

SUMMARY, FINDINGS, AND DISCUSSION

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SUMMARY

8.1 Introduction

The teacher performs the most vital function in the education system. He plays many roles in order to ensure that the set of educational goals envisaged are realised. The complexity of the roles demand competence that depends largely on his academic accomplishments and the professional preparation he receives in a teacher education institution. Since, the quality of teacher education programme has direct relationship with the quality of teachers prepared in the institutions, it is pertinent to examine the various components of the teacher education programme to bring about qualitative improvement. The Education Commission (1964-66) has remarked about the curriculum for the professional education of secondary teachers that there is a need to eliminate irrelevant matter and to relate the curriculum closely to the teacher's responsibilities and to Indian conditions, problems and studies.¹ Realising this urgent need, the National Council for Teacher Education (N.C.T.E.) was established to develop national consciousness regarding necessary improvements to be brought about in teacher education and to advise the government on matters related to teacher education. The National Council for Teacher Education after serious deliberations on the weaknesses of the teacher education, prepared a framework of 'Teacher Education Curriculum' in 1978.² This framework was comprehensive and gave broad outline regarding the programmes needed at different levels of teacher education. However, no further attempts were made to prepare programmes at different levels. The National Policy on Education (1986) has also pointed out that the quality of the teacher education programme has to be further improved and for

this purpose, it has strengthened the National Council for Teacher Education.³ Therefore, to design a sound system of education, the teacher education has to be redesigned to suit the demands placed on it.

The Education Commission (1964-66) suggested 10+2+3 pattern of education. Although most of the states have implemented this pattern of education, no effort was made to change the teacher education curricula to meet the needs of teachers. The National Review Committee on Higher Secondary Education with special reference to vocationalisation (1978) has recommended that the preservice education for teachers for the plus 2 stage should be carefully planned by universities.⁴ The study team for the western region has also recommended introducing of separate teacher training course for higher secondary level and further, it has recommended the encouragement of specialization in the training of teachers for secondary and for the plus 2 level in the teaching of science as separate subjects (Biology, Physics, Chemistry, Mathematics).⁵

8.2 Rationale for the study

One of the significant problems in the system of Indian education is its structure and articulation. A careful examination of the recommendations of various committees and commissions such as Sargent Commission (1944), University Education Commission (1949), Secondary Education Commission (1953), Sampurnanand Committee (1962) and Education Commission (1964-66), reveal that there has been no consensus regarding the structure of education. However, the Education Commission (1964-66) finally decided the structure of education as 10+2+3. It suggested the Sadler Commission (1919) pattern of 10+2 upto intermediate

standard followed by a 3 year degree course. This was also a recommendation of the University Education Commission (1949). But, the Sargent Commission (1944) and the Secondary Education Commission (1953) suggested 11 + 3 pattern and Sampurnanand Committee (1962) again recommended 10 + 2 + 3 pattern with the suggestion that +2 may be in colleges or schools, a flexible approach suggesting also junior colleges at the +2 stage. The Education Commission (1964-66) recommended the 10+2+3 pattern and suggested that the +2 stage should be in schools. It used the term 'Higher Secondary School' for the +2 stage.⁶ Although, the structure of education was changed, the corresponding structural changes in teacher education did not take place.

During the post-independence period, the enrolment at the higher secondary stage has shown a steady increase.⁷ However, the number of teachers have not correspondingly increased, thus affecting the student-teacher ratio adversely. This has been clearly pointed out by the document 'Challenge of Education - A Policy Perspective' in the following words:

"There has been phenomenal expansion of secondary education, from 4,000 schools in 1947 to 52,279 schools in 1982-83. If intermediate and junior colleges are added, the number would be more than 56,000. While a fourteenfold increase has taken place in the number of schools, there has been a twenty-fold increase in enrolment from 7 lakhs in 1947 to 140 lakhs in 1982-83, with only a ten-fold increase in teachers, from 93,000 to 9,93,000."⁸

This has clear implications for teacher education. There is an urgent need to expand the teacher education institutions quantitatively and improve the quality of teacher education at the higher secondary level.

The purpose of creating the higher secondary stage was two-fold. Firstly, to improve the academic standard of the entrants of the university education. Secondly, to vocationalise the higher secondary education so that 50 per cent would be offering vocational courses by 1985-86, and enter the world of work. However, at present not more than 10 to 12 per cent students at the +2 stage have joined the vocational stream.⁹ This implies that majority of the students at this stage are going for higher education, after undergoing academic courses at this level and a substantial number of students drop out. This situation is alarming and it has put a lot of pressure on the university system. Further, the inadequate learning of students at higher secondary stage has brought a large number of students to universities with mediocre qualities. This has resulted in deterioration of the standards of university education. One of the major reasons which can be attributed to this state of affairs is the quality of teachers at this level and their academic preparation in terms of content and methodology. Although, the Education Commission (1964-66) recognized the higher secondary level as a distinct stage, the teacher education has not been catering adequately to this level of education.

Another significant factor which has to be considered is that the pace of technological innovations has made rapid change as a permanent characteristic of the social environment, with inevitable consequences upon curriculum, methods of teaching and school organization. The major problem has been enabling teachers and educationists to cope with the personal demands that these conditions are creating and will create. A climate must be generated in which innovation coming from without will be considered positively, if not uncritically, and the responsibility for

innovation from within to deal with changed needs and circumstances will be accepted as part of the normal work of the organization.

The changes in the social structure due to modernization and increased education has contributed to the greater pluralism of values, and higher secondary students being in the adolescent stage, an highly impressionable stage, require adult guidance. This is also an appropriate stage to provide students with a sense of history and national perspective and give them opportunities to understand their constitutional duties and rights as citizens.

For this purpose, the higher secondary teacher has to be well equipped. The teacher is an agent of social cohesion, aiding the process of influence by means of which compliance and commitment to certain fundamental values on the part of the entire population is achieved; it follows that in his training there must be a parallel concern with securing a cognitive and affective identification with appropriate social and educational values rather than a mere intellectual recognition of their legitimacy.

In our country, for primary and secondary teachers, there are a number of regular training institutions which are giving preservice and inservice training programmes. A few training programmes are there for the teachers of higher education, for example, the M. S. University of Baroda, Baroda, regularly organises orientation programme for newly appointed lecturers, recently the Academic Staff Colleges are offering short term programmes for higher education teachers. But, an intermediary stage like + 2 although has been marked clearly, does not have any regular, separate preservice training programme for teachers at that stage, excepting the integrated courses such as M.Sc.Ed.

offered at Regional Colleges of Education (Mysore, Bhubaneswar).

The study of the characteristics of the higher secondary stage reveals that higher secondary teachers have to be better equipped to function effectively at this level. The higher secondary stage which comes in between the stages of secondary and university education is a linking one. This stage acts as an initiating stage which helps the students to nurture their academic interests and to prepare themselves to enter the portals of the university. This stage also purports to provide the necessary knowledge, attitude and skills for students to enter the world of work. The age group of students who come to higher secondary education is roughly between 15 to 17 years. The students at this level will be in the adolescent stage and therefore, the teachers have greater responsibility in understanding their psychology and catering to their interests and aptitude. These days, the higher secondary classes are usually over-crowded and frequently the courses at this level are enriched, and this has posed many challenges to the higher secondary teachers. The students are better exposed to the media such as radio, television, video, news paper, films, etc. The range of technological gadgets which could be used for educational purpose is wide. In the educational structure, the students at this level are initiated into different specialised courses of their choice and they are required to make concentrated study of a few courses at a deeper level. (Usually a higher secondary student has to offer four optionals). These features demand that the teacher at this stage equips himself with appropriate strategies of teaching and continuously try to improve his teaching competence.

The minimum qualifications of teachers required for appointment at secondary stage is B.Sc/B.A./E.Com. with B.Ed., whereas for higher secondary stage the minimum qualifications required for getting appointment as teachers is M.Sc./M.A./M.Com with B.Ed. Although the stages (secondary and higher secondary) are clearly marked and requirements for recruitment of teachers are very well demarcated, teachers of both the stages get the same kind of training, namely, B.Ed. This seems to be anomalous. A review of studies from different countries, e.g., Chile, Congo, India, Iran, Kenya, Malayasia, Puerto Rico, Thailand and Tunisia, concluded that the educational and professional qualifications of teachers are not important for pupil achievement at primary and lower secondary levels, though they are somewhat important at upper secondary level in certain subjects such as science (Simmons and Alexander 1980; Heyneman 1980).^{10,11,12} This tends to indicate that qualifications of teachers at higher secondary stage are important and the content mastery of the teachers contributes more towards the effectiveness of teaching.

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 being concerned about the problem of lack of training programmes for the +2 stage teachers. (Buch 1968; Trivedi 1968; Singh 1974; Pandharipande, 1978; Mehrotra, 1979; Anand and Padma, 1984).^{13,14,15,16,17,18.}

The Report of the National Review Committee on Higher Secondary Education with special reference to vocationalization has recognised the need for teacher training at higher secondary level in the following words:

Unless a teacher is prepared by way of preservice and inservice education to take up these new challenges of education, the objective of the +2 reform will be a non-starter. The elective subjects under general education (which bring down the first year undergraduate curriculum to class XII), also necessitate a fresh look at the contents and methodology of teacher education, and call for orientation of existing teachers through inservice courses. It is recommended that both preservice and inservice teacher education should be so organized as to bring about the proposed changes at this stage of education."¹⁹

Dutta (1983) has also recognised the need for teacher training at this stage in his paper entitled 'Teacher Education at the post secondary stage-patterns and prospects' presented in the National Seminar on Teachers, New Delhi.²⁰

It can be clearly seen that there is a need for having a training programme specifically designed for the higher secondary teachers. Realising this need, the investigator undertook the present study in order to answer the following questions:

1. What are the training needs of +2 stage teachers?
2. What are the training programmes catering at present to +2 stage teachers?
3. What are the functions of +2 stage teachers?
4. How the training programmes could be improved or a new one evolved to meet the existing needs?

8.3 Statement of the problem

In this study the investigator has made an attempt to evolve a teacher education programme considering the needs of higher secondary teachers. The actual title of the study is : "Evolving A Programme of Teacher Education at Plus 2 stage".

8.4 Objectives of the study

The objectives of the present study were:

1. To study the needs of preservice and inservice programme for +2 stage teachers as perceived by -
 - a) Teacher educators, b) Higher secondary teachers, and c) Principals.
2. To study the preservice and inservice education programmes for +2 stage teachers in terms of their -
 - a) Types, b) Objectives of the programme, c) Duration, d) Curriculum, e) Pedagogical aspects, and f) Evaluation procedure.
3. To study the functions of +2 stage teachers in order to identify the specific components for training the teachers at this stage.
4. To design a programme for training the teachers of the higher secondary stage.
5. To study the reactions of teacher educators and experts in education with respect to adequacy and workability of the designed programme.

8.5 Definition of a few terms

- i) + 2 stage : This refers to the higher secondary classes of XI and XII standard in the 10+2+3 pattern of education.
- ii) + 2 stage teachers : Teachers who are concerned with teaching the higher secondary classes of XI and XII standard.
- iii) Secondary Teacher Trainee : The phrase "Secondary Teacher Trainee" has been used to mean teachers having graduation in Arts or Science or Commerce

(first graduation) who are undergoing B.Ed. course meant for secondary school teachers or the inservice teachers at secondary school level undergoing B.Ed. course.

- iv) Higher Secondary Teacher Trainee : The phrase 'Higher Secondary Teacher Trainee' has been used to mean the teachers having master's degree (M.A/M.Sc/M.Com) who are undergoing B.Ed. course and planning to join the higher secondary schools for teaching profession or the inservice teachers of the +2 stage undergoing B.Ed. course.

8.6 Delimitations of the study

1. The study is delimited to the departments of education of the university/colleges which conduct preservice and inservice programmes for higher secondary teachers.
2. The study does not include the orientation courses provided by institutions such as Technical Training Institutions and Agricultural Universities.

This has been done keeping in view the background of the researcher and the constraints such as time and resources available for the study.

3. The validation of the proposed teacher education programme for +2 stage teachers was done only by checking with the reactions and comments of experts in the field like the professors of education.

The proposed programme could not be experimentally run due to the constraints of time and resources.

4. The training needs survey and the study of functions of teachers was undertaken in Gujarat although the study was made with a national perspective. There

are two reasons for the selection of Gujarat State for the study: Firstly, the researcher was working at the Centre of Advanced Study in Education, M.S. University of Baroda, Baroda and it was easy for collecting the data personally. Secondly, the national study would involve more money and other facilities; as the researcher was doing this work for the doctoral study, it was limited to Gujarat State.

8.7 The Method of Inquiry

The investigator considering the nature of the problem, after the study of the related literature and discussion with a few experts, decided the following methodology for the study.

The methodology followed for the study has been presented objectivewise for the facility of presentation and clear understanding.

Objective 1

In order to identify the needs of higher secondary teachers the investigator prepared two questionnaires. The first questionnaire was for teacher educators (includes principals also) and the other for higher secondary teachers. In order to mail the questionnaires to teacher educators, the information regarding the total number of teacher educators present in all the teacher training colleges, post-graduate departments of education in Gujarat was collected. Then "questionnaire for teacher educators" was mailed to all the teacher educators in all training colleges and departments of education in Gujarat State. Totally two hundred and fifty questionnaires were mailed. After sending two reminders and meeting a few

teacher educators and principals personally the investigator could collect seventyfive questionnaires. The investigator personally interviewed a few teacher educators and principals. The data collected were analysed qualitatively.

The investigator, to send the questionnaires for higher secondary teachers, selected through random sampling technique a minimum of two higher secondary schools from each district of Gujarat and the total number of schools thus selected was fiftyfour. While selecting the schools, it had been observed that the school being selected had both general and science streams and English as the medium of instruction.

In Vadodara district more higher secondary schools were covered in comparison to other districts. This was done with two points in view: The investigator being in Baroda could personally collect data in Vadodara district. Moreover, full representation to one district was thought to give more clear picture of the existing conditions. The reason for selecting only a minimum of two schools from each district was that it was more feasible and the sample to be covered was the entire state. Further, the cost involved for collecting data from more schools from each district was prohibitive for an individual researcher. Therefore, the investigator with a view to giving regional representation, covered a minimum of two schools from each district. The investigator sent a set of six questionnaires to each higher secondary school selected in the sample. (Please refer Appendix III E). The questionnaires were mailed to the principals of the schools requesting them to get it filled by their teachers and return. Totally 324 questionnaires were mailed. The investigator once visited most of the institutions and collected data personally. Further, the investigator could conduct some interviews with principals

and higher secondary teachers. After sending two reminders, the investigator got finally the response from one hundred and eighty six teachers. The data collected were analysed qualitatively. Percentages were worked out to interpret the data.

Objective 2

In order to fulfil the objective No.2, the investigator prepared questionnaire for co-ordinators of extension services departments to ascertain the needs of teachers and to study the inservice programmes for higher secondary teachers. The sample for this investigation constituted all the co-ordinators of extension services departments in Gujarat, the continuing education centres and the co-ordinators of extension services department of all the four Regional Colleges of Education. The questionnaire was mailed and the investigator also visited a few extension services departments and interviewed the co-ordinators. Further, the investigator prepared a questionnaire for teacher educators to study the opinions of teacher educators concerned with M.Sc.Ed. programmes. The investigator also visited Regional College of Education, Mysore to interview a few teacher educators concerned with M.Sc.Ed. programmes. The data collected were analysed qualitatively and the study of the programmes helped the researcher to visualise the programme components. (A detailed report of the investigations have been presented in Chapter II, Part II). Information regarding other programmes (preservice and inservice education) being run, was collected through correspondence with the concerned departments.

Objective 3

In order to study the functions of higher secondary teachers, a questionnaire was prepared entitled 'Job Analysis Scale for Higher Secondary Teachers'. All the higher secondary schools in the Baroda district formed the population for this study. There were 98 higher secondary schools in Baroda district. The investigator using stratified random sampling technique selected 25 higher secondary schools in the urban area and 8 higher secondary schools in the rural area of Baroda district. (Please refer Appendix IV).

In each of the selected schools questionnaires were mailed to the principal. The principal of the school collected the information through questionnaires and sent it back to the investigator. Totally 204 questionnaires were sent out of these 141 higher secondary teachers responded. The data collected were analysed qualitatively. The percentages were computed (A detailed report with regard to this investigation has been presented in Chapter IV) for interpretation of data.

Objective 4

The syllabi of B.Ed. programme have been analysed to identify the components relevant to the higher secondary teacher training programme. For this purpose, the syllabi of B.Ed. programmes offered in the universities of Gujarat State were considered. The technique adopted for analysing the content has been content analysis. (A detailed report has been presented with regard to the analysis of the syllabi in Chapter V).

The study of needs and functions of higher secondary teachers (objectives 1 and 3), the study of the actual preservice and inservice programmes for higher secondary teachers (objective 2) and the study of the B.Ed. syllabi of different universities in Gujarat helped the investigator to evolve a programme for higher secondary teacher training. The proposed model has been presented in Chapter VI.

Objective 5

The evaluation of the proposed model was done by checking with reactions and comments of experts in the field about the adequacy, and workability of the proposed model. For this purpose, a questionnaire was developed. The questionnaire was mailed along with the model to forty experts. After sending two reminders and personally meeting a few experts the investigator could collect nineteen questionnaires. The investigator personally interviewed a few experts to get a proper perspective in modifying the model. The report of the investigation for validating the evolved programme has been presented in Chapter VII.

8.8 Major Findings of the Study

For the purpose of clear presentation the major findings of the study have been classified into meaningful sub-headings such as training needs, functions, etc.

8.8.1 Training needs (Objective 1)

- (1) Majority of the teacher educators and higher secondary teachers have opined that -
 - i) the present B.Ed. programme is not able to cater to all the needs of higher secondary teachers.

- ii) the B.Ed. course does not differentiate methods and techniques for secondary and higher secondary teachers.
 - iii) the special methods in the B.Ed. course is not meeting the needs of higher secondary teachers.
 - iv) there is need for some training in guidance and counselling for higher secondary teachers.
 - v) there is a need to train higher secondary teacher trainees in the preparation, use and repair of audio-visual aids.
 - vi) there is a need for training in evaluation, theory and techniques for higher secondary teacher trainees.
 - vii) the higher secondary teacher trainees should be exposed to designing of investigatory projects, assignments and experiments.
 - viii) the higher secondary teacher trainees should be given some training in administrative activities.
2. A preponderant majority of the teacher educators and higher secondary teachers think that -
- i) the content part of the B.Ed. course needs to be enriched.
 - ii) the practice teaching programme has to be changed in its form, structure and evaluation to suit the needs of higher secondary teachers.
 - iii) the duration of the practice teaching has to be lengthened.
 - iv) there is need for training in classroom management techniques for higher secondary teacher trainees.

- v) it is necessary to train higher secondary teacher trainees in organising co-curricular activities.
 - vi) there is a need for follow-up programme of pre-service and in-service courses.
3. Majority of the higher secondary teachers have opined that -
- i) there is a need of foundation courses for higher secondary teachers.
 - ii) an advanced course in the specific subject area like physics, chemistry, history etc. should be given wherein recent developments in the content area are covered.
 - iii) the subject experts should be called upon to give lectures frequently on difficult topics.
4. Majority of the teacher educators have observed that the higher secondary teacher trainees are poor in content.

8.8.2 Functions of higher secondary teachers (objective 3).

Majority of the teachers in the study have opined that all the functions listed in the 'Job Analysis Scale' are essential for higher secondary teachers.

Some of the very important functions listed by majority of the higher secondary teachers are as follows:

- maintaining good relation with the colleagues
- preparation of time-table.
- maintaining school records of pupil work and progress.
- maintaining attendance registers.

- participating in staff meeting, decision making
- maintaining good relation with students
- selection and use of appropriate methods of teaching.
- speaking clearly and fluently to individuals.
- selection and use of appropriate audio-visual materials.
- effective use of skills such as questioning, giving illustration, black board work, organising group discussion.
- posing problems to students.
- allowing students to hypothesize.
- asking students to interpret data.
- facilitating students to draw proper conclusions.
- involve students in discussion.
- utilizing experimental data for making generalizations.
- helping the student to be aware of their strengths and weaknesses.
- giving guidance and counselling.
- organising co-curricular activities.
- skills needed in laboratory work.
- evaluation activities.
- to design projects and carry out the same
- preparing research papers.
- participating in seminars.
- participating in inservice programmes.

8.8.3 Pre-service and in-service programmes (Objective 2)

1. The pre-service courses for higher secondary teachers have been of two years' duration and these courses are essentially integrated courses i.e., M.M.Ed., M.Sc.Ed.

2. There is need for more interaction between subject experts and the experts in the professional areas.
3. A preponderant majority of the teacher educators have opined that the objectives of the M.Sc.Ed. course would adequately cover the purposes of higher secondary science and mathematics teaching.
4. Majority of the teacher educators have opined that
 - i) the M.Sc.Ed. course is able to satisfy all the needs of higher secondary science and mathematics teachers.
 - ii) the M.Sc.Ed. course is effective from the point of view of content for a higher secondary teacher but the methodological aspects and the educational component provided need to be modified to suit the needs of higher secondary teachers.
 - iii) With regard to the depth of content covered the M.Sc. Ed. programme is at par with the M.Sc. programme offered in the respective universities.
5. Majority of the teacher educators use lecture, seminar, lecture-cum-demonstration, and demonstration methods more frequently.
6. Majority of the teacher educators give assignment or projects to M.Sc.Ed. students.
7. A preponderant majority of teacher educators have felt the need for a separate teacher training programme for higher secondary teachers.
8. Majority of the teacher educators have opined that
 - i) there is scope for the use of audio-visual aids in M.Sc.Ed. course.

- ii) there is need to provide training in techniques of guidance and counselling to each higher secondary teacher.
 - iii) there is a need for suitable training in evaluation theory and techniques for M.Sc.Ed. students.
9. Majority of the teacher educators think that
- i) the duration of internship is inadequate
 - ii) there is a need to give orientation course/ programme in content area.
10. Majority of the co-ordinators have stated that the objectives have been realized partially.
11. Majority of the inservice programmes organized are on science subjects.

8.8.4 Analysis of the B.Ed. syllabi (Objective 4)

1. There is a uniformity in the number of courses offered for B.Ed. programme in different universities.
2. Almost all the universities are offering eight theory papers, out of which five papers are foundational in character.
 - such as Philosophical and Sociological Foundations, Psychological Foundation in Education etc. Two methods subject have to be chosen by students in their specific specialisation such as methods of teaching Chemistry, History, Economics, etc.
 - One special field has to be chosen for the study of one semester duration e.g. School Library Organisation, Population Education, Educational Technology, etc. Some universities offer additional content courses.

3. There has been a wide variation in the nature of courses and activities assessed internally.
4. The number of lessons given by students in practice teaching varies from 20 to 50 and the number of lessons given by others to be observed ranges from 30 to 60 lessons. Two lessons are allocated for examination - one in each method.

8.8.5 Findings Concerning the Validation of the evolved model

1. Majority of the experts in the study think that
 - i) there is a balance between theory and practical aspects of the evolved programme.
 - ii) the duration of the programme should be two years
 - iii) organising inservice programmes should be accepted as a normal function by each teacher training college.
2. Majority of the experts in the study agrees with the over all structure of the components in the model.
3. Majority of the experts think that more emphasis should be given to teaching of students in late adolescence.

8.9 Discussion

In the following discussion issues concerning the development of the model, the theoretical issues and certain controversial issues concerning teacher education in general and teacher education at plus 2 level in particular are presented. These issues have to be seen in relation to the model proposed (Chapter VI) and the evaluation of the model (Chapter VII).

8.9.1 Problems in designing the teacher training programme.

There are several significant problems in designing the teacher training programme. Each of the significant problems has been discussed in detail providing the area covered by the problem and the depth of the problem.

8.9.1.1 Lack of consistent theories

One of the major approaches adopted in the field is building a teacher training model based on some theory. Many models of teacher training has been developed based on Behaviouristic theories, the Humanistic theories, etc. (for example, competency based teacher education programme has a foundation in behaviouristic theories). While acknowledging that each paradigm of teacher education to be considered is in itself very diverse and that differences within paradigms are not inconsequential, it should be noted that each paradigm is at the same time held together by a set of common assumptions that distinguishes the basic goals of one general approach from another. It may be observed here that each theory has certain limitations. When a particular model is developed for a practical training, the context in which the theory was evolved may not be the same as the teacher training model which has to be implemented. Further, there are difficulties in combining theories for their assumptions may not be compatible. The lack of consistent theory has made the development of teacher education programme difficult. However, the educational practice has always been guided by various conceptions and models. These may be formal and explicit or informal and implicit. For example, a teacher whose model of teaching is humanistically oriented (e.g., following

Carl Rogers) will probably perform quite differently from a teacher inspired by B.F. Skinner. Joyce and Weil (1972)²¹, Siegel (1967)²², Nuthall and Snook (1973)²³ have provided useful accounts of many of the prevailing models of teaching from which one could derive a suitable model or a combination of models for his teaching context. Joyce has found some evidences that the models of teaching learned by teachers in training have an influence on the particular interactive styles used in teaching.²⁴ Nevertheless, the relationship between the teacher education programme, the institutional form and social context of education raises many pertinent problems which needs to be delineated systematically and studied holistically.

8.9.1.2 A wide variety of needs have to be considered.

A wide variety of needs have to be considered while developing the teacher training model. It becomes more difficult to devise the curricular structure to meet the diverse needs of people for example, the same teacher training programme may not be able to cater fully to the urban as well as rural student teachers' needs. Therefore, the curriculum designer has to decide his clientele well in advance.

8.9.1.3 Flexibility in teacher education programme

There is more demand for flexibility in teacher education programmes. Although, flexibility of the teacher training programme is a good feature, sometimes in the process of providing more flexibility, the structure of the teacher education programme becomes more generalistic and vague. In the present study, the investigator has made an attempt to maintain a careful balance between the flexibility and the meaningfulness of the structure of the teacher education programme.

8.9.1.4 The lack of conclusive research results.

The lack of conclusive evidences concerning teaching and teacher education research studies compels the curriculum designer in teacher education to rely more on wisdom of the teacher educators, experience and opinions. Biddle and Dunkin (1974) have clearly stated the position as : 'The simple fact of the matter is that after 40 years of research on teacher effectiveness during which a vast number of studies have been carried out, one can point to few outcomes that a superintendent of schools can safely employ in hiring a teacher or granting him tenure, that an agency can employ in certifying teachers, or that a teacher education faculty can employ in planning or improving teacher education programmes.²⁵ However, an attempt has been made by the investigator, as far as possible, to base the decisions concerning the course elements on empirical findings and the opinions and judgments of teachers, teacher educators and experts in the field.

8.9.1.5 Financial constraints

The development of teacher education programme and testing in field conditions require a long period of time and therefore, the investigator requires an enormous amount of money. Many a time, the financial constraints makes an investigator to limit his sample and to be contented with the theoretical study. Several teacher educators have referred to inadequate funds for research (Gage 1984; Haberman 1983; Kochler 1984).^{26, 27, 28} Further, the funds allocated for research on teacher education is small and it gets thinly distributed. The allocation of funds for research is able to meet the marginal cost. For the cost of project, the materials needed, travel expenses

have increased tremendously. The initial period of conceptualisation of the attributes may itself take one or two years. Due to inflation the prices of materials have increased steadily. The travel expenses have also gone up. The processing of materials charges such as typing, cyclo-styling, xeroxing, printing etc. have increased. The postal expenses are also considerable. In surveys, generally, responses are not obtained with the initial request and the investigator needs to send the reminders. Some times, the investigator has to personally visit to get the data. Sometimes, the questionnaires or models sent are lost or misplaced by respondents resulting in the investigator sending another copy on request. Doing such things involves lot of postage. Added to these difficulties, the sanctioned amount is not disbursed in time to the researcher. All these inherent problems in the system make the researcher suffocate due to lack of finance. Researchers are therefore, hesitant to embark on such long term projects.

8.9.1.6 The administrative problems

The investigator while developing and validating the model, required administrative support all along and many a time the teacher education institutions are not willing to provide the required facilities for running the programme to test its effectiveness. Some of the important reasons for the lack of enthusiasm of teacher education institution to test the effectiveness of the model are:

- a. The general inertia of the institution for research on teacher education.
- b. The lack of adequate funds.
- c. The compatibility of the policy of the institution with the research problem.
- d. The lack of trained personnel willing for innovation.
- e. The lack of infrastructure facilities such as building, laboratory, library, etc.

8.9.2 The structure of the components of the Higher Secondary Teacher Training Programme.

The overall structure of the components of the higher secondary teacher education programme has been approved by majority of the experts in the validation study (Please refer Chapter VII). However, one of the major changes suggested has been the combining of the course 6 and course 7 or combining course 6, 7 and 8 to form a single course viz., Content-cum-methods. This suggestion can be translated into some concrete course structure, provided that the experts in the different content areas and experts in methodology meet for the purpose and design specific course, structure for each discipline. The individual teacher education institution with adequate resources such as the Centre of Advanced Study in Education, Faculty of Education and Psychology, M.S. University of Baroda, Baroda, can take up this vital task of curriculum building at the national level. There is an urgent need for this task of curriculum building, for our educational system is in a process of change, i.e. (the 10+2+3 pattern of education has been accepted by many states, currently the National Policy on Education (1986) has also reflected on the educational structure) and is confronted with the need for a reorientation of the structure, content, goals and purposes of teacher education at different levels.

It is imperative that the teacher education programmes are improved at higher secondary stage for there is a growing concern for the higher secondary stage due to modernization, and the rapid progress in scientific and technological development.

The emphasis on more diversification of courses at the higher secondary level call for more attention to be paid to the training of highly qualified personnel for laying the foundation for their disciplines at the +2 stage.

The need for validation of indigenously developed models also demand that the present model be validated empirically in an institutional setting. The consequences of such an effort to build the curriculum would be as follows:

1. A tried out teacher education model will be available for implementation in the same institution in which it was tried out i.e., The innovation can be institutionalised.
2. This innovation could be disseminated to other teacher education institutions which do not have adequate facilities for doing experimentation.
3. The +2 stage gets more focussed resulting in some multiplier effect in raising the standard of +2 education and influencing the quality of life of the adolescent learners.

8.9.3 Duration of the programme

Majority of the experts are of the opinion that the duration of the programme should be two years (please refer

chapter VII). Some experts are of the opinion that two years duration is desirable but due to social pressures and considering the fact that the entry qualification is post-graduation, one year duration will be more feasible. Some experts are of the opinion that the programme may be of six semesters duration.

It may be observed here that considering the fact that the programme inputs are more and the B.Ed. programme has not been able to satisfactorily provide qualitative inputs for higher secondary teachers within one year, it would be desirable to try out a two year course. However, the individual teacher education institution considering its resources and personnel may have a one year condensed course.

A resourceful teacher education institution may try out a two year programme catering to the needs of entire region or a particular state.

8.9.4.1 Curricular aspects

Majority of the experts have approved the curricular structure proposed in the model. However, a few modifications are suggested by the experts keeping in view the workability of the model. They are: (i) The courses 6, 7, 8 may be integrated as one subject viz., content-cum-methods. (ii) The course 9 i.e., special fields may be either made optional or deleted. (iii) The practical work suggested in relation to both foundation and special courses has to be reduced substantially to make it feasible. Experts have recommended the number of practicals to be limited to 5 to 6 and a few practical activities may be provided as small projects, (iv) The project work may be made optional, (v) The course 8 may be provided as a inservice programme if the teacher

education institution does not have sufficient resources in terms of personnel and materials.

These curricular changes needs to be examined by the individual teacher education institution with a view to implementing the programme.

The accelerating knowledge accumulation demands that the liberal education of teachers be more highly selective and that more adequate content examples be developed. The nature of teacher preparation to understand the structure of a discipline, select adequate concepts, materials, processes, or systems of logic, and the ability to effectively relate with varied specialists should characterize the basic studies of teacher candidates will the academicians measure up to their responsibility to reformulate within and among the disciplines?

8.9.4.2 The relation between theory courses and practice in recent years professional theoretical component of teacher preparation programmes has been the subject of considerable criticism and dissatisfaction. Institutions of teacher education have tended to centre their programmes on the most directly practical aspects - instructional and management skills and various competencies developed within an extended practicum framework. With this emphasis on teaching competencies and the practicum, both geared towards entry level certification, the more abstract theoretical courses in teacher education programmes have faced considerable pressure. Either to show a pay off that is directly related to classroom teaching or to step aside in favour of more skill and practice oriented

experiences. Even highly theoretical education courses, which on the surface offer to have little connection with the teaching act (e.g. History, Philosophy, and Sociology of Education), have been evaluated, in terms of their perceived relevance to teaching performance and classroom effectiveness, within this general view of teacher education, then it is held that the relationship between theoretical course work and the instructional and management skills demonstrated in the practicum experience must be a direct one. In effect, university based theoretical course work is expected to affect—that is, to be causally related to — performance in the classroom, both as a student and as a certified teacher. And when it is shown or believed that this has not occurred, the typical response is to seriously question the relevance of such course work and hence its value to initial teacher preparation. The research in this regard reveals that there is little relationship between performance in theoretical course work and performance in teaching. (Jencks 1972; Emanuel, Larimore, and Sagan 1975)^{29, 30} However, Iwa and Greene (1980) recently found in a study of 139 teacher trainees at the university of Lethbridge, that students' grade point average in their teaching major was significantly correlated with their performance in practice teaching.³¹ Similarly, Emerson, Elford and Scaldwell (1982) found a positive association between practicum success and performance in foundational studies (i.e., theoretical course work in psychology, Philosophy, and sociology).³² A critical examination of the results of these studies reveal that the research study results are inconclusive. Therefore, it may be assumed that there is a positive relationship between the theory courses and practice teaching.

8.9.4.3 Evaluation aspects

The experts are of the opinion that the number of hours for each unit have to be worked out and criteria evolved for evaluating practical activities (Please refer Chapter VII). It may be observed that the investigator did not workout the number of hours for each unit with a view to provide flexibility for the teacher education institution to implement the programme. The individual institution may modify the course elements and weightage in such a way as to suit the local needs. The criteria for practical activities were not evolved for the nature of practical activities devised varied widely. Further, the institution concerned may evolve criteria of evaluation to suit the local needs.

8.9.5 Internship programme

In the internship programme, the demonstration of lessons, critical study of the behaviour patterns and continuous practice of skills have to be emphasised. While implementing the programme, more emphasis should be laid on methods such as small group discussion, seminar, assignment, self study, library reading, etc. Certain activities such as developing autoinstructional material. Quasi programming, personalised system of instruction (P.S.I.), preparing inventory of practical materials have to be included.

With regard to the length of practice teaching or internship, there seems to be general agreement.

As far as possible the individual teacher education institution and the school concerned providing training has to emphasize on the post adolescence period and the activities which help the teacher to adjust to the teaching at higher secondary level. Effort should also be made to

familiarise the teacher trainee to all the major activities of regular teacher by providing opportunities for him to function for a short duration in the role of a regular teacher.

The lengthening of the practice teaching only does not yield results. It is very necessary that the practicum has to be organised properly. The inference that can be drawn from equivocal nature of research also is that although the extended practicum can provide positive effect, simply lengthening the practice teaching experience is of itself not a sufficient condition. **Widelen and Holborn (1983)**³³ have succinctly put it:

'It appears that while the length of practicum may be important, a longer practicum alone is insufficient to produce higher levels of motivation and self concept or lower levels of anxiety among student teachers.... the combination of specific programme characteristics with a larger practicum may be necessary for significant change to occur.'

Majority of the experts have approved the lengthening of the practicum in the model and they have suggested to lay emphasis on higher secondary teaching.

8.9.6 The in-service component.

Majority of the experts have suggested that the inservice training programmes should be organized regularly. In the model, although the inservice programmes have been classified under five heads, a few more categories may be evolved by the individual teacher training colleges to include innovative programmes and to meet their needs.

The follow-up activities have to be taken up seriously by the teacher education institutions. There is a need to expose the higher secondary teachers to techniques of teaching in different disciplines, in addition to his own subject of specialisation, so that an interdisciplinary awareness is created. More and more refresher courses, summer institutes have to be organized. More emphasis has to be given to content enrichment programmes.

8.9.7 Organisational requirements

In order to try out the higher secondary teacher training programme, the institution needs to have more facilities and trained personnel. Some comprehensive colleges may be created in each state to train higher secondary teachers. To study the feasibility of the instituting comprehensive colleges, the investigator through a survey tried to make an estimate of the enrolment of master degree holders in teacher training colleges in Gujarat for five years i.e. 1980-1985 (Please refer Appendix VIII). It was found that the number of master degree holders entering B.Ed. course has steadily increased. In the year 1980-81, twenty per cent of the students had masters degree, and by the year 1984-85 the percentage had risen to twentyfive. This clearly shows that there is need for a better perspective plan for the training of higher secondary teachers in Gujarat state. This also clearly shows that it would be feasible to establish comprehensive college.

In order to implement the programme, the teacher educators have to be properly oriented. Hand books and other required curricular materials have to be developed by experts drawn from the entire country.

The Regional Training Centres may be established in a teacher training college having all the required resources.

Another significant suggestion made by one of the experts which may be tried out is as follows: A separate department has to be created under the direct charge of the vice chancellor and the department should be maintained by a full time co-ordinator, who acts as a liaison officer to bring together resources in terms of personnel and other required materials for training from the department of education and other departments concerning basic disciplines such as Physics, Chemistry, Economics, Commerce etc. The finance for this department should be provided liberally.

8.9.8 Teacher education for vocational teachers.

On the present study, the vocational school teachers have not been considered due to lack of time and resources. Further, the vocationalisation at the higher secondary stage has not made much progress. The report 'Programme of Action' states that 'The current intake in the vocational stream is of the order of 72,000. Only about 2.5% of student population entering higher secondary stage is covered by vocationalisation so far.³⁴ This does not mean the teacher education at the higher secondary level for vocational teachers is not needed. However, the framework of teacher education designed in the present study may be helpful to design teacher education programme for vocational higher secondary teachers because the stage characteristics are common for both academic as well as vocational stream teachers.

8.9.9 Value orientation of higher secondary teachers

Mc Leish in a comparative studies of English, Canadian, American, African, Thai and Hawaiian teachers has reported

that there is no generally accepted and distinctive pattern of values and attitudes distinguishing the vocation of teachers from the general culture pattern. He opines that 'In relation to orientation to the task of the school, the nature of childhood and the classroom procedures which lead to successful or unsuccessful learning and teaching, there seems to be a national consensus but no professional consensus. These matters appear to be left to the play of cultural, social, national and religious forces which operate outside the awareness of teachers and educators of teachers. In other words the primary influence which determines the values and attitudes of the teaching institutions, the teachers and students, appears to be the unremitting pressures which lead to an irrational loyalty to the values of the primary group'.³⁵

It may be observed here that the orienting the higher secondary teachers with regard to the national values is very vital. In the modern context, this component has to be given more emphasis. Further, the cherished values such as religious tolerance, sharing, co-operation, the feeling of oneness are to be promoted in teachers. The National Council of Educational Research and Training, developed a course entitled 'The Teacher and Education in Emerging Indian Society' to promote the values of the emerging Indian Society.³⁶ This publication is being used as a resource material in many teacher training colleges for providing foundation courses in the teacher education programme.

8.9.10 Alternative models.

8.9.10.1 The issue of concurrency versus consecutiveness.

The concurrent programmes are those teacher education programmes in which the studies leading to a teaching award

run parallel to the general degree studies. The integrated teacher education programmes are essentially concurrent programmes. This controversy regarding concurrency and consecutiveness is very old and the problem is not yet settled. However, it could be observed that in our country majority of the teacher education programmes are of consecutive type. A short term course after the general degree leads to the degree in education. The main reason for the popularity of consecutive type of programmes is that it is economical and provides opportunity for the student to diversify. A few experts have been suggesting that concurrent programmes should be promoted. It could be observed that, when adequate resources are available, the concurrent teacher education programmes should be organized.

8.9.10.2 The structure and duration

The articulation of structure and duration of teacher education programme has been an issue of controversy mainly due to the lack of resources, the variety of complex needs of teachers and lack of qualified teacher educators. It may be observed that the structure and duration of the teacher education programme has to be decided considering the resources, the needs of teachers at the stage and the personnel available. However, it should be observed that a professional course give personal education through study of atleast one academic subject, a body of education theory applicable to the school and the classroom, sufficient depth or breadth of curricular knowledge for the age-range to be taught, an armoury of appropriate methodological skills and techniques, and practical experience in school culminating in a final test of competence for entry to the profession.

In this section, the investigator has considered the molecular aspects of teacher education, such as the use of logical operations in teaching different subjects, and also the molar, such as how to enrich the global perspective.

8.10 Conclusions

The Education Commission (1964-66) suggested 10+2+3 pattern of education. It has been implemented by most of the states. However, there was no corresponding changes made in teacher education. The primary and secondary teachers have separate teacher training programmes. Although, the higher secondary stage has been identified as a distinct stage, there is no separate teacher training programme for higher secondary teachers. Realising this need, the investigator studied the training needs of higher secondary teachers and identified the functions. The investigator also studied the training programmes (both pre-service and in-service) for higher secondary teachers. The B.Ed. syllabi was analysed to identify the course elements relevant for higher secondary teacher training. The investigator studied the results of the previous studies and evolved a programme for higher secondary teachers. The proposed programme was examined by the experts and majority of the experts have opined that the proposed model is feasible with certain modifications regarding the structure and duration. The Higher secondary teacher education programme is meant for academic stream teachers at the plus 2 stage.

8.11 Implications of the study

The present study has implications in different levels. The teacher education programme evolved helps in training teachers at the higher secondary level. It has

identified the needs of teachers which helps the schools to improve its practices. The in-service programmes helps the higher secondary teachers to continuously grow professionally and build their competence.

The study helps in improving the standard of higher secondary education, which in turn, aid in increasing the standard of higher education.

The study also helps in improving the secondary teacher preparation by identifying the weaknesses.

The present study has brought in consciousness among the professionals and researchers in the field about the problems concerning secondary and higher secondary education and training. It is likely that more and more attention will be given to the problems concerning the higher secondary education. Moreover, the study is expected to stimulate thinking of the researchers to conduct research studies on the problems of the higher secondary teacher training.

The present study helps the co-ordinators of extension services centres to improve their in-service programmes.

The Regional Colleges of Education can improve the quality of integrated programmes being offered to higher secondary teachers.

The study helps the organisation such as Department of Teacher Education, N.C.E.R.T. and National Council for Teacher Education, New Delhi to evolve policies concerning the higher secondary teacher education.

The present study also provides a structure which may be adopted by Academic Staff Colleges being organized for higher education teachers.

The study helps in reorganising the curriculum of teacher training courses at different levels.

The study provides a framework, which may be utilized for training vocational teachers with certain modifications. Vocationalisation of higher secondary education being national priority, this task could be taken up in the right earnest.

The present study helps the Ministry of Human Resource Development to evolve certain policies concerning the secondary and higher secondary education and teacher training at secondary and higher secondary levels.

8.12 Suggestions for further research.

The following studies may be undertaken to understand the problems and improve the quality of education.

1. The Higher Secondary Teacher Education Programme can be experimentally validated.
2. Evolving the in-service teacher education models for secondary and higher secondary teachers.
3. A study of the effectiveness of the integrated teacher education programmes.
4. A study of the consecutive and concurrent teacher preparation programmes in Regional Colleges of Education.
5. A study of the problems and training needs of vocational teachers at the higher secondary level.
6. A study of the vocational teacher training programmes (Pre-service as well as in-service programmes) e.g. Agriculture, Medicine, Engineering, Pharmaceuticals, etc.