies the social change in the philosophical and sociological perspectives and develops favourable attitude to modernise higher secondary education.
5. Develops comprehensive constructs and concepts about the new social order reflecting desirable values and makes an effort to create necessary climate for its emergence through higher secondary education.

B - COURSE OUTLINE

- UNIT 1 : Analysis of the emerging society from the philosophical, sociological, economical and political points of view.
- UNIT 2 : Aims of Education.
1. Philosophy and education and their relationship.
  2. Education, its meaning and purposes according to Education Commission (1964-66).
- UNIT 3 : Indian Society.
1. Characteristics of Indian society, caste, culture, language, religion, social stratification.
  2. Democracy, Socialism and education.
  3. School as a social system.
- UNIT 4 : New pattern of education ( 10 + 2 + 3 )
- (i) Need, (ii) Objectives and main features
  - (iii) First ten years of schooling , Undifferentiated general education.
- The New Education Policy (1986) : (i) Need, (ii) Objectives and main features.
- UNIT 5 : Problems of secondary education, wastage stagnation.
- Problems of higher secondary education.
- i) Importance of diversification of course,
  - ii) Problems of Academic wing - location, selection of teachers, self study approach.
  - iii) Need for vocational courses at higher secondary stage.
  - iv) Recommendations of the Education Commission (1964-66) and Adiheshaiah committee report.

## UNIT 6 : Issues in Indian Education

1. Equality of educational opportunity - regional imbalances, weaker sections of the society, women and handicapped.
2. Universalisation of education.
3. Adult and continuing education, Non-formal education.
4. National and emotional integration.
5. Value education.
6. Environmental education.
7. Population explosion - its impact on education - need for man-power planning.
8. Educational wastage and stagnation.
9. Socially useful productive work.
10. Utilising community resources, mass media and other agencies of education.

**N.B. :** (The above issues are to be discussed with special reference to the role of the teacher).

C - PRACTICAL WORK

1. A study of views of persons from different sections of the society about concept of education.
2. A study of educational thoughts of one prominent educationist.
3. A comparative study of aims of education emphasised by various education commissions and committees appointed in India.

4. A study of one educational programme presented by News paper/Radio/Magazines/T.V. 357
5. A study of the activities of the higher secondary school with special reference to their relationship with the society.
6. A study of the activities of the higher secondary school with special reference to the contribution towards development of international understanding.
7. To write a report based on the collection of data of five pupils in relation to the following aspects :  
Developmental needs of pupil - educational, economic, social, cultural, health etc.
8. To write a paper on the need for a national core curriculum.

NOTE :

Here the list of practical work items provided is more illustrative than prescriptive. The teacher educators have the liberty to modify and/or add to this list according to the need in the instructional situation.

6.6.2

COURSE - 2

PSYCHOLOGY OF THE ADOLESCENT LEARNER

A - OBJECTIVES

The Student Teacher -

1. Understand the psychological principles which explains children's behaviour in terms of growth and development, learning and adjustment with special reference to the adolescent stage.

2. Develops an understanding of the problems of adolescence and the skills in handling the problem of adolescent.
3. Develop an understanding of the nature and principles of learning.
4. Develop an understanding of the individual child in terms of his abilities and motivation.

#### B - COURSE OUTLINE

UNIT - 1 Introduction to the psychology of the learner.  
The nature and scope of educational psychology.  
Contributions of psychological researches to teaching practice.

UNIT - 2 Human Growth and Development.  
Concept, importance, stages of development - developmental tasks related to different stage. Comparison of the developmental tasks, factors affecting growth and development (physical, mental, emotional and social factors), educational implications.

UNIT - 3 Development During Adolescence.  
The concept of adolescence, importance of adolescent stage, characteristics, adolescent needs and the developmental tasks of the adolescent stage, factors affecting development during adolescent, physical and sexual development, social and emotional development during adolescence - problems arising out of the same - development of group relations adjustment needs and problems.

## UNIT - 4 Mental Health

Basic needs of the individual, the process of adjustment and concept of mental health, common behavioural and adjustment problems of adolescents, teachers role in helping the adolescent to achieve better adjustment, guidance and personnel services - personal and educational.

## UNIT - 5 Learning

1. Concept of learning
2. Factors influencing learning
  - a) Learner characteristics  
physiological : maturation, sex and fatigue  
  
Psychological : Attention, readiness, motivation, ability, aptitude, interest, and other personality factors. (only brief references may be made as they will be dealt with a greater detail under the sections on motivation and individual differences),
  - b) Characteristics of learning  
material : Meaning, difficulty, length of material, organisation.
  - c) Organisation of learning process :  
contiguity, care, anticipation, reinforcement and practices.



3. Different view points on learning and their implications.
  - a) Learning by trial and error
  - b) Learning by conditioning - classical and operant,
  - c) Learning by insight-problem solving
  - d) Learning by imitation.
4. Retention - Methods of study, Learning curve.
5. Transfer of learning/training.
  - a) Identical elements theory
  - b) Gestalt theory.
6. Learning and motivation (This should be with as in continuation to the reference made under section 2(a)).
  - a) The concept of motivation and its relation to learning.
  - b) Self concept and goal setting behaviour in learning.
  - c) Intrinsic and extrinsic motivation-role of incentives in learning.
7. Individual difference and learning.
  - a) Individual difference and intelligence, aptitude, interest and other personality traits.
  - b) Identification of individual difference.
  - c) Implication for organisation of teaching - learning process.

- i) Individualized instruction
  - ii) Group teaching
  - iii) Study habits
  - iv) Self study methods.
- d) Slow and gifted learners.

Role of the teachers in satisfying  
their specific needs.

#### PRACTICAL WORK

1. To perform five experiments based on the following topics (one on each topic)
  - (a) Learning (b) Memory (c) Transfer of learning
  - (d) Attention (e) Fatigue.
2. To observe one pupil from a higher secondary school with references to any two of the following aspects :
  - (a) Study habits; (b) Behavioural problems;
  - (c) Interests; (d) Home environment; (e) Level of achievement.
3. To construct a sociogram of the pupils of a class and interpret fully.
4. To prepare case studies of three or four selected adolescents.
5. To apply different techniques of motivation and to evaluate the results.
6. To study the techniques employed by teachers to motivate the pupils.
7. To prepare supplementary reading materials for slow learners.
8. To study the self concept of students in relation to their academic achievement.

6.6.3

COURSE - 3HIGHER SECONDARY SCHOOL - ORGANISATION AND  
MANAGEMENTA - OBJECTIVES

The student teacher -

1. Understands the development of higher secondary education in India in its historical perspective.
2. Understands the structure and organisation of higher secondary education.
3. Understands the functions and structure of administrative set up at central, state and local levels.
4. Understands his role in organizing and managing school programmes.
5. Develop desirable attitudes and competency required for introduction of modern trends and innovations in higher secondary education.

B- COURSE OUTLINE

- UNIT - 1 School as an organization, school as a system - a sub-system of society, concepts of "Administration" and "management" with special reference to school.
- UNIT - 2 Development of higher education in India in its historical perspective. The present position of higher secondary school - the main aims of higher secondary education. Recommendations of (a) Secondary Education Commission, (b) Education Commission Report (1964-66), (c) Adisheshiah Committee Report on higher secondary education.

- UNIT - 3 The structure and functions of (i) the Ministry of Human Resource Development at the centre, (ii) Ministry of Education at the state level, Directorate, Secretariate, District education officer and his office, Secondary education board, Higher secondary education board, (iii) District school board, Municipal school boards.
- UNIT - 4 The Role of District Education Officer, School Management, Staff, parent-teacher association, students' council in the decision making about various school programmes.
- UNIT - 5 Education Act, Committee reports regarding, (i) Recruitment of teachers and principal, (ii) Service conditions, pay scales and promotions, (iii) Recognition of new schools, (iv) Higher secondary education board, (v) Grant-in-Aid procedures.
- UNIT - 6 Institutional planning, schedules, timetable, calender, class register, cumulative record card, teachers dairy, supervisory procedures, remedial programmes for non-normal pupils, assignment.
- UNIT - 7 Educational finance  
Budgeting, management of financial resources, Grant-in-Aid, Mobilization of community resources.
- UNIT - 8 Current Issues in Higher Secondary Education.  
Selective admission and maintenance of standard, vocationalisation of higher secondary education, equalisation of educational opportunities, student discipline and welfare, Medium of instruction, Diversification of courses and specialisation.

## UNIT - 9 Human Relations in school

Relation of teachers with principal - school climate, leadership behaviour of the principal, teacher morale, motivation of students and achievement, innovativeness of the school - inter relatedness, relation of teachers pupils, school community relations and parent teacher associations, evaluation of school with special reference to above mentioned aspects of the school.

C - PRACTICAL WORK

1. To prepare a chart of the "school government" of a higher secondary school, run on the principles of democracy.
2. To prepare a year plan of social and cultural activities of one class.
3. Conduct a survey of the organisation of different co-curricular activities, health services in five higher secondary schools and prepare a report.
4. To prepare a time-table for higher secondary classes.
5. Preparation of a school budget.
6. A study of the set-up and role of the state department of education.
7. A study of any one or more school records in three higher secondary schools.
8. A survey of the problems faced by the principal.
9. A study of physical facilities provided by a higher secondary school of a town/city.
10. A study of school - climate of one higher secondary school.

11. Study of the working of District education office, Student teachers will visit the office and observe the functioning of the whole office and prepare a report.

12. Study of the school budget with special reference to the following sources of income ;

(i) Grants, (ii) Donations, (iii) Fees, (iv) Any other.

Items of expenditure : (i) Salaries of the teaching staff, (ii) Salaries of non-teaching staff, (iii) Books, Stationery, (iv) Laboratory equipments, Apparatus, Chemicals, (v) Repairs and maintenance, (vi) Research and development, (vii) In-service education, (viii) Any other non-recurring expenditure.

13. Study of the working of the parent - teacher association and old students' association in five higher secondary schools.

14. A study of the role of teachers' association and principals association in connection with the professional growth and the welfare of the higher secondary teachers.

6.6.4

COURSE - 4

STRATEGIES AND APPROACHES FOR HIGHER SECONDARY  
TEACHING

A - OBJECTIVES

The student teacher -

1. Understands the basic theory general principles and practices of teaching.

2. Will be able to decide teaching strategies and apply them properly in class-room situation.
3. Understands the techniques of planning teaching units.
4. Understands the importance of instructional materials and uses them appropriately.
5. Will be able to develop and select suitable teaching aids for use in relation to the specific objectives.

#### B - COURSE OUTLINE

##### UNIT - 1 Teaching

The concept of teaching, theories of teaching, principles of teaching, models of teaching and their use.

##### UNIT - 2 Instructional planning.

Framing of objectives, analysis of the content to be taught : Identification of basic facts, integration of facts, Defining and clarifying concepts and ideas, arranging them in hierarchical order, identification of examples, similar to the concepts and ideas to be developed, identification of problems or situations which provide the scope for application of concepts, devising of problem or situations which will stimulate the creative thinking, analysis of the activities

to be done by the higher secondary teacher and/or students with reference to various methods, techniques and instructional materials relevant to the content.

### Lesson and unit lesson planning

The concept of a lesson plan, importance of lesson planning, developing a lesson plan. The concept of unit plan, importance of unit planning, planning of unit lesson with its components (objectives, content - analysis, activity analysis), Characteristics of a good plan.

## UNIT - 3 Skill Based Approach

Meaning, importance, development of skills through Micro-teaching, Integrating appropriate skills in teaching-learning. The following general teaching skills could be considered for training higher secondary teachers :

### Skill of -

Planning, Writing instructional objectives, analysing the content, Introducing the lesson, Explaining, Demonstration, Questioning, Illustrating with examples, Black board writing, Stimulus variation, Reinforcement, Using Audio-Visual aids, Silence and nonverbal cues, Increasing pupil participation, Giving assignment, Probing questioning, Narration, Achieving closure, Organizing discussion (Group discussion/panel discussion), designing problem situations, designing experiments, constructing test/s, administering test/s.



#### UNIT - 4 Method of teaching

General aims and objectives of higher secondary education, specific objectives in behavioural terms. Different methods of teaching in higher secondary education could be as recommended by teacher educators and higher secondary teachers :  
Lecture method, Demonstration method, Group discussion method, Seminar, Inductive - deductive method, Role play, project method, problem solving method, Assignment method, supervised study method, Team Teaching method, symposia, workshop personalized study method (self learning devices, programmed learning material, self test, Graded assignment etc.), case study method, experimental method. These methods could be used individually or in combination depending on the teaching situation.

Language, laboratories, special programme for talented and slow learners, integrated approach to teaching.

#### UNIT - 5 Instructional Technology

- a) Systematic approach to instruction analysis.
- b) Strategies for teaching (1) Inquiry (2) Expository, (3) Case study, (4) Inductive deductive approach and application.
- c) Preparation and use of suitable teaching materials and teaching aids, like teacher hand books, work books, visual-video tape, T.V. programme and simple methods of repairing of these gadgets for minor problems.
- d) multi media instruction development.

UNIT - 6 Analyzing Instruction (Teaching)

- a) Observing the teaching - learning situation
- b) Systematic observation.
- c) Uses of observation systems.
- d) Flanders interaction analysis category (FIACS) as one of the observation systems.

C - PRACTICAL WORK

1. Observation of teaching of higher secondary school teachers (minimum 5) in order to identify different teaching skills.
2. Observation of teaching of higher secondary school teachers (minimum 5) in order to analyse class-room events.
3. Giving at least two micro lessons in respect of one of the teaching skills.
4. To prepare a plan for a teaching unit.
5. To prepare instructional material like work book, laboratory manual, etc.
6. Planning different types of lessons.
7. To prepare graded assignments for a unit.
8. Preparing and using different audio-visual aids.
9. Planning to teach by different methods and approaches of class-room teaching.
10. To use any one of the models of teaching to teach a lesson and write a introspective report.

11. To plan an investigatory project or experiment.
12. To prepare a tape script for a lesson.
13. Lessons based on slides and film strips could be developed.
14. To solve class-room situation problems provide a check list to student teachers and they have to hypothesize and answer.

6.6.5

COURSE - 5

EDUCATIONAL EVALUATION

A - OBJECTIVES

The student teacher -

1. Understands the place and role of evaluation in the teaching - learning process and the implications of various techniques and tools of evaluation for the assessment of educational growth at the level of higher secondary education.
2. Develops the ability to select and use the most appropriate techniques and tools for the assessment of student behaviour in relation to the stated objectives in different situations.
3. Develops the ability to interpret the students results to guide in the learning.
4. Develops certain skills of evaluation for example stating objectives in behavioural terms, preparing blue prints for tests, developing unit tests, etc.
5. Develops favourable attitude to the modern developments in evaluation technique and measurement and uses them appropriately in evaluating the performance of the higher secondary students.

B - COURSE OUTLINE

- UNIT - 1 Evaluation and measurement.  
The concept of evaluation, its relationship with measurement, types of evaluation - summative and formative evaluation its place in the teaching learning process, uses of evaluation.
- UNIT - 2 Objectives and Evaluation.  
Educational objectives, relationship between educational objectives, learning experiences and learning outcomes, steps in the process of evaluation, major techniques of evaluation, reporting evaluation results.
- UNIT - 3 Techniques and tools of evaluation and their uses.
- Tests : Teacher made tests - characteristics,  
Standardised tests - characteristics, designing of test, diagnostic tests, performance, tests, oral test, paper - pencil test, norm and criterion referenced tests, rating scale, check list, Anecdotal records, sociometric technique, interview, questionnaire and inventory.
- Techniques - Critical study of written examination, sociometry assignments, discussion groups, seminars, supervised study, discussion, selection of suitable techniques for specific purposes.

Construction of test items : Essay type questions, short answer type questions, and objective type test items, Different types of objective tests, their characteristics, advantage and disadvantage. Concept of a good question paper and its preparation along with its design and the blue print.

- UNIT - 4    Essential characteristics of a good instrument of evaluation.  
Validity, reliability, objectivity, Interdependence of validity, reliability and objectivity, usability and other characteristics.
- UNIT - 5    Analysis and interpretation of results.  
Scoring of answer papers, item analysis - difficulty value and discriminative value, frequency distribution, graphical representations of grouped data, percentile and percentile rank, measures of central tendency, measures of variability, Fundamental idea of standard scores.  
Importance, computation and interpretation of coefficient of correlation characteristics of normal probability curve.

#### C - PRACTICAL WORK

1.    Preparation of a good question paper.
2.    To analyse critically two question papers and rewrite the items.
3.    Preparation of achievement test covering atleast five units of one of the subjects in higher secondary school.

4. Administers test to the higher secondary section and give the statistical interpretation of results.
5. To prepare objective type of test,
6. To interview two higher secondary teachers about the problems of evaluation and prepare a report.
7. To prepare a sociogram of a higher secondary class-room and interpret it fully.
8. To prepare a paper on the topic of your choice and present the same in a seminar.
9. To organise a small discussion group and discuss a few academic issues - prepare a report.
10. To prepare an assignment for higher secondary students.

6.6.6.1

COURSE - 6

METHOD OF TEACHING COMMERCE

A - OBJECTIVES

The student teacher will be able to -

1. Understand the objectives of teaching commercial subjects.
2. Develops skill to select and apply different methods and approaches to teach commercial subjects.
3. Develops skill in preparing and using different teaching aids.
4. Develops competence in the preparation and use of various tools of evaluation.

5. Understand the relationship between the different commercial subjects and the need for interdisciplinary approach.

#### B - COURSE OUTLINE

- UNIT - 1 The place and importance of commercial subjects

The place and importance of commercial subjects in the higher secondary school curriculum.

- UNIT - 2 Aims and objectives of teaching commercial subjects.

- UNIT - 3 Planning of instruction in commercial subjects.

Content analysis, Lesson planning, unit planning.

- UNIT - 4 Methods and Approaches of teaching commercial subjects.

Approaches : The historical approach, seminar, project, cost study approach, the problem solving.

Methods : Lecture, discussion, problem solving, project, assignment, demonstration, business games, role play, team teaching, case-study method, analytic synthetic, inductive deductive method, self study method.

- UNIT - 5 Aids of teaching commercial subjects.

Text book, work book, films, film strips,

slides, radio, T.V. Video-tapes, tape recorder, charts, journals, tables, literature of Insurance Companies, Banks, Co-operative societies etc.,

- UNIT - 6 Evaluation in commercial subjects.  
Preparation and use of tests - achievement tests, teacher made test, standardized test, diagnostic testing, remedial teaching, drill and review work, Framing of different types of questions, objective, essay and short answer type, preparation of a blue print.
- UNIT - 7 Intra and inter disciplinarity in commercial subjects.  
  
The relationship between different commercial subjects. Inter disciplinary approach in commercial subjects.
- UNIT - 8 Research and its application in the teaching of commercial subjects.

#### C - PRACTICAL ACTIVITIES

1. To visit any one of the following institution and study the commercial activities and prepare a report:  
Bank, Insurance Company, Co-operative Society, Dairy, Post-Office.
2. To prepare a business game.
3. To prepare a teaching aid of their choice.
4. The students have to visit a commercial organisation and study the activities under the guidance of an Officer for two weeks and prepare a report.



5. To review the content in the commercial subjects at higher secondary level i.e. Accountancy, Commerce, Book-keeping, Business Mathematics.
6. To prepare an assignment for eg. study the historical development of a bank.
7. To make a small market survey and submit a report.
8. To meet an officer in a commercial establishment and interview to ascertain the working procedures and problems associated with the business.
9. Each trainee should present atleast two papers in a seminar.

6.6.6.2

COURSE - 6

METHOD OF TEACHING SOCIAL SCIENCES

A - OBJECTIVES

To enable the student teacher to -

1. Understand the place and importance of social sciences at the higher secondary school level.
2. Understand the aims and objectives of teaching social sciences at higher secondary level.
3. Understand and use various methods aids, techniques of teaching social sciences.
4. Inculcate in the students the spirit of democracy, social co-existence, and national integration.
5. Develop competence in the preparation and use of various tools of evaluation.
6. Understand the relationship between different social science discipline and the need for interdisciplinary approach.

- UNIT - 1 Meaning, Nature and scope of social sciences.  
Place and importance of social sciences  
in higher secondary school curriculum.
- UNIT - 2 Aims and objectives of teaching social  
sciences and their specification.
- UNIT - 3 Models of teaching, their application to  
teaching of social sciences.
- UNIT - 4 Planning Instruction  
Content analysis, planning of a lesson,  
unit planning in social sciences.
- UNIT - 5 Methods and Techniques of Teaching.  
Discussion method, inductive - deductive  
method, project method, problem solving  
method, seminar method, supervised study,  
personalized instruction, comparative method,  
dramatization, field study method, assignment  
method, biographic method, lecture  
method, programmed instruction, team teaching,  
case study method, questioning, narration,  
references, role play, simulation.
- UNIT - 6 Teaching aids -  
Charts, maps, graphs, pictures, films,  
film strips, slides, epidiascope, models,  
over head projector, tape recorder, radio,  
T.V, Video-tapes, inscriptions, coins, stamps,  
books, journals.
- UNIT - 7 Evaluation of Instruction  
Concept of evaluation, construction and  
administration of tests, achievement test,  
unit test, assessment of theory and practical  
work. The need for qualitative methods of  
assessment, construction of question paper.

- UNIT - 8 The inter-relation between different social sciences and the need for inter-disciplinary approach.
- UNIT - 9 Social science activities.  
Social science club, exhibition, field trips, debates, museum, drawing maps, reading maps, excursion, tours.
- UNIT - 10 Research and its application to the teaching of social sciences.

#### C - PRACTICAL ACTIVITIES

1. To prepare a teaching aid for eg: Prepare a time chart.
2. Drawing maps, Reading maps.
3. Preparing pictorial illustrations, albums, models.
4. Collecting stamps, coins and articles for museum.
5. Preparing assignments and tests in social sciences and using them in classroom teaching.
6. Preparing different types of lesson plans for teaching through different techniques, approaches and methods.
7. A community survey of the socio-economic problems.
8. Writing a script for radio programme or tape recording.
9. To review the syllabus at higher secondary stage for social science subjects.

6.6.63

COURSE - 6METHOD OF TEACHING LANGUAGESA - OBJECTIVES

To enable the student teacher to -

1. Understand the aims and objectives of teaching languages at higher secondary level.
2. Understand the nature of language: Its components phonological, lexico-semantic and syntax and its over all organisation and development.
3. Develop the basic skills of language teaching.
4. Develop skill to select and apply different methods, approaches and techniques of teaching language.
5. Develop skill to select and use an appropriate audio-visual aid for language teaching.
6. Develop competence in the preparation and use of various techniques and tools of evaluation.
7. Understand the universal features of various languages.

B - COURSE OUTLINE

UNIT - 1 Nature of language.

- a) Linguistic studies today
- b) Language in relation to psychology, sociology, culture.
- c) Language as structure, as habit, as behaviour.
- d) Language as a means of communication - practical, effective and creative.

- UNIT -2      Language components.
- a) Phonetics and phonology.
  - b) Nature of speech
  - c) Lexis and semantics
  - d) Morphology and syntax.
- UNIT -3      Organisation of the language.
- UNIT -4      Objectives of teaching languages at higher secondary school level.
- UNIT -5      Methods, Approaches and Techniques of teaching languages.
- A brief description of different methods, approaches and techniques used in the regional language and foreign language teaching, inclusive of the traditional methods like lecture, assignment, discussion, seminar, workshop.
- UNIT -6      Audio-visual aids in teaching languages.
- Linguaphone records, radio, tape recorder, language laboratory, films, film strips, television lessons, over-head projector, epidiascope and slides, picture cards, charts etc.
- UNIT -7      Planning of Instruction
- Content analysis, lesson planning.
- UNIT -8      Basic skills in language teaching
- Listening comprehension, Reading, Writing, Speech.
- UNIT -9      Evaluation of language teaching.
- Preparation and use of tests, written and oral.

Comprehension test, Expression test, Teacher made test, Reading test, Dictation, preparing question paper. Diagnostic test, Remedial teaching, Drill and exercises : Self evaluation techniques.

UNIT - 10 Research and its application in language teaching.

#### C - PRACTICAL ACTIVITIES

1. Preparing audio-visual aids like charts, models, substitution tables, pictures etc.
2. Preparing conversation - Drills and dialogues based on the vocabulary and the structures for higher secondary level students.
3. Using a tape recorder for improving loud reading, preparation of a reading material.
4. Preparing linguaphone lessons for improving speech.
5. To evaluate a T.V. lesson and submit the report.
6. To review the content at higher secondary level (languages) and submit a report.
7. To set a question paper in any one language.
8. To prepare a work book or assignment for language.
9. Phonetic transcription.
10. To prepare an exercise to overcome phonological or semantic errors made in a class.
11. To prepare a battery of test items to measure vocabulary/grammar/listening comprehension/reading comprehension.

6.6.6.4

COURSE - 6METHOD OF TEACHING MATHEMATICSA - OBJECTIVES

To enable the student teacher to -

1. Understand the objectives of teaching mathematics at higher secondary level.
2. Develop skill to select and apply different approaches to teaching of mathematics.
3. Develop skill in the use of teaching aids.
4. Develop competence in the preparation and use of various tools of evaluation.

B - COURSE OUTLINE

- UNIT - 1 Structure of mathematics and place of mathematics in school curriculum.  
The discipline of mathematics, its nature and structure, the concept of new mathematics, place of mathematics in the school curriculum, Aspects of mathematical modelling.
- UNIT - 2 Aims and objectives of teaching mathematics at higher secondary level.
- UNIT - 3 Planning of Instruction.  
Content analysis, lesson planning, unit planning.
- UNIT - 4 Methods and approaches of teaching mathematics.  
Historical approach, analytic/synthetic, inductive/deductive approaches, discovery, problem solving, Lecture method, discussion method, assignment method, project method,

seminar techniques, oral and written drill, review and supervised study, self study including programmed instruction, group work.

- UNIT - 5 Models of teaching and its application to mathematics teaching.
- UNIT - 6 Teaching aids.  
Preparation and use of : Charts, models, programmed learning materials, radio programmes, T.V. Lessons, video-tape, cassettes, slides, films, film strips etc.
- UNIT - 7 Evaluation  
Construction and use of achievement test, teacher made test, and standardised test, diagnostic tests, drill work, review work, remedial teaching, problem situations, setting of question paper, assignments in mathematics - importance characteristics, preparation, merits and demerits.
- UNIT - 8 Mathematics Activities  
Importance, organization and activities of mathematics clubs, recreational activities in mathematics.
- UNIT - 9 Research and its implications for teaching of mathematics.
- UNIT - 10 History of mathematics  
A brief survey of history of mathematics with reference to Roman, Egyptian, Babylonian, Greek, Chinese, Arab and Hindu contribution.



C - PRACTICAL ACTIVITIES

1. To prepare one mathematical game
2. To review the content of mathematics at higher secondary level.
3. To prepare a teaching aid, for example, developing a model for teaching surface area of a cone.
4. To study the contribution of mathematicians in a given period.
5. To study the Indian contribution to the growth of mathematics.
6. To prepare graded problem situations check list.
7. To prepare assignments in mathematics.
8. Models in mathematics - to use any one or two models to teach a lesson or a unit.
9. Teaching through activities and experiments (e.g. kinds of triangle, plotting of irrational number on a line, pythagorian relation, value of  $\pi$  ).
10. To develop self learning material in mathematics.

6.6.7.1

COURSE - 7METHOD OF TEACHING CHEMISTRYA - OBJECTIVES

The student teacher -

1. Understands the objectives of teaching chemistry in higher secondary school.
2. Understands and adopts proper methods and approaches of teaching chemistry.
3. Develops adequate skill in the use of various teaching aids.

4. Develops favourable attitude for the new innovation and advancement taking place in chemistry and teaching of chemistry.
5. Understands the various tools and techniques of evaluation in chemistry.

#### B - COURSE OUTLINE

- UNIT - 1 Importance of teaching chemistry  
The place and importance of chemistry in school curriculum.  
Objectives of teaching chemistry.
- UNIT - 2 The structure of chemistry  
Structure of the Discipline chemistry, the need for integration of structure with the methods and approaches of teaching chemistry.
- UNIT - 3 Planning Instruction.  
Lesson planning in chemistry concepts and conceptual development, learning activities (additional and alternative learning activities), unit planning, planning for the year, planning of practical work.
- UNIT - 4 Methods, approaches and techniques in chemistry.  
Approaches to the study of chemistry :  
CHEM study approach, chemical bond approach (CBA) Nuffield Approach.  
Methods of presentation : Lecture, lecture cum - demonstration, laboratory method, heuristic method, assignment method, project method, problem solving method, inductive - deductive method.

Techniques : Inquiry, Discussion, Laboratory techniques.

The following skills have to be emphasized collection and organization of data, from laboratory experiments, analysis of the data, searching for the trend, generalization, improvisation of techniques.

#### UNIT - 5

Chemistry laboratory

The need, types, planning, equipment, maintenance, safety measures, planning for practical work.

Laboratory skills like assembly, cleaning, cataloguing, maintaining the stock, breakages, recording results, analysing, weighing, filtration, precipitation, distillation, crystallisation, titration (volumetric analysis) Gravimetric analysis etc.

#### UNIT - 6

Aids of teaching chemistry

Need for teaching aids in chemistry, its importance.

Visual aids : Pictures, charts, graphs, films, film strips, slides, over head projector, models.

Audio aids : Radio, Tape recorder

Audio - visual aids : T.V., Videoc, Synchronized slide projector.

Reference books, journals, periodicals, supplementary reading material, improvised apparatus and designing of simple and novel experiments.

- UNIT - 7 Science activities  
Field visits, science club, science fair, science exhibition, museum, visit to chemical factories, fertilizer factory, pesticides factory etc.
- UNIT - 8 Curriculum in chemistry.  
Study of syllabus of chemistry at higher secondary level.  
a) Objectives, b) Content - sequence and organisation, (c) Evaluation exercises.  
Text books of chemistry - its importance, organisation and use.
- UNIT - 9 Application of chemistry.  
Correlation of chemistry with other subjects of science and mathematics. Importance of chemistry and its application in technology, medicine, pharmacy etc., emerging fields in chemistry.
- UNIT - 10 Evaluation in chemistry.  
Concept of evaluation as applied to chemistry tools and techniques of evaluation, diagnostic test and remedial teaching in chemistry.
- UNIT - 11 Research and chemistry teaching.  
Research and its applications to teaching of chemistry.

#### C - PRACTICAL ACTIVITY

1. To prepare a teaching aid for teaching chemistry for example, one may develop a model to teach the structure of carbon and its allotropic forms.

2. Setting and conducting suitable demonstration experiment : each trainee has to conduct the required number of experiments.
3. The trainee has to take atleast eight practical classes and organize experiments.
4. Preservation and safety of chemicals.
5. Preparation of solutions of different concentration.
6. Preparation of improvised apparatus.
7. Survey of five chemistry laboratories in higher secondary schools to study its organization, equipment, maintenance and report.
8. Each trainee has to be apprenticed to a chemistry laboratory co-ordinator for one month to study and practise the laboratory skills, maintenance and management.
9. Prepare a laboratory manual, instruction sheets safety rules.
10. Observe the activities of chemistry teacher for one week and report.
11. To analyse data given in published papers/work.
12. Design an investigatory project.

6.6.7.2

COURSE - 7

METHOD OF TEACHING BIOLOGICAL SCIENCES

A - OBJECTIVES

The student teacher -

1. Enhances his understanding the basic concepts and their applicabilities.

2. Understands the objectives of teaching biological science.
3. Develops the ability to use various methods, approaches and techniques of teaching biological science.
4. Develops certain basic skills of demonstrating experiments in the subject.
5. Develops the ability of constructing improvised apparatus and of repairing and maintaining scientific equipment.
6. Understands the various tools and techniques of evaluation and uses appropriate techniques to assess the achievement of the pupils.

#### A - COURSE OUTLINE

- UNIT - 1 Importance of Biological science.  
The meaning and scope of biological science - role of biological science in every day life, society as an ecological situation growth of biological sciences, biological science and its application in other fields. Emerging fields in biological science.
- UNIT - 2 Objectives of Teaching Biological science  
Objectives of teaching biological science in higher secondary schools.  
Acquisition of information, scientific method of thinking, understanding derived from the study of biological science.
- UNIT - 3 The structure of biological science and its implications for methodology of teaching Biological Science.

- UNIT - 4 Planning Instruction in Biological science.  
Planning lesson, concepts and conceptual development, learning activities (additional and alternate learning - activities), planning a unit.
- UNIT - 5 Models of Teaching Biological science.  
Biological science inquiry model and other relevant models could be discussed.
- UNIT - 6 Methods and approaches of teaching biological science.  
Lecture method, demonstration method, investigatory project method, problem solving, discussion, assignment, inductive and deductive method, laboratory method, principles and theories of learning as applied to teaching of biological sciences, provision for individual differences.
- UNIT - 7 Laboratory in Biological science teaching.  
Biological science laboratory - its need, planning, organisation and maintenance, planning and organization for practical work, up keep of the laboratory, safety measures, guidelines for working in the laboratory.
- UNIT - 8 Teaching aids in Biological science teaching.  
Objects, specimen, models, books, journals and periodicals, supplementary reading material, films and film strips, improvised apparatus, slides, special emphasts on preparations for the microscope, use of scientific equipments etc.

- UNIT - 9 Biological science activities.  
Field trips collecting, culturing and preserving animals such as protozoans, sponges, worms, molluscs, anthropods, vertebrates, fossils etc., and plants such as bacteria, algae, fungi, mosses, flowering and non-flowering plants.
- UNIT - 10 Evaluation in Biological sciences.  
Concepts of evaluation as applied to biological science learning.  
Preparation and use of different tools and techniques of evaluating achievement in biological sciences. Diagnostic testing in biological sciences and Biometry, Assignment.
- UNIT - 11 Research and its applications in biological science teaching.

#### C - PRACTICAL WORK

1. Preparation of charts, model and other teaching aids.
2. Preparation of slides, preservation of specimen.
3. Preparation of improvised apparatus.
4. Setting and conducting suitable demonstration experiments for higher secondary classes. Each trainee should atleast conduct eight practical classes.
5. A critical study of the syllabi on biology at higher secondary level.
6. To observe the activities in a biology laboratory at higher secondary level (for atleast two weeks) and report.



7. To survey the equipment in biology laboratories in six higher secondary schools.
8. Each trainee should be apprenticed to a biology science laboratory co-ordinator for one month to study the laboratory maintenance and management.
9. To prepare herbarium of atleast twenty plants.
10. To prepare a paper on the contribution of a scientist and discuss in a seminar.
11. To undertake an investigatory project and submit a report.

#### 6.6.8

COURSE - 9

#### SPECIAL FIELDS

1. Educational technology
2. Educational and vocational guidance
3. School library organisation
4. Research methodology
5. Non-formal education
6. Population education
7. Adult and continuing education
8. Education of exceptional children
9. Elementary education.
10. Socially useful productive work (S.U.P.W.)
11. Environmental education.
12. Mental hygiene
13. Audio-visual/education
14. Applied linguistics
15. Computerised instruction
16. Curriculum development

## NOTE :

The teacher training college adopting the Higher Secondary Teacher Education programme, considering the resources and facilities available, may structure the course outline for the areas in special fields. While designing these course outlines, care should be taken to include the new developments taking place in the respective field and practical aspects should be emphasized with more provision for practical activities for teacher trainees.

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