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Summary, Conclusions, Educational Implications and Suggestions for further Research
Chapter V

SUMMARY, CONCLUSIONS, EDUCATIONAL IMPLICATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

5.1 SUMMARY

Education in 21st century is a challenge to excellence in every endeavor. Newer and more vibrant areas of education have already come under the purview of teaching-learning. The uses of new media and technology have made education interesting and thrilling to the teachers as well as the learners at all levels. The inclusion of health education, sex education, value and aesthetics education etc. have attained immense public attention in the professional training of teachers right from school level. Today we need well qualified and well prepared teachers who have not only academic and professional competencies of high order but also earnest responsibility and commitment to strive constantly to raise student learning, capacity and achievement so as to make them increasingly autonomous and self-actualizing persons. Without such good teachers, it is not possible to improve education.

Teacher education is the process of providing teachers and potential teachers with the skills and knowledge necessary to teach effectively in a classroom environment or outside the classroom environment. Teacher education is the professional preparation, in pedagogy, of those who want to enter the profession of teaching. Role of the teacher and his education is the foundations on which the super-structure of the education of a country is based.

Major developments made in teacher education since Independence have altered it from being a mere training component recognized as ‘relevant’ for school teachers to becoming a significant and essential aspect of the education system with the stature of an independent area of specialization.

Since Independence, the system of teacher education in India has been criticized on one count or another. Reports of various commissions and committees on education after independence had shown a special concern for teacher preparation by identifying various shortcomings and recommending certain remedial measures. Consequently, teacher education focused its attention on defining new goals especially in the light of the national development programmes and changing role of the teacher in emerging social order.
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Curriculum in teacher education is the heart and soul of any teacher preparation programme. It is the sum total of all the learning activities or experiences, within or outside the classroom, that are to be provided to the prospective teachers in order to achieve the goals of teacher education in particular and of education in general, for their continuous and willful growth in every sphere of life whether personal, social, professional or vocational.

The purpose of curriculum management is to help ensure that all students (prospective teachers) will get the most out of their education. Curriculum management is not simply the preparation of syllabus or courses of study. There are different components of curriculum management, ranging from setting of goals and objectives to the actual transaction. Curriculum management involves: i) curriculum planning; ii) curriculum development; iii) curriculum transaction and; iv) curriculum evaluation.

Curriculum transaction is the effective and desired implementation of the curriculum contents on the basis of aims and objectives specified in the curriculum. Curriculum transaction incorporates decisions about the contents and effective planning for providing learning experiences for its learners on the bases of content, organization of planning, administration/implementation of the organized planning and evaluation of the implementations by the implementer and the experts in the relevant field.

Transaction of curriculum is a much difficult task because it is based on theoretical and practical aspects as well. Two basic considerations need to be born in mind while planning transaction processes. One is the context in which transaction is carried out in terms of the physical and social characteristics of the setting. Second relates to teachers who actually are to transact the curriculum their capabilities and attitudinal dispositions. Thus, adaptations by teachers to the changing demands of the physical and social settings where the curriculum is transacted, as well as their own proficiency in various methods of transaction becomes a pre-requisite for making the process of curriculum transaction effective and meaningful.

The transaction procedures or strategies of the training programme have an important impact on the learning of the prospective teachers in terms of acquiring the necessary skills and related knowledge for to be a competent and effective teacher. Therefore, transaction of the curriculum meant for such a noble purpose becomes the hallmark of the teacher training programme.
There has been a considerable research pertaining to the evaluation of curriculum, practice teaching component of teacher education programme, assimilation and use of various innovations like micro-teaching, simulation, educational technology etc., and comparisons of teacher education programmes with respect to curriculum and evaluation procedures or few other components in two or more different states or countries.

Curriculum for secondary teachers’ pre-service training programme in Himachal Pradesh consists of the entire package of activities which are supposed to develop both general and specific skills required to be an effective teacher. But to what extent the curriculum is transacted during the period of training? And what are the lapses in the existing training programme are to be evaluated objectively so as to improve the quality of teacher preparation in the state of Himachal Pradesh.

In view of the importance of the teacher education or preparation programme, it is thought worthwhile to select the problem for research:

5.1.1 STATEMENT OF THE PROBLEM

Curriculum Transaction Procedures in Secondary Teachers’ Pre-service Training Programme of Himachal Pradesh: An Evaluative Study.

5.1.2 OBJECTIVES OF THE STUDY

1. To make the content analysis of curriculum of secondary teachers’ pre-service training programme.

2. To study the curriculum transaction procedures in secondary teacher’s pre-service training programme with regard to:
   i. Planning
   ii. Teaching Methods/Strategies
   iii. Media: print and electronics
   iv. Evaluation strategies
   v. Co-curricular Activities
   vi. Practice Teaching
   vii. Teacher’s behavior

3. To study the availability and utilization of the following resource centers viz.:
   i. Physical Sciences
   ii. Life Sciences
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iii. Mathematics
iv. Social Sciences
v. English Language
vi. Hindi Language
vii. Psychology
viii. Educational Technology

5.1.3 DELIMITATIONS OF THE STUDY
1. The study was confined to one state i.e. Himachal Pradesh.
2. The study was confined to the opinions of the 22 Subject Experts and 214 Teacher Educators only.
3. It was restricted to the 34 colleges of teacher education, affiliated/maintained by Himachal Pradesh University.
4. The teaching subjects, ‘Teaching of Sanskrit’ and ‘Teaching of Home Science’ were not included in the content analysis by the teacher educators.
5. It was confined only to one component of secondary teacher education programme i.e. curriculum transaction.

5.1.4 OPERATIONAL DEFINITIONS OF THE KEY TERMS

Curriculum:
The total programme of educational activities or learning experiences, offered by Himachal Pradesh University through its total institutional programme designed to achieve the prescribed objectives of secondary teachers’ pre-service training programme.

Curriculum Transaction Procedures:
The procedures such as decisions about the course content, use of various teaching strategies, behaviors exhibited by teacher educators, use of media: print and electronics and evaluation techniques undertaken by teacher educators of secondary teachers’ pre-service training institutions for the transaction of curriculum.

Secondary Teachers’ Pre-service Training Programme:
The one year teacher training programme offered by Himachal Pradesh University, Shimla for the award of B. Ed. degree through formal mode.

Evaluative Study:
A study, which assesses the extent of implementation and impact of a specific
programme or project, usually emphasize needs assessment and provide ongoing feedback. An evaluative study tends to focus on specific contexts of particular programme or project with no attempt to generalize beyond the cases at hand. It often uses a range of qualitative and quantitative tools but rarely use control or comparison groups and statistical methods to test specific hypotheses.

5.1.5 RESEARCH METHODOLOGY

Content analysis and descriptive survey methods were used to realize the objectives of the study.

5.1.6 SAMPLING

Out of the 75 Colleges of Education, in all the 11 selected districts, 34 Colleges of Education were selected randomly. From these 34 selected colleges of education, teacher educators with at least 10 years or more than 10 years of teaching experience were taken for holistic content analysis of curriculum/course-framework of secondary teachers' pre-service training programme in Himachal Pradesh and teacher educators with teaching experience less than 10 years were included in the sample for analyzing the relevance of subject matter content under various papers of curriculum/course-framework and to study the curriculum transaction procedures in secondary teacher's pre-service training programme in Himachal Pradesh.

Thus, the total sample included 22 teacher educators as subject experts and 214 teacher educators as subjects of the sample.

5.1.7 RESEARCH TOOLS AND TECHNIQUE

A) Tools

1) Secondary Teacher Education Curriculum Assessment (STECA) Rubrics for subject experts.

2) Sixteen Content Analysis (CA) Questionnaires for Teacher Educators.

3) Curriculum Transaction (CT) Questionnaire for Teacher Educators.

4) Eight Questionnaires on the Availability and Utilization of Various Resource Centers in the Training Programme.

B) Technique

5) Flanders' Interaction Analysis Technique of classroom observation.
5.1.8 PROCEDURE FOR DATA COLLECTION

The data on the various aspects of the study was collected by the investigator himself by administering the relevant tools and technique in the selected colleges of education with the prior intimation to the colleges.

Investigator himself observed 28 teacher educators using Flanders’ Interaction Analysis Technique in actual classrooms for 20 minutes.

5.1.9 ANALYSIS AND INTERPRETATION OF THE DATA

In the present study, the collected data were analyzed both qualitatively and quantitatively by keeping into consideration the nature of data in hand and objectives of the investigation. The data collected through STECA Rubrics were analyzed by using statistical measures of mean, range and standard deviation, and percentage analysis. The data collected through CA Questionnaires and CT Questionnaire, were analyzed by using the statistical technique of ranking and percentage analysis. To analyze the data collected through questionnaires on the availability and utilization of various resource centers frequency count and percentage was the sole criterion. In addition to this, the observation data collected through Flanders’ Interaction Analysis Technique was analyzed by using the procedure given by Flanders.

5.2 CONCLUSIONS

On the basis of the analysis and interpretation of the data following conclusions may be laid down:

5.2.1 CONTENT ANALYSIS OF CURRICULUM/COURSE-FRAMEWORK OF SECONDARY TEACHERS’ PRE-SERVICE TRAINING PROGRAMME IN HIMACHAL PRADESH

A) Qualitative Assessment of the Curriculum/Course-Framework through STECA Rubrics

The overall rating of 2.00 shows that curriculum is adequate in helping the prospective teachers acquire the knowledge and skills or practices needed to be successful in teaching. This may be attributed to many reasons pointed out by the subject experts.

> The curriculum was strong on the criterion of ‘Interdisciplinary Approach’. Prospective teachers are required to understand the presage, process and product variables of education by the synthesis of philosophical, sociological, educational,
emotional, cultural, physical, technological, managerial and constitutional values through the contents of several papers viz. Paper-I, II, III, IV, V and VI. However, in directing prospective teachers to develop competencies like managerial skills, organizational efficiency, leadership skills, democratic attitudes, innovative and creative abilities, understandings and visions, the curriculum is more theoretical rather than practical. This resulted in mean rating score of 2.59 i.e. almost, but not exactly as good.

The curriculum was also strong on the criterion of ‘Personal and Professional Qualities’, where the curriculum encourages character development among prospective teachers, consistent with those required in workplace as it includes concept of philosophy and education, correlation between philosophy and education, Indian and western philosophies, thoughts of Indian and western educational thinkers, constitutional provisions for education and sociological basis for education under Paper-I; types of values and universal values under Paper-V; the concepts like team teaching, co-operative learning, simulation and games etc. under Paper-IV; sense of co-ordination and responsibilities as role of teacher and headmaster under Paper-VI of the curriculum and; many others topics under several teaching subjects. But, here too curriculum appeared to be more theoretical rather than practical which resulted in a score of 2.45.

The curriculum/Course-framework does not contain the objectives of teacher training or preparation programme. Further, each paper in the curriculum/course-framework begins with course objectives which are not specific but very general in nature, except in case of Teaching of Hindi, Sanskrit and Skill in Teaching with no course objectives. In most of the papers, these are poorly stated with incomplete statements e.g. in case of Paper-IV, Paper-V, Paper-VII (A), Paper-VII (B), Paper-VII (D), Paper-VII (E) etc. These course objectives are achieved through the contents of the papers and assessed through traditional essay type external examination at the end of the academic session. With the exception of the papers viz. Paper-VIII (A), VIII (B) and IX (A & B), all other papers have the provision of internal assessment with some specific criteria. This resulted in a score of 2.04 for both ‘Course Objectives’ and ‘Assessment and Evaluation’.
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- ‘Practical Work’ related to facilitation of instructional process, development of managerial competencies, improvement of teaching-learning situation, development of teaching competencies and organization of practical work for real teaching is highlighted in Paper-IX (A & B), which lays emphasis on acquisition of teaching skills through micro-teaching, simulation and real experiences through real teaching in schools. But here the curriculum lacks clear cut strategy for the acquisition of the same. Contents related to types of laboratories or resource centers, their effective utilization and other practical activities are missing in the curriculum. This resulted in a mean score of 2.00 for ‘Practical Work’.

- The criterion of ‘Critical Thinking and Problem Solving’ resulted in a score of 1.86 as the practical activities on this aspect are missing in the curriculum.

- The content of the most of the courses lacks logical organization and psychological division into different sub-topics. Even some of the topics have repetition within a paper or among different papers e.g. teaching aids, models of teaching, computer assisted or aided instruction or learning, PSI, Bloom’s taxonomy etc. The current theories, researches and latest information on vital aspects of secondary teacher education programme are not included in the curriculum. The curriculum has not been revised since 2004-2005 since its implementation. This resulted in a score of 1.81 to the criterion of ‘Course Contents’.

- The curriculum lacks in practical activities related to ‘Community Experiences’ though some of the topics with theoretical orientation are there in the curriculum which yielded a score of 1.45 for ‘Community Experiences’.

- The curriculum is too lengthy and if all the objectives of secondary teacher training programme are to be achieved in an effective manner, more time is required to transact the curriculum. Expected time to complete units in various papers is also not specified. However, the prescribed curriculum has to be transacted in an academic year which resulted in a mean score of 0.86.

- ‘Instructional Strategies’ are completely missing in the curriculum and even curriculum does not suggest for teachers' manual. This resulted in a score of 0.45 to ‘Instructional Strategies’.
In other words, only the criterion of ‘Interdisciplinary Approach’ appeared close to mean score of 3 (2.59) i.e. rating of good. Four of the substantive criteria of STECA specific ratings viz. ‘Course Objectives’, ‘Assessment and Evaluation’, ‘Personal & Professional Qualities’ and ‘Practical Work’ received mean scores of 2.04, 2.04, 2.45 and 2.00 respectively (Table – 4.1), all these appeared close to 2 i.e. rating of being adequate. The two criteria viz. ‘Course contents’ and ‘Critical Thinking and Problem Solving’ also appeared close to ‘2’ with mean rating scores of 1.81 & 1.86 respectively. The two criteria viz. ‘Community Experiences’ and ‘Duration of the Course’ appeared close to ‘1’ i.e. rating of being weak, with mean rating scores of 1.45 and 0.86 respectively. The last substantive criterion i.e. ‘Instructional Strategies’ appeared close to ‘0’ as these were completely missing in the curriculum.

The STECA holistic ratings also supports the conclusion that the curriculum is adequate as the three fundamental characteristics scored close to 2, with mean rating scores of the characteristics as 1.68, 1.59 and 1.55 for ‘Access to In-depth Understanding’, ‘Work Place Competencies’ and ‘Real World Curriculum’, respectively. However, the characteristic of ‘Standards of Teaching and Practices’ appeared close to ‘1’ with a mean rating score of 1.41.

Despite all the quantitative variations in various substantive criteria and fundamental characteristics, all the criteria and characteristics in majority contribute to make the curriculum of secondary teachers’ pre-service training programme as adequate. This indicates that the curriculum under study is neither very weak nor excellent, but of average quality, which suggests that there is lot of scope for making significant improvements in the curriculum in terms of its various substantive criteria and fundamental characteristics.

B) Relevance of the Subject Matter Content of the Various Papers of the Curriculum/Course-Framework

CA-1 Education in Emerging Indian Society (Paper-I)

The relevance of the topics of Paper-I is in the order of: ‘Education: Nature, meaning, objectives and agencies’; ‘Philosophy and Education: significance of studying philosophy in understanding educational practices and problems’; ‘Major Philosophical Systems – Their salient features and impact on education’;
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‘Knowledge about Indian constitution and its directive principles’; ‘Meaning of National integration and Emotional integration and their need’; ‘Meaning of new social order’; ‘Sociological basis of education’; ‘Educational Thinkers and their contribution in developing principles of education’ and ‘Indian thought and its contribution to educational practices’ and; ‘Education in western context with specific reference to Rousseau, Pestalozzi, Dewey and Russell: Their impact on educational thought and classroom practices in terms of progressive trends in education’.

➤ The relevance of the sub-topics of ‘Major Philosophical Systems – Their salient features and impact on education’ decreases as: ‘Pragmatism with reference to Dewey Instrumentalism & Experimentalism’; ‘Idealism with reference to Plato, Socrates and Advaita Philosophy’; ‘Naturalism with reference to Rousseau and Rabindra Nath Tagore’ and; ‘Realism with reference to Aristotle and Jainism’.

➤ Among the two sub-topics 7.1 ‘Various articles mentioned in the constitution related to education’ and 7.2 ‘Meaning of secularism, social goals, democracy and socialistic pattern of society’ of the main topic ‘Knowledge about Indian constitution and its directive principles’, the sub-topic 7.1 has been rated as more relevant in comparison to sub-topic 7.2.

➤ The relevance of sub-topics of ‘Meaning of National integration and Emotional integration and their need’ declines as: ‘Role of teacher and educational institution in achieving National and Emotional integration through democratic interaction’; ‘Explanation of Cultural heritage’; ‘Contribution of different religions (Hinduism, Buddhism, Sikhism, Islam, Christianity and Jainism) for the same cause and human upliftment’ and; ‘Philosophy of celebration of Indian festivals’.

➤ The relevance of sub-topics of ‘Meaning of new social order’ decreases as: ‘Eradication of illiteracy’; ‘Provisions made and channels started for educating socially, culturally and economically deprived groups’; ‘Achieving a learning society in terms of distance education’; ‘Objectives of NAEP’ and; ‘Means and measures taken for equality of educational opportunities in terms of Castes, tribes, Disabled, Gender and Minorities’.

➤ The relevance of sub-topics of ‘Sociological basis of education’ decreases as:
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‘Education as an agent of social change’; ‘Education as a means of national welfare through immediate welfare of society’; ‘Education as a tool of economic development’ and ‘Education and Human resource development’ and; ‘Relationship between Individual to individual and individual to society in terms of norms given by the existing social order’.


**CA-2 Development of Learner and Teaching-learning Process (Paper-II)**


The relevance of sub-topics of ‘Concept of growth and development’ is in the order of: ‘Role of teacher in facilitating development’; ‘General principles of development’ and ‘Types of development – Physical, Social, Intellectual, Spiritual and Emotional’ and; ‘Stage specific characteristics and developmental tasks’.
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- The relevance of sub-topics of 'Nature of learning; Learning theories' declines as: 'Learning by Insight'; 'Conditioning theories – Classical and Operant'; 'Trial and error theory' and; 'Information Processing (Roger’s) and Maslow’s Humanistic theory'.

- Among the two sub-topics 15.1 ‘Meaning, Scope and Objectives of Guidance services: Needs of guidance services’ and 15.2 ‘Role of teacher in organizing guidance programmes’ of the main topic ‘Guidance’, the sub-topic 15.2 has been rated as more relevant in comparison to sub-topic 15.1.

- Among the two sub-topics 5.1 ‘Learner Related, Teacher Related, Process Related and Content Related factors’ and 5.2 ‘Memory and forgetting’ of the main topic ‘Factors Influencing Learning and Teaching Process’, the sub-topic 5.1 has been rated as more relevant in comparison to sub-topic 5.2.

- In case of sub-topics 14.1 'Role of home and school in promoting mental health' and 14.2 'Characteristics of a mentally healthy person' of the main topic ‘Mental hygiene: Meaning and basic principles of mental hygiene’, both the topics have been rated as equally relevant.

CA-3 Development of Educational System in India (Paper-III)

CA-4 Essentials of Educational Technology (Paper-IV)

The relevance of the topics of Paper-IV is in the order of: ‘Modification of teaching behavior: Concept’; ‘Stages of teaching: Pre-active, interactive and post active stages of teaching along with operations involved in them’; ‘Communication: Concept, principles and models of communication’; ‘Definition of Educational technology; Distinction between Hardware & Software technologies and their role in modern educational practices’; ‘Use of Strategies viz. Teleconferencing, Programmed Instruction, CAI, Language laboratory’; ‘Hardware technologies: Important accessories and their applications’; ‘Psychological use of modern technologies’, ‘Models of teaching: Concept and elements of teaching model; Glaser’s basic teaching model’ and ‘Developing Programmed Instruction material - Linear and Branching programmes (tryouts and validation etc)’ and; ‘Meaning, Features, Advantages and Limitations of Technologies of Instruction’.

The relevance of sub-topics of ‘Modification of teaching behaviour: Concept’ is in the order of: ‘Micro-teaching’; ‘Simulation’; ‘Flander’s Interaction Analysis’ and ‘Reciprocal Category System (RCS)’ and; ‘Transactional analysis’.

The relevance of sub-topics of ‘Hardware technologies: Important accessories and their applications’ is in the order of: ‘New technologies like e-mail, internet etc’; ‘Computers’; ‘OHP’; ‘Still and Movie Projectors’ and ‘Audio-video recording instruments’ and; ‘TV’.

Among the two sub-topics 4.1 ‘Cone of experience (Edger Dale)’ and 4.2 ‘Multisensory instruction and its advantages’ of main topic ‘Psychological use of modern technologies’, the sub-topic 4.2 has been rated as more relevant in comparison to sub-topic 4.1.

The relevance of sub-topics of ‘Meaning, Features, Advantages and Limitations of Technologies of Instruction’ is in the order of: ‘Computer assisted instruction’; ‘Cooperative learning’; ‘Audio-tutorial system’ and ‘Personalized system of instruction’ and; ‘Simulation and games’.

CA-5 Education for Values, Environment and Human Rights (Paper-V)

The relevance of topics of Paper-V is in the order of: ‘Values: Concept, nature, classification of values; Need for the Education of Human values’; ‘Five Universal
values: Truth, Righteous conduct, Peace, Love and Non-violence and their sub values as listed by Gokak Committee'. 'Role of school in Environmental Conservation and Sustainable Development' and 'Human Rights Education at Secondary Level Curriculum and activities for Human Rights Education'; 'Environment: meaning, scope, principles and objectives of Environmental Education'; 'Environmental Hazards: causes & effects (Global and local). Green House Effect, Ozone layer Depletion, Acid Rain, Polar Melting, Rising of Sea Level and their implications' and 'Human Rights: Concept, Foundations, and historical background; Universal Declaration of Human Rights and Indian Constitution Provisions'; 'Methods of teaching Human Values: Direct, Indirect: Integrating values with curricular and co-curricular activities': 'Enforcement of Human Rights' and; 'Environmental pollution: Types, Causes, Remedies' and 'Sources of Values: Cultural, Religio-spiritual and constitutional: Values as enshrined in the Constitution of India'.

The relevance of the sub-topics of 'Enforcement of Human Rights' decreases as: 'Concerns for enforcement - necessity, historical background and present status'; 'Formal mechanisms – UN organs and National levels, NGOs and Press and Media' and; 'Mechanisms in schools for the protection of Human Rights'.

CA-6 School Management (Paper-VI)

The relevance of topics of Paper-VI is in the order of: 'Time-table: Concept, importance, types, principles & problems of time-table construction, role of teacher'; 'Teacher: Teaching as Profession – Characteristics. Professional traits of a teacher'; 'School management: Concept, characteristics and scope' and 'School Head: Qualities and duties of school head as per H.P. Education Code'; 'Co-curricular activities: Concepts, types, importance, principles of organization of co-curricular activities and role of teacher'; 'School-records and registers: Types and need. How to maintain records?'; 'Supervision and Inspection: Concept, Types, Scope and Aims of supervision. Supervision in schools of Himachal Pradesh (Supervision Staff, supervision report, steps in conducting supervision and guidelines to supervision staff)'; 'Physical Infrastructure: Availability, adequacy and utilization' and 'Management approaches: Man-Power. Cost-Benefit. Social-Demand. and Social-
Justice Approach. Decision making: Concept and techniques’ and; ‘Educational administration in H.P. State’.

Among the two sub topics 5.1 ‘Role of Teacher – Instructional Input, manager, facilitator, counselor, and community leader’ and 5.2 ‘Classroom management: Concept, principles, Influencing factors and techniques of Classroom Management’ of main topic ‘Teacher: Teaching as Profession – Characteristics, Professional traits of a teacher’, the sub-topic 5.2 has been rated as more relevant in comparison to the sub-topic 5.1.

In case of sub-topics 4.1 ‘Role of Head in planning, monitoring, supervision and evaluation’ and 4.2 ‘Delegation of authority and accountability’ of the main topic ‘School Head: Qualities and duties of school head as per H.P. Education Code’, the sub-topic 4.1 has been rated as more relevant in comparison to the sub-topic 4.2.

Among the two sub-topics 3.1 ‘Management of space’ and 3.2 ‘Problems and difficulties in space management and allocation procedures’ of the main topic ‘Physical Infrastructure: Availability, adequacy and utilization’, the sub-topic 3.2 has been rated as more relevant in comparison to the sub-topic 3.1.

The relevance of the sub-topics of ‘Educational administration in H.P. State’ decreases as: ‘Function of the State and State Board of School Education in controlling secondary schools’; ‘Control of Education’ and; ‘The administrative structure of education in the state’.

CA-7 Teaching of Physical Sciences [Paper-VII (A)]

The relevance of topics of Paper-VII (A) is in the order of: ‘Planning for teaching’; ‘Justification for including science as a subject in school curriculum’; ‘Methods of teaching Physical Sciences’; ‘Co-curricular and non-formal approaches: Activity approaches and non-formal methods of science teaching in terms of Field trips, school gardening, science clubs, visit to science museums; organizing science fairs and excursion’; ‘Teaching aids’ and ‘Diagnostic testing and remedial teaching: Developing formative evaluation instruments as aids to learning’; ‘Evaluating outcomes of science teaching’ and ‘Designing lesson plans: formation of unit and lesson plans’; ‘Curriculum and resource utilization’; ‘Nature of modern sciences’; ‘Defining desired outcomes (Statement of objectives) for different levels of
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education’ and ‘Curricular Accessories and support material – Textbooks, Journals, Handbooks, Students’ workbooks, Display slides, Laboratory materials and Audio-visual support materials’ and; ‘Major models of instruction useful for science education’.

The relevance of sub-topics of ‘Planning for Teaching’ declines as: ‘Developing Yearly plans, Unit plans, lesson plans, content analysis and identification of important concepts’; ‘Preparation, selection and use of teaching aids’ and ‘Innovations in teaching the subject in terms of Team-teaching, programmed teaching, seminars and computer assisted teaching’; ‘Preparation and Development of Improvised apparatus’ and; ‘Use of Piagetian, Brunerian, Gagnesian principles in developing lesson plan’.

The relevance of sub-topics of ‘Justification for including science as a subject in school curriculum’ declines as: ‘Objectives of teaching physical sciences’ and ‘Taxonomy of educational objectives’; ‘Concept of entering and terminal behavior’ and; ‘Organizing learning experiences for achieving specified behavioural outcomes’.

Among the two sub-topics 8.1 ‘Lecture-demonstration method, Project method, Problem-solving method and CAI’ and 8.2 ‘Analysis of teaching methods used by teachers in schools for teaching Physical Sciences’ of the main topic ‘Methods of teaching Physical Sciences’, the sub-topic 8.1 has been rated as more relevant in comparison to the sub-topic 8.2.

In case of sub-topics 13.1 ‘Classification of teaching aids and their description’ and 13.2 ‘Importance of teaching aids in teaching physical sciences’ of the main topic ‘Teaching Aids’, both the topics are rated as equally relevant.

The relevance of sub-topics of ‘Evaluating outcomes of science teaching’ declines as: ‘Preparing different types of items in accordance with the Blooms’ taxonomy of instructional objectives’; ‘Construction of norm-referenced and criterion-referenced tests’ and; ‘Limitations and advantages of different types of items’.

The relevance of sub-topics of ‘Curriculum and resource utilization’ is in the order of: ‘Practical Work in science teaching’ and ‘Report writing for science projects’.
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‘Adapting the curriculum to local needs and requirements and the availability of local resources availabilities’ and; ‘Approaches to curriculum designing’.

➤ The relevance of sub-topics of ‘Nature of modern sciences’ decreases as: ‘Nature of physical sciences’; ‘Professions in the area of sciences’ and; ‘Eminent World scientists’ and ‘Eminent Indian scientists’.

CA-8 Teaching of Life Sciences [Paper-VII (B)]

➤ The relevance of topics of Paper-VII (B) is in the order of: ‘Methods of Teaching’; ‘Evaluation’; ‘Development of instructional material’ and ‘Teaching aids’; ‘Importance, Aims and Objectives of Life Sciences’; ‘Text book’ and ‘Laboratory organization’; ‘Content and Pedagogical Analysis’ and; ‘Organization of Biological Associations, fairs and exhibition’.

➤ Among the two sub-topics 7.1 ‘Lecture-demonstration method, Project method, Problem-solving method and CAI’ and 7.2 ‘Analysis of teaching methods used by teachers in schools for teaching life sciences’ of the main topic ‘Methods of Teaching’, the sub-topic 7.1 has been rated as more relevant in comparison to the sub topic 7.2.

➤ In case of sub-topics 8.1 ‘Purpose of Evaluation and types of evaluation: Diagnostic, Formative and Summative’ and 8.2 ‘Steps in the construction of achievement test; attributes of a good achievement test’ of the main topic ‘Evaluation’, both the sub-topics are rated as equally relevant.

➤ The relevance of various sub-topics of ‘Development of instructional material’ is in the order of: ‘Preparation of teaching aids’; ‘Development of aquarium, vivarium etc.’ and ‘Development of demonstration experiments’; ‘Lesson Planning’ and; ‘Unit Planning’.

➤ Among the two sub-topics 4.1 ‘Classification of teaching aids and their description’ and 4.2 ‘Importance of teaching aids in teaching life-sciences’ of the main topic ‘Teaching Aids’, both the sub-topics are rated as equally relevant.

➤ The relevance of various sub-topics of ‘Importance, Aims and Objectives of Life Sciences’ is in the order of: ‘Importance of Life Science in School curriculum’ and ‘Formulation of specific objectives in behavioural terms’; ‘General aims and
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objectives of teaching Life Science and Bloom's taxonomy of educational objectives.

➢ Among the two sub-topics 5.1 'Characteristics of good textbook on life sciences' and 5.2 'Evaluation of the textbook' of the main topic 'Textbook', both the sub-topics are rated as equally relevant.

➢ The relevance of sub-topics of 'Laboratory organization' is in the order of: 'Layout of laboratory' and 'Accident prevention and first aid requirements in life-science laboratory', and 'Buying and care of equipments for life-science laboratory'.

➢ Among the two sub-topics 2.1 'Curriculum: Concept, scope and Principles of Curriculum construction' and 2.2 'Principles of Analysis of the Curriculum of Life Sciences at secondary level in terms of its relevance and suggestions for improvement' of the main topic 'Content and Pedagogical Analysis', the sub-topic 2.1 has been rated as more relevant in comparison to the sub-topic 2.2.

CA-9 Teaching of Mathematics [Paper-VII (C)]

➢ The relevance of topics of Paper-VII (C) is in the order of: 'Meaning and importance/purpose of a lesson plan'; 'Evaluation in mathematics'; 'Objectives of teaching mathematics in terms of instruction and behavior'; 'Meaning of Mathematics'; 'Principle and rationale of curriculum development'; 'Methods of teaching mathematics: Analysis of teaching methods used by teachers in schools for teaching mathematics'; 'Textbooks in mathematics' and 'Education of exceptional children in mathematics'.

➢ The relevance of sub-topics of 'Meaning and importance/purpose of a lesson plan' decreases as: 'Meaning and Purpose of a Unit and unit plan'; 'Proforma of a lesson plan and its rationality'; 'Developing/Preparing low cost improvised teaching aids relevant to local ethos' and: 'Skill in maintaining and using blackboard, models, charts, TV, films, video tapes and VCR'.

➢ Among the two sub-topics 2.1 'Approaches of teaching mathematics viz. Inductive, deductive, analytical, synthetic, heuristic, project and laboratory' and 2.2 'Using various techniques for teaching mathematics viz. oral, written, drill, assignment and supervised study' of the main topic 'Objectives of teaching mathematics in terms of
instruction and behavior’, the sub-topic 2.2 has been rated as more relevant in comparison to the sub-topic 2.1.

➢ In case of sub-topics 1.1 ‘History of Mathematics’ and 1.2 ‘Contribution of mathematician’s with reference to Bhaskaracharya, Aryabhatta, Leelabathi, Ramanujam and contributions of Euclid, Pythagorous, Rene-Descarte’ of the main topic ‘Meaning of Mathematics’, the sub-topic 1.2 has been rated as more relevant in comparison to the sub-topic 1.1.

➢ Among the two sub-topics 5.1 ‘Preparing syllabi both logically and psychologically according to the age groups of children’ and 5.2 ‘Critical study of existing syllabi of mathematics syllabus of Himachal Pradesh at the secondary level’ of the main topic ‘Principle and rationale of curriculum development’, the sub-topic 5.1 has been rated as more relevant in comparison to the sub-topic 5.2.

➢ In case of sub-topics 6.1 ‘Qualities of a good textbook in mathematics, its functions and process’ and 6.2 ‘Evaluation of text book in mathematics’ of the main topic ‘Textbooks in mathematics’, the sub-topic 6.1 has been rated as more relevant in comparison to the sub-topic 6.2.

➢ Among the two sub-topics 7.1 ‘Backwardness in mathematics – diagnosis and remedies’ and 7.2 ‘Enrichment programmes for the gifted children in mathematics’ of the main topic ‘Education of exceptional children in mathematics’, the sub-topic 7.1 has been rated as more relevant in comparison to the sub-topic 7.2.

CA-10 Teaching of Social Sciences [Paper-VII (D)]

➢ The relevance of various topics of Paper-VII (D) is in the order of: ‘Need for teaching the subjects under Social Sciences/studies (History, Geography, Civics, sociology and Economics) in schools’; ‘Purpose of evaluation in social studies’; ‘Planning of instruction: Unit and lesson plan’ and ‘Objectives of teaching social studies’; ‘Construction of norm-referenced and criterion-referenced tests, Preparing different types of items in accordance with Blooms’ taxonomy of instructional objectives. Limitations and advantages of different types of items’; ‘Instructional strategies, methods and models’ and; ‘Principles of designing a social studies curriculum with weightage to component areas; Approaches to organizing social studies curriculum in terms of Correlation, integration, concentric, spiral, unit and
chronological approaches' and 'Arranging and organizing field trips to places of
cultural importance through planning, preparing, executing, recording and following
up the field trip for learning the underlying importance of content of the subject;
Team teaching, organizing social studies clubs; social studies laboratories and
thought provoking programmes like quizzes and word searches etc.'.

- The relevance of sub-topics of the main topic 'Need for teaching the subjects under
Social Sciences/studies (History, Geography, Civics, sociology and Economics) in
schools' decreases as: 'Concept of Social studies and how it differs from social
sciences'; 'Present perception about social studies/social sciences' and; 'Rationale
for including these areas in school curriculum'.

- The relevance of sub-topics of 'Purpose of evaluation in social studies' is in the
order of: 'Formative and summative evaluation and their salient features';
'Preparation of unit tests and tests of performance like product preparation, model
construction, enactment of role play etc.' and 'Remedial Teaching' and; 'Question
proportion and objectivity in essay type examinations'.

- Among the two sub-topics 2.1 'Objectives of teaching the subject at different levels'
and 2.2 'Discipline-oriented teaching of social studies and social reconstruction
approach' of the main topic 'Objectives of teaching social studies', the sub-topic 2.1
has been rated as more relevant in comparison to the sub-topic 2.2.

- In case of sub-topics 4.1 'Importance of instructional strategies' and 4.2 'Strategies
for teaching social studies in terms of specific method viz. lecture, lecture cum
discussion, projects and source methods, socialized recitation and supervised study'
of the main topic 'Instructional strategies, methods and models', both the sub-topics
have been rated as equally relevant.

**CA-11 Teaching of English [Paper-VII (E)]**

- The relevance of the topics of Paper-VII (E) is in the order of: 'Teaching of prose,
poetry, composition and grammar'; 'Stating objectives in behavioural terms'; 'Aims
and objectives of teaching English'; 'Difference between approach and method.
Major methods of teaching English: Grammar-cum-translation method, direct
method and bilingual method'; 'Nature of language'; 'Importance of language',
'Structural approach: Meaning of structure and pattern, principles of selection and
Summary, Conclusions, Educational Implications and Suggestions for Further Research

The relevance of various topics of Paper-VII (F) is in the order of: ‘हिन्दी में उच्चारण-शिक्षण, अक्षर-विन्यास एवं विराम चिह्न’; ‘मातृभाषा शिक्षण: अर्थ, स्वरूप, महत्त्व एवं ब्लूम द्वारा निर्धारित अनुदेशात्मक उद्देश्य’, ‘पाठ योजना का अर्थ, महत्त्व एवं रूप रेखा’ and ‘हिन्दी की विभिन्न विधाओं का शिक्षण’; ‘भाषाई कौशलों का सामान्य ज्ञान’ and ‘हिन्दी में मूल्यांकन एवं गृह काय्य’; ‘हिन्दी पादर्शक निर्माण एवं समीक्षा’; ‘हिंदी शिक्षण में अनुदेशात्मक सामग्री का अर्थ, महत्त्व एवं उचित प्रयोग’; ‘हिन्दी पादर्शक कौशल की विशेषताएं एवं समीक्षा’ and; ‘सूक्ष्म शिक्षण द्वारा विभिन्न कौशलों का ज्ञान’.

In case of sub-topics 7.1 ‘कविता शिक्षण (रस पाठ एवं बोध पाठ के रूप में)’, 7.2 ‘गद्दि शिक्षण’, 7.3 ‘व्याकरण शिक्षण (औपचारिक एवं अनौपचारिक)’ and 7.4 ‘रचना शिक्षण (कहानी रूप में, पत्र एवं निबन्ध)’ of the main topic ‘हिंदी की विभिन्न विधाओं का शिक्षण’, all the sub-topics have been rated as equally relevant.

The relevance of various sub-topics of ‘भाषाई कौशलों का सामान्य ज्ञान’ is in the order of: ‘लेखन कौशल’, ‘श्रवण कौशल’ and ‘पठन कौशल’ and; ‘भाषण कौशल’.

Among the sub-topics 10.1 ‘हिन्दी में मूल्यांकन अर्थ एवं स्वरूप’, 10.2 ‘विधाओं में मूल्यांकन प्रक्रिया’ and 10.3 ‘हिन्दी शिक्षण में गृह-कार्य स्वरूप एवं संशोधन’ of the
main topic ‘हिन्दी में पूर्ववर्ती एवं गृह-कार्य’, all the sub-topics have been rated as equally relevant.

Among the sub-topics 4.1 ‘प्रश्न कौशल’, 4.2 ‘उदाहरण कौशल’, and 4.3 ‘श्लोक कौशल’ of the main topic ‘सुस्पष्ट शिक्षण द्वारा विभिन्न कौशलों का ज्ञान’, all the sub-topics have been rated as equally relevant.

CA-13 Teaching of Commerce [Paper-VII (I)]

The relevance of topics of Paper-VII (I) is in the order of: ‘Meaning, nature and concept of Commerce’; ‘Methods of teaching and Skills of Teaching’ and ‘Evaluation’: ‘Content and Pedagogical analysis of Office, Bank, Trade and Insurance (Demonstration of one of the above topics by teacher educators following the points: Identification of the concepts, Listing behavioural outcomes, listing activities and experiments and listing evaluation techniques)’ and; ‘Development of Instructional Material’.

The relevance of sub-topics of ‘Meaning, nature and scope of commerce’ is in the order of: ‘Meaning, Nature and Scope of Commerce’; ‘Aims, objectives and values of teaching commerce’ and ‘Stating objectives in behavioural terms’ and; ‘Place of commerce in secondary schools curriculum’ and ‘Bloom’s taxonomy of objectives’.

Among the two sub-topics 4.1 ‘Method: Discussion method. Project Method and Problem-solving method’ and 4.2 ‘Skills of teaching commerce (Skill of Narration, probing questions and stimulus variation)’ of the main topic ‘Methods of Teaching and Skills of teaching’, the sub-topic 4.2 has been rated as more relevant in comparison to the sub-topic 4.1.

The relevance of the sub-topics of ‘Evaluation’ is in the order of: ‘Meaning and importance of evaluation’ and ‘Evaluation devices – Written, oral, observation and records’ and; ‘Preparation of unit test’.


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CA-14 Work Education and Work Experience (Theory) [Paper-VIII (A)]

The relevance of topics of Paper-VIII (A) is in the order of: ‘Preparing teaching aids and handling of equipments’; ‘Chalk board writing’ and ‘Computer applications’; ‘Medical first aid’; ‘Population/Environmental awareness campaign’; ‘Physical Education’; ‘Yoga’; ‘Library organization’ and ‘Campus beautification’ and; ‘Photography’.

CA-15 Work Education and Work Experience (Practicum) [Paper-VIII (B)]

The usefulness and relevance of practical topics of Paper-VIII (B) is in the order of: ‘Computer applications’; ‘Chalk-board writing’; ‘Preparing teaching aids and handwriting equipments’; ‘Yoga’; ‘Medical first aid’; ‘Population/Environment awareness campaign’; ‘Physical Education’; ‘Campus beautification’; ‘Library organization’ and; ‘Photography’.

CA-16 Skill in Teaching [Paper-IX (A & B)]

The relevance of various components of Paper-IX (A & B) is in the order of: ‘Real Teaching in schools’; ‘Micro-teaching for developing teaching skills’; ‘Simulation for helping real teaching in schools’; ‘Micro-teaching and simulation as continuous process’ and; ‘Observation lessons’.

C) Perceptions of Teacher Educators for the Modification of Various Papers

Most of the teacher educators were of the view that more content based on emerging issues should be added in all the papers and less relevant topics should be removed.

D) Suggestions of Teacher Educators for Restructuring Contents of Various Papers

Some of the teacher educators suggested that topics and sub-topics should be clearly specified in all the papers. Repetition of topics and sub-topics should be avoided and time to complete a particular section and topic in hours should be specified.

E) Views of Teacher Educators about the Weightage to the Observations of Teacher Educators and Essentiality, Duration and, Schedule of Teaching Practice

Majority of teacher educators were of the view that weightage to the observations of teacher educator in-charge during practice teaching, in final skill-in-teaching exam should be given.
Majority of teacher educators favoured the weightage of more than 30 marks to the observations of teacher educator in-charge during practice teaching, in final skill-in-teaching exam.

All the teacher educators were of the view that practice teaching should be the essential component of teacher training programme. This finding is also supported by the finding of the study conducted by Srivastava (1970).

Majority of teacher educators were of the view that duration of practice teaching should be more than 30 days in the training programme.

More than half of the teacher educators were of the view that practice teaching should be carried out in two stretches.

5.2.2 CURRICULUM TRANSACTION PROCEDURES

A) Planning

A large majority of the teacher educators carry out planning for academic activities.

Out of those teacher educators who carry out planning for academic activities, among them most preferred type of planning was daily lesson planning followed by course planning; weekly planning; unit planning; yearly planning; monthly planning and; fortnightly planning which was the least preferred type of planning.

The main reasons of planning for academic activities by the teacher educators are in the order of: i) Making teaching-learning process quite effective and efficient; ii) helping a teacher in delivering the quality lessons; iii) playing a substantial role in the execution of any task and helping in proper realization of time and energy; iv) catering to the proper realization of aims or purposes and; v) necessary for the training programme.

All the teacher educators who do not carry out planning for academic activities, opined that it is not possible to follow the planning exactly as the main reason of non-planning.

A large majority of the teacher educators carry out planning for the organization of co-curricular activities.

Majority of the teacher educators prepare annual activity calendar; few of them carry out weekly planning and very few monthly planning for the organization of co-curricular activities.
The main reasons of planning for the organization of co-curricular activities by the teacher educators are in the order of: i) Helping in fostering desired qualities among the prospective teachers; ii) making organization and execution process quite effective and efficient; iii) playing a substantial role in the execution of any task; iv) helping in proper realization of time and energy and; v) necessary for the training programme.

The teacher educators who do not carry out planning for the organization of co-curricular activities, opined that: i) It is not possible to follow the planning exactly; ii) there is lack of time for planning and; iii) lack of time for the organization of co-curricular activities.

B) Teaching Method(s) and Strategies

The use of various teaching methods by the teacher educators, for transacting the contents of the curriculum/course-framework, is in the order of: i) Lecture; ii) Discussion; iii) Lecture-demonstration; iv) Demonstration; v) Assignment; vi) Presentations; vii) Problem-solving; viii) Seminars; ix) Brain-storming; x) Project; xi) Self-discovery; xii) Quiz/Debate and; xiii) Play/Drama. This finding is also supported by the finding of Joshi (1974).

Majority of teacher educators expressed that they do not get any guidance from NCTE/NCERT regarding the use of various teaching methods for transacting the contents to the prospective teachers in the classroom.

Majority of the teacher educators expressed that separate periods for library consultation are not provided to the prospective teachers.

Majority of the teacher educators, who responded positively for separate period for library consultation, expressed that for library consultation, the prospective teachers are provided vacant periods of teacher educators.

The teacher educators, who expressed that in their colleges of education a separate period for library consultation is not provided, pointed out the following reasons for the same: i) lengthy syllabus and; ii) very short duration of the training programme.

A large majority of the teacher educators expressed that guest lectures are organized in their colleges of education.
Some of the teacher educators expressed that guest lectures were organized twice or thrice. Few of them expressed that guest lectures were organized more than thrice or only once, whereas, very few of them expressed that guest lectures were not organized in the present year.

The teacher educators who expressed that guest lectures are not organized in their colleges of education, pointed out the following reasons for the same as: i) non-availability of resource persons; ii) high investment on the organization of such activities; iii) management or principal do not permit and; iv) lack of time.

C) Media: Print and Electronics

Most of the teacher educators expressed that in their colleges of education, the availability of audio aids is in the order of: Tape-recorders and; radios.

The availability of various visual aids in the colleges of education is in the order of: i) Chalk boards, which are available in all the colleges of education; ii) Pictures and charts; iii) maps; iv) OHPs; v) real objects and specimen; vi) slide projectors and; vii) slides. On the other hand most of the teacher educators expressed that film strips and more than half of the teacher educators expressed that bulletin boards are not available in their colleges of education.

The availability of various audio-visual aids in the colleges of education is in the order of: i) Computers, which are available in all the colleges of education; ii) VCD/DVD player; iii) television and; iv) LCD/DLP projector.

The utilization of various audio, visual and audio-visual teaching aids by the teacher educators, is in the order of: i) Chalk board; ii) Pictures and Charts; iii) OHP; iv) Computer; v) LCD/DLP projector; vi) Real objects and specimen; vii) Maps; viii) Slide projector; ix) VCD/DVD player; x) Television; xi) Tape-recorder; xii) Film Strips and; xiii) Radio.

D) Evaluation Strategies (Assessment and Evaluation Procedures)

For assessing prospective teachers’ performance, majority of the teacher educators expressed that both internal and external modes of assessment are used, whereas very few of them expressed that only internal mode of assessment is used.

Following components viz. i) Attendance; ii) participation in various activities; iii) performance during micro-teaching and simulation and; iv) achievement in unit tests.
and house exams, are given weightage for assessing the performance of prospective teachers.

- The use of various types of tests, by the teacher educators, is in the order of: i) Verbal and oral tests; ii) combination of various types of tests; iii) essay type tests; iv) short answer type tests and; v) objective type tests.

- More than half of the teacher educators assess and evaluate prospective teachers' performance on continuous basis i.e. daily, whereas some weekly, monthly and a few quarterly/half-yearly, fortnightly and annually.

- For the improvement of the evaluation procedures, most of the teacher educators suggested that duration of the training programme i.e. B.Ed. programme should be increased from one year to two years.

E) Organization of Co-curricular activities

- All the teacher educators expressed that teacher's day is celebrated. A large majority of the teacher educators (more than 90 percent) expressed that debate/declamation on topics of current importance and seminars are organized. Most of the teacher educators (more than 75 percent) expressed that quizzes and teaching aid competitions are organized in the colleges of education. More than a half of the teacher educators (55 to 59 percent) expressed that work-shops and chalk board writing competitions are organized. Less than half of the teacher educators expressed that science day is celebrated. Few of them (25 to 32 percent) expressed that orientation programmes and conferences are organized, and very few expressed that micro skill in teaching competitions are organized in their colleges of education.

- All the teacher educators expressed that mehandi, rangoli, singing and dance competitions are organized in their colleges of education. Majority of the teacher educators (76 to 84 percent) expressed that talent hunt and poetry competitions are organized. More than a half of the teacher educators (56 to 58 percent) expressed that flower arrangement and collage making competitions are organized. Less than a half of them (44 to 47 percent) expressed that greeting card making and best out of waste competitions are organized, and very few of them (5 to 9 percent) expressed that folk dance/skit/play/modeling/mimicry/ad-mad show etc. and fancy dress competitions are organized in their colleges of education.
Summary, Conclusions, Educational Implications and Suggestions for Further Research

Most (80 to 93 percent) of the teacher educators expressed that chess and carom board competitions, volley ball and badminton matches are organized in the colleges of education. More than a half (52 to 56 percent) of them expressed table tennis and cricket matches are organized. Less than a half (41 percent) of them expressed football matches are organized and very few (less than 10 percent) of them expressed hockey matches and athletics are organized in their colleges of education.

Most of the teacher educators (75 to 89 percent) expressed that activities like celebration of environment day, awareness rallies and plantation are organized in their colleges of education. Few of them (21 to 36 percent) expressed that adult literacy activities, social forestry and NSS campaigns are organized and very few of them (3 percent) expressed that activities like blood donation, red ribbon and rouse and scout are organized in their colleges of education.

F) Practice Teaching

Micro-teaching

Lecture-demonstration method was used by the large majority of the teacher educators for orienting prospective teachers to micro-teaching.

A large majority of the teacher educators used to give demonstration lessons on specific teaching skills.

The teacher educators who give demonstration lessons opined that demonstration lessons bring clarity about the various components of a particular skill and make the understanding of the skill easy for the prospective teachers.

The teacher educators who do not give demonstration lessons responded that demonstration lessons are given only by the teacher educators teaching educational technology.

Skill of ‘Explaining’, ‘Stimulus variation’ and ‘Use of verbal and non-verbal reinforcers (Reinforcement)’ are practised by the prospective teachers as per the views of all the teacher educators. Skill of ‘Probing question’, ‘Use of Black board’, ‘Illustration with example’, and ‘Introducing the lesson’ are practised as per the opinions of large majority of the teacher educators. The skill of ‘Use of Teaching Aids (Other than blackboard)’ is practised by the prospective teachers as per the views of less than half of the teacher educators. Skill of ‘Appropriateness of
instructional objectives', 'Management of the class', 'Creating set for introducing the lesson', 'Promoting pupil participation', 'Organization of the content in the lesson', 'Giving assignment', 'Delivery and Distribution of questions', 'Closure of the lessons', 'Evaluation of pupil progress', and 'Pacing of the lesson' are practised as per the opinions of the few of the teacher educators. Skill of 'Response Management' and 'Diagnosing learning difficulties and taking remedial measures' are practised by the prospective teachers as per the views of very few of the teacher educators in their colleges during micro-teaching sessions.

In other words, different - different teaching skills are practiced by the prospective teachers in different colleges of education.

- 10 micro-lessons per teaching subject are practiced by the prospective teachers as per the responses of the large majority of the teacher educators.
- Micro-teaching is carried out for different durations in the colleges of education.
- More than a half of the teacher educators were satisfied with the procedure and duration of the micro-teaching.
- The teacher educators (56.54 percent) who were feeling satisfied pointed out that micro-teaching goes as per time table and each prospective teacher gets ample time to practice a particular micro-teaching skill.
- The teacher educators (43.46 percent) who were feeling unsatisfied pointed out that there is no clear cut strategy for its execution and time is less than the time required for this activity.
- All the teacher educators expressed that records of all the micro-teaching lessons practised during micro-teaching are maintained by the prospective teachers.

Simulation

- Lecture-demonstration method was used by the large majority of the teacher educators for orienting prospective teachers to simulation.
- 5 macro-lessons per teaching subject are practiced by the prospective teachers during simulation as per the responses of the most of the teacher educators.
- Simulation is carried out for different durations in the colleges of education.
- More than a half of the teacher educators were satisfied with the procedure and duration of the simulation.
Summary, Conclusions, Educational Implications and Suggestions for Further Research

➢ The teacher educators (58.41 percent) who were feeling satisfied pointed out that simulation goes as per time table and is not focused on a particular skill or component of the skill and prospective teachers teach independently.

➢ The teacher educators (41.59 percent) who were feeling dissatisfied pointed out the following reasons for their dissatisfaction: i) No clear cut strategy for its execution and; ii) less time to complete the simulation as it is carried out after the completion of micro-teaching.

➢ All the teacher educators expressed that records of all the macro-lessons practiced by the prospective teachers during simulation are maintained by the prospective teachers.

Real Teaching in Schools

➢ The real teaching practice of prospective teachers is mostly conducted in government schools, whereas it is also conducted in some of government aided and private schools.

➢ The duration of real teaching practice of prospective teachers is 30 days as per the responses of the large majority of the teacher educators.

➢ Mostly 20 lessons per teaching subject are delivered by the prospective teachers during real teaching practice in schools.

➢ Mostly 10 lessons are observed by each prospective teacher during real teaching practice in schools.

➢ Most of the prospective teachers participate in morning assembly, prepare and maintain attendance registers, check home work given to the students and also prepare school leaving certificates.

➢ All the teacher educators expressed that records of all the activities performed during real teaching practice in schools are maintained by the prospective teachers.

➢ More than a half of the teacher educators were satisfied with the procedure and duration of the real teaching practice and less than a half of them were not.

➢ The teacher educators (54.21 percent) who were feeling satisfied pointed out that in this duration pupil teachers get adequate acquaintance about the functioning of school and get enough time to teach and work in school.
The teacher educators (45.79 percent) who were feeling dissatisfied pointed out the following reasons for their dissatisfaction: i) The functioning of schools cannot be understood properly by the prospective teacher in this short duration and; ii) justice cannot be done with teaching.

During final skill-in-teaching exam the prospective teachers are evaluated on the basis of final lesson only.

Mostly 2-5 minutes (only) are spent by the external examiner for evaluating a prospective teacher in final skill-in-teaching exam.

Mostly the prospective teacher is evaluated by one or two members of the team and not by the entire team of all the three examiners.

Mostly two days are taken by the team of external examiners to evaluate a unit of 100 prospective teachers.

Majority of the teacher educators were not satisfied with the mode of prospective teachers' evaluation in final skill-in-teaching exam. This finding is also supported by the findings of the study conducted by Srivastava (1970).

The teacher educators (71.96 percent) who were feeling dissatisfied with the mode of prospective teachers' evaluation in final skill in teaching exam pointed out the following reasons for their dissatisfaction: i) No consideration for the overall performance of the prospective teacher throughout the academic session; ii) no weightage to the observation of teacher educator in-charge during teaching practice; iii) not possible to evaluate a prospective teacher in 2-5 minutes; iv) not possible to evaluate 100 students in two days that too in 3-4 hours duration in a day and; v) favouritism towards the students who are close to the teacher educators. close to the examiner.

5.2.3 AVAILABILITY AND UTILIZATION OF VARIOUS RESOURCE CENTERS IN THE TRAINING PROGRAMME

Summary, Conclusions, Educational Implications and Suggestions for Further Research

- Computer resource centre exists as a separate unit in all the colleges; Social Sciences, Hindi Language and English Language resource centers as separate unit in most of the colleges; Psychology and Educational Technology resource centers as separate units in more than half of the colleges and; Physical Sciences resource centre as a separate unit in a little more than half of the colleges. On the other hand, Mathematics resource centre exists as a multipurpose unit in most of the colleges, whereas Life Sciences resource centre exists as multipurpose unit in a little more than half of the colleges.

- Adequacy of materials and equipments in various resource centers is in the order of: Computer; Psychology; English Language; Educational Technology; Life Sciences; Physical Sciences; Social Sciences; Hindi Language and; Mathematics resource centre.

- The new materials and latest equipments are not added yearly in Physical Sciences, Life Sciences, Mathematics, Social Sciences, English Language, Hindi Language, Computer, Psychology and Educational Technology resource centers in majority of the colleges.

- For conducting experiments or carrying out activities by the prospective teachers: Computer and Psychology resource centers are used by all the teacher educators; Physical Sciences, Life Sciences, English Language and Educational Technology resource centers are used by more than half of the teacher educators. On the other hand, for conducting experiments or carrying out activities by the prospective teachers, Hindi Language resource center is not used by majority of the teacher educators, whereas Mathematics and Social Sciences resource centers are not used by more than half of the teacher educators.

- Mostly 1-5 experiments or activities are conducted or carried out by the prospective teachers in Psychology, Physical Sciences, Hindi Language and Educational Technology resource centers. whereas 6-10 experiments or activities are conducted or carried out by the prospective teachers in Computer, Life Sciences, Mathematics, Social Sciences and English language resource centers.

- All the teacher educators expressed that they teach prospective teachers the art of making good use of Computer and Psychology resource centers in real situations. On
the other hand, most of the teacher educators expressed that they do not teach prospective teachers the art of making good use of Hindi Language, Social Sciences, Physical Sciences, English Language, Mathematics and Life Sciences resource centers in real situations.

- The teacher educators who do not teach prospective teachers the art of making good use of resource centers in real situations pointed out the following reasons: i) Lack of proper training/orientation of teacher educators on the use of resource centre; ii) lack of time; iii) absence of experiments or activities in the syllabus or curriculum and; iv) unavailability of manuals on the use of resource centers.

- The usefulness of various resource centers, as per the responses of teacher educators, is in the order of: Computer; Psychology; Social Sciences; English Language; Mathematics; Educational Technology; Life Sciences; Physical Sciences and; Hindi Language resource center.

- The teacher educators who expressed that they do not find the resource centers useful in the training programme pointed out the following reasons: i) Lack of time and; ii) No specific guidelines on the use resource centers in the curriculum.

- 41.59 percent of the teacher educators suggested that list of experiments or activities to be carried out by the prospective teachers should be specified in the curriculum or syllabus. 31.31 percent suggested that manuals for the utilization of resource centers should be provided by the affiliating university. 25.70 percent suggested that resource centers should be properly maintained in the institutions. 16.36 percent suggested that orientation programmes for the effective utilization of the resource centers should be organized by the university and 12.62 percent suggested that proper supervision and inspection of the resource centers should be done by the affiliating university.

5.2.4 CLASSROOM INTERACTION BETWEEN TEACHER EDUCATORS AND PROSPECTIVE TEACHERS

- The results of the observation data analysis show that teacher talk was very high as compared to pupil talk as well as silence or confusion. It means while transacting the secondary teachers' training curriculum to the prospective teachers, the teacher...
educators' dominated the class with authoritarian climate and very less time was
given for prospective teachers' talk.

- Teacher educators responded very often to the prospective teachers queries as TRR
  was high. Very low TQR reveals fewer tendencies of teacher educators to ask
  questions and indicates most of the time spent by the teacher educators was on
  lecturing. Very low PIR indicates that the prospective teachers' initiation in
  introducing their own ideas in class situations was negligible or very less.

- The level of instantaneous response ration (ITRR) was very high and instantaneous
  question ratio (ITQR) was low. It reflects the very high tendency of teacher
  educators to praise or integrate prospective teachers' ideas and feelings in to class
  discussion, at the moment prospective teachers stop talking, and a very healthy
  emotional climate and high level of communication in the live class when teacher
  educators were teaching. However, low ITQR reflects the fewer tendencies of the
  teacher educators in responding to prospective teachers' talk with questions based on
  their own ideas compared to their tendency to lecture.

- There was high content cross ratio (CCR) which indicates that during classroom
  interaction the main focus of the teacher educators was on subject matter i.e. most of
  the time teacher educators were lecturing and they were the most active participants
  in the classroom discussion with very little or no attention to motivation or discipline
  problems in the class.

- The steady state ratio (SSR) which reflects the tendency of the teacher educators' 
  talk or prospective teachers' talk to remain in the same category for periods longer
  than three seconds was also high. It indicates that on the average there was less rapid
  interchange between the teacher educators and prospective teachers during
  discussion in the class.

- The results in respect of flow of classroom events during interaction between teacher
  educators and the prospective teachers during the transaction of teacher training
  curriculum indicate that the highest probability of starting the classroom events was
  in the form of lecturing followed by the questioning by the teacher educators which
  was followed by prospective teachers' responses. Both these events occurred
  interchangeably. Sometimes long questioning and repetition of questions also
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The prospective teachers' ideas were sometimes accepted and used by the teacher educators; however these were very rarely clarified by the teacher educators. Sometimes lecturing was followed by silence or confusion and then silence or confusion was broken by the lecturing.

The box flow diagram prepared from the composite master matrix indicates the change in the steady state pairs of events and the transition among them. The major changes in the flow of classroom events i.e. behaviours during the transaction of teacher training curriculum were: i) lecturing was followed either by questioning or by the period of silence or confusion and very rarely by pupil responses; ii) questioning was mostly followed by pupil responses; iii) lecturing was mostly followed by questioning, whereas pupil responses were rarely followed by questioning; iv) period of silence or confusion was usually broken by lecturing and; v) student responses were followed by acceptance or use by the teachers for a very shorter period and acceptance or use of ideas of pupils was usually followed by lecturing by the teacher educators.

5.3 EDUCATIONAL IMPLICATIONS

The findings of the present study indicate that there are too many inadequacies in the curriculum/course-framework of secondary teachers' pre-service training programme and its transactional procedures in Himachal Pradesh. Therefore, the findings of the present investigation have certain educational implications for the education administrators, curriculum framers and teacher educators also.

5.3.1 IMPLICATIONS IN RELATION TO CURRICULUM

Central to any effort to prepare people as effective, efficient and competent teachers is the continued implementation of the roadmap i.e. curriculum of teacher training or preparation programme in tune with the reforms desired by Indian Education Commission (1964-66), National Policy on Education (1986), Curriculum Framework for Quality Teacher Education (1998), National Curriculum Framework for Teacher Education (2009) and High Powered Commission on Teacher Education Constituted by Hon'ble Supreme Court of India (2012). The transaction of a standardized and coherent teacher education curriculum, consistent with the modern and advanced school standards highlighted by NCF-2005, is a key component of any teacher preparation programme. If, Himachal Pradesh
University, in particular and other universities or teacher education institutions, in general acts on these suggestions, the curriculum designed for teacher education in India in general and in Himachal Pradesh in particular, will be more effective in enhancing theoretical and empirical knowledge as well as prospective teachers’ experiential knowledge along with teaching them a noble and viable profession.

The following suggestions are based on the content analysis and researcher’s careful examination of the curriculum included in the study:

1. **Standardization of Curriculum**

   The University should focus on developing a curriculum which is standardized and aligned with national and international certification standards consistent with the intent of UGC, NCTE and UNESCO’s model curriculum and correlates well with the characteristics of high quality curriculum as indicated by STECA Rubrics. The University should ensure that teacher education or preparation programme must reflect workplace i.e. school and teaching standards and actual work requirements. The teacher education curriculum thus will equip prospective teachers to meet core professional requirements for knowledge and skills.

   It will also provide prospective teachers a viable education and will guarantee them exposure to current requirements and same course material, if they are transferred to another place where the same programme is offered. Further, it will also help them to plan their lessons for a variety of students with varying levels of interest and ability; signal potential employers and agencies about the kind and quality of the education they receive and; their preparedness to perform the task required.

2. **Removal of Deficiencies**

   The University should take notice of and address deficiencies found in this curriculum evaluation.

   The objectives of the teacher training programme should be specified in the beginning of the curriculum/course-framework. The absence of these have unanticipated negative consequences on prospective teachers, in terms of developing an insight about the teacher education in general and teacher preparation programme in particular.

   The objectives for each paper should be reformulated and restated in the beginning of each paper in the curriculum.
The repetition of topics or sub-topics should be avoided as far as possible within or between the papers of the curriculum/course-framework. Contents for each paper should have logical organization and psychological sub-division. Contents of various papers should be reframed or restructured. The topics found least relevant should either be removed or revised and topics of current importance like Sarva Shiksha Abhiyan, Rashtriya Madhyamik Shiksha Abhiyan, Universalization of Secondary Education, NCF-2005, NCFTE-2009, Constructivist Approach, Constructive Lesson Plans, and Effective Use of ICT etc. should be incorporated in the curriculum. Time to complete a particular paper, each section of a paper and for the transaction of a particular topic or sub-topic should be specified in the curriculum.

The lack of practical activities in the course curriculum relating to ‘Personal and Professional Qualities’, ‘Critical Thinking and Problem Solving Skills’, ‘Community Experiences’, and ‘Interdisciplinary Approach’ may have negative consequences on prospective teachers, especially those from minority groups who may already feel alienated. Therefore, the practical activities for the development of these aspects must be incorporated in the curriculum.

Pragmatically, the prospective teachers are to be prepared to face a situation where they need to demonstrate and execute competencies like managerial skills, organizational efficiency, leadership skills, democratic attitudes, innovative and creative abilities, understandings and visions. Curriculum, therefore, must have practical activities to master these competencies.

The lack of instructional strategies and proper assessment and evaluation procedures is another major deficiency in the curriculum. Therefore, more instructional strategies and proper assessment and evaluation procedures must be incorporated in the secondary teachers’ training curriculum.

3. Revision of Curriculum

The curriculum of secondary teacher’s pre-service education programme should be revised periodically. The curriculum must be revised after every two years so that the various developments and emerging trends may be incorporated in the curriculum. University should make efforts to redesign or revise or improve the viability of the curriculum in general and various papers in particular. Methods of improving this
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Curriculum can include matching the curriculum to STECA Rubrics criteria, other fundamental characteristics of high quality curriculum and standardization so that prospective teachers can positively signal their accomplishments. Improved or strengthened curriculum should provide prospective teachers with advanced knowledge and skills.

4. Duration of the Programme

As per the findings of the present study the duration of the programme is very less. It should be increased to two years as also recommended by various commissions and committees during past five to six decades.

5. Teacher Educators' Manual for Effective Transaction of the Curriculum

The evaluation of curriculum of secondary teachers' pre-service training programme and its transaction in Himachal Pradesh indicate that a number of academic resources must be provided to teacher educators. The University should develop teacher educators' manual for the teacher preparation programme. This resource must include: proper planning procedures for curricular and co-curricular activities; a variety of instructional strategies; variety of classroom or curricular activities; procedures for the organization and execution of practical activities viz. micro-teaching, simulation and real teaching practice; guidelines on the effective utilization of various resource centers; procedure for making classroom interactions prospective teacher centered and for the improvement of chain of events in the classrooms, especially own acts of teaching behavior of teacher educators and; a wide range of tests and tools to be used based upon constructivist approach which must be practiced by the prospective teachers also. In addition to this, the information that could help teacher educators in best possible ways and in difficult teaching-learning environments should also be included. A benefit of providing teacher educators this information would be a greater degree of consistency across the various institutions i.e. colleges of education throughout the state in particular and country in general and, improved quality of teacher preparation programme. Standardized instruction would also help improve the performance of struggling teacher educators and the end results will be efficient, effective and competent teachers possessing advanced knowledge and skills of the profession.
5.3.2 IMPLICATIONS IN RELATION TO CURRICULUM TRANSACTION PROCEDURES

An effective curriculum transacted increases the probability of prospective teachers’ effectiveness, efficiency and competence. Therefore, effective teacher education curriculum for a challenging environment like that of 21st century should focus on training and educating prospective teachers’ to a skilled level reflecting conditions of real work place i.e. schools.

The following suggestions are based on the findings of the present study and researcher’s careful examination of the curriculum transaction procedures of secondary teachers’ pre-service training programme in Himachal Pradesh:

1. Planning of Curricular and Co-curricular Activities

In view of the importance of planning for various activities, teacher educators should follow yearly planning for each of the paper they teach as this type of planning contains monthly as well as unit planning which in other ways facilitates daily lesson planning. In case of co-curricular activities, teacher educators should continue with the preparation of tentative annual activities calendar. In such types of planning, a teacher educator can easily take a complete view of what he has to do in the whole session regarding the instructional work or curricular activities and co-curricular activities. Such types of planning are economic from the view point of time.

2. Use of Teaching Method(s) and Strategies

In addition to lecture, discussion, lecture-demonstration, demonstration, assignment methods and presentations by the prospective teachers, teacher educators should also employ project, problem-solving, self-discovery, seminars etc. invariably which incorporate appropriate use of latest technologies for the achievement of comprehensive objectives of teacher training programme. This will help in exposing prospective teachers to knowledge and experiences helpful in the development of understandings, visions, critical thinking, practical skills and advancements in terms of technological applications.

There should also be provision of guidance and orientation to teacher educators by the NCTE/NCERT/SCERT/ Himachal Pradesh University in the use of various teaching and evaluation methods.
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There must be provision of separate periods for library consultation, in order to develop the habit of searching for knowledge and self-study using various resources among the prospective teachers.

There should be a provision of organization of guest lectures in the colleges of education as this would enhance the mental levels of the prospective teachers and will help them in understanding different intellectualities beyond the premises of their own institution.

3. Use of Media

The teacher educators must make use of various media in the classroom as it would facilitate association of objects, save prospective teachers' time and, provide authentic and correct information. It will make teaching-learning interesting, provide a simplified view of the complicated data, stimulate the imagination, develop prospective teachers' power of observation and acquaint them with latest developments in the area.

4. Improvement of Evaluation Procedures

All teacher educators should assess and evaluate prospective teachers' performance with due weightage for attendance; participation and performance in various curricular and co-curricular activities and; achievement in house exams using various types of tests and tools. Time schedule for the evaluation should be notified as per the geographical diversities of the state.

5. Organization of Co-curricular Activities

Educational activities and the activities based on community experiences need more care from the point of view of their organization, execution and viability in real work place so that prospective teachers may get most out of them. Such activities should be organized with a purpose and should not be alienated from the goals of teacher preparation programme.

6. Practice Teaching

For orienting prospective teachers to innovations like micro-teaching and simulation, techniques like work-shops, power-point presentations and team-teaching etc. should be used by the teacher educators, so that prospective teachers can experience feeling of co-operation, sense of co-ordination and use of various techniques in a viable manner.
The micro-teaching skills to be learned and acquired by the prospective teachers must be decided and notified by the university, so that consistency in acquisition of the same may be accomplished in different institutions of the state.

It should be ensured by the university that the number of micro and macro-lesson specified in the curriculum are practised in each and every college.

The time schedule and procedure for micro-teaching and simulation should be decided upon by the university. University must also ensure the implementation of the same in the various institutions, the way it should be. The two innovations should be organized only after the completion of 70 percent of the foundational, pedagogical and, technology and technique based courses. The duration of the micro-teaching should be at a stretch for one complete month and for simulation it should not be less than twenty working days.

The real teaching practice of the prospective teachers should be organized in variety of schools viz. government, government aided, private and public schools with the rotation of prospective teachers. This will acquaint prospective teachers with the functioning of variety of schools and also with different types of students from different communities and localities in these schools.

It has been observed that during real teaching practice only one teacher educator supervises all the prospective teachers irrespective of his/her specialization in pedagogical subject. Therefore, each prospective teacher should be observed by the teacher educators on rotation basis, so that he/she is observed in the real classroom by the methodology experts also and given suggestions for improving his/her teaching. In addition to the specified number of lessons, there must be a provision for discussion/criticism lessons during the real teaching practice.

Duration of real teaching practice should be of at least two months so that prospective teachers may understand the functioning of the schools properly and expertise in teaching may be developed among them.

7. **Prospective Teachers’ Evaluation in the Final Skill-in-Teaching Exam**

The findings of the study reveal that evaluation of prospective teachers in skill-in-teaching exam is done by the examiners only for a very short span of time. Therefore the external examiners must devote adequate time for evaluating a prospective teacher not
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merely by observing his teaching in final lesson but also by giving weightage to the micro-
lessons, simulated teaching and real teaching practice records.

The university must specify, in the curriculum, the weightage of marks to be given 
for the observations of teacher educator in-charge during practice teaching in final skill-in-
teaching exam, as they observe the prospective teachers during entire session of real 
teaching practice. This will help in the overall evaluation of the teaching by the prospective 
teachers and not only the teaching behavior at the time of evaluation by the external 
examiners.

8. Utilization of Resource Centers

The orientation programmes and refresher courses on the effective utilization of 
various resource centers must be organized by the university. Proper maintenance and 
updation of the resource centers should be ascertained by the university so that the 
prospective teachers may utilize them to the maximum.

9. Teacher Educators' Behaviour

The results of observation data analysis indicate that during classroom transaction of 
the curriculum the classroom climate was more teacher dominated and prospective teachers' 
participation was less. Most of the times teacher educators were lecturing and interchange of 
communications between teacher educators and prospective teachers was very less. 
Therefore, teacher educators must adopt the strategies which are student centered and 
involve them in classroom interaction.

Teacher educators while transacting the curriculum in actual classrooms must 
analyze their classroom interaction in order to obtain information about the chain of events 
and specially their own acts of teaching behavior which will result in the development of the 
prospective teachers.

The University, in collaboration with teacher training institutions and organizations 
like NCTE, NCERT, SCERT and State Board of School Education, should organize short 
term training courses for teacher educators and teachers from different disciplines for the 
effective transaction of curriculum at various levels of educational ladder.

5.4 SUGGESTIONS FOR FURTHER RESEARCH

On the basis of experience and insight acquired, after conducting the present study, 
following suggestions are offered for future researchers:
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1. A similar study may be undertaken for evaluating the curriculum transaction procedures in pre-service teachers' training programme at elementary level.

2. A similar study may be undertaken for evaluating the curriculum transaction procedures adopted during in-service teachers' training programmes.

3. A comparative study of the curriculum transaction procedures in secondary teachers' pre-service training programmes in Himachal Pradesh and other states may be undertaken.

4. A comparative study of the curriculum transaction procedures in elementary teachers' pre-service training programmes in Himachal Pradesh and other states may be undertaken.

5. In-depth studies for evaluating the transactional procedures being followed in micro-teaching, simulation and real teaching practice during various teachers' training programmes may be undertaken.

6. A comparative study of the curriculum transaction procedures in secondary teachers' pre-service training programmes of developing and under-developed nations may be undertaken.

7. A comparative study of the curriculum transaction procedures in elementary teachers' pre-service training programmes of developing and under-developed nations may be undertaken.