CRITICAL ANALYSIS OF FOUR-YEAR INTEGRATED (VIII SEMESTER) B.Sc.B.Ed. COURSE OF RIE, BHOPAL

A
Dissertation
Submitted To
Barkatullah University, Bhopal
In partial fulfilment of the requirement
for the Degree of
MASTER OF EDUCATION
Regional Institute of Education, Bhopal
Session: 2012-13

विद्यया ऽ मृतमश्नुते

एन सी ई आर टी
NCERT

Supervisor:
Dr. N.C.Ojha
Assistant Professor

Investigator:
Deepti Yadav
M.Ed. Scholar

REGIONAL INSTITUTE OF EDUCATION
(A Constituent Unit of National Council of Educational Research and Training, New Delhi)
SHYAMLA HILLS, BHOPAL (M.P.)

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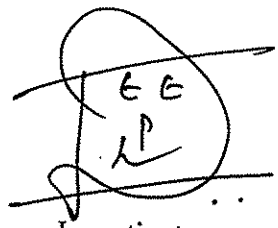
DECLARATION

I do hereby declare that the dissertation entitled **"Critical Analysis of Four Year Integrated (VIII Semester) B.Sc.B.Ed Course of RIE, Bhopal"**, submitted to the Regional Institute of Education, Bhopal, is a record of an original work done by me in the session 2012-13, under the guidance and supervision of Dr. N.C. Ojha, Assistant Professor, R.I.E., Bhopal.

This dissertation is submitted as a partial fulfilment of the requirements for the award of the degree of Master of Education (RIE). The results embodied in this thesis have not been submitted to any other University or Institute for the award of any degree or diploma.

Place: Bhopal
Date: 06/05/2013



Investigator:
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M.Ed., 2012-13
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CERTIFICATE

This is to certify that the dissertation entitled **"Critical Analysis of Four Year Integrated (VIII Semester) B.Sc.B.Ed Course RIE, Bhopal"** submitted by Deepti Yadav, a student of Regional Institute of Education (NCERT), Bhopal for the Degree of Master in Education, RIE from Barkatullah University, Bhopal, is a record of bonafide research work carried out by her under my supervision and this dissertation is fit for submission.

This dissertation is original and fulfils all the requirements laid down in the ordinance of Barkatullah University, Bhopal relating to the M.Ed. (RIE). The present study is the outcome of her sincere research efforts.

Place: Bhopal

Date: 06/05/2013

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Place:Bhopal.

Deepti Yadav 06/05/2013

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CHAPTER – I

INTRODUCTION

CHAPTER – I

INTRODUCTION

1.0.0 INTRODUCTION

The National Council for Teacher Education has defined teacher education as – A programme of education, research and training of persons to teach from pre-primary to higher education level. It is a programme that is related to the development of teacher proficiency and competence that would enable and empower the teacher to meet the requirements of the profession and face the challenges therein.

The crux of the entire process of teacher education lies in its curriculum, design, structure, organization and transaction modes, as well as the extent of its appropriateness. Teacher education derives its content from the disciplines of Philosophy, Sociology and Psychology. These disciplines provide the base for better understanding and application of Teacher education. The Philosophical basis provides insights to the student teachers about the implications of the various schools of philosophy, ancient and modern philosophical thoughts, educational thoughts of philosophical thinkers on education and its various aspects such as curriculum construction and discipline. The Sociological basis helps the student teachers to understand the role of society and its dynamics in the educational system of a nation and the world at large. It encompasses the ideals that influence national and international scenes. The Psychological basis helps the student teachers develop insights into students' psychological makeup. This enables the student teachers to understand their self, their students and the learning situations such that they are able to provide meaningful and relevant learning experiences to their students.

Levels of Teacher Education: Beginning teachers need more than a set of activities, ideas, and techniques to help them become deliberate, thoughtful teachers who understand the relationship between their teaching and the quality of their students' learning. Teachers need to be able to think creatively about complex situations, consider multiple options, make decisions about best courses of action, and understand why they do what they do. With increasing school enrolments and the launch of pan- Indian primary education development programmes such as the SSA (2002) to achieve UEE, the Operation Blackboard (OB) 1986, and the District

Primary Education Programme (DPEP) 1995, there was an increase in the demand for teachers. Currently, for pre-service and in-service, a number of courses are offered for different stages – pre-primary, elementary and secondary – face-to-face and distance modes of teacher education; programmes of M.Ed, B.Ed., D.Ed., B.P.Ed., and M.P.Ed. are in the form of face-to-face and distance modes.

Issues and Challenges in Teacher Education: Teacher education is often criticized for being irrelevant, separate from theory, repetitive, and demeaning. Examining teaching practices reveals certain dark sides of the classroom practices. Over the last half a century and particularly, in the recent decades, teaching learning has been undergoing drastic changes. There has been a shift towards student centred classrooms with teacher's role more as facilitator of learning rather than an autocratic master. Many teachers are not properly trained in implementing the concepts behind the new curriculum and many are not equipped to properly implement the curriculum. The pre-service teacher education sector has been kept away from the SSA and therefore, the teacher aspirants passing out of the B.Ed colleges get exposed to the new curriculum only when they join the schools. Inclusive education, isolation of teacher education institutions, unplanned growth of teacher education, relevance of teacher education curriculum, commercialization of teacher education are some of the issues and concerns of teacher education.

Pre-service and in-service being the two inseparable significant components of teacher education, the unprecedented expansion of teacher education institutions and programmes during the past few years characterizes the teacher education scenario of today. With the growing demand for teachers, there is mushrooming of large number of institutes for teacher education which is leading to deteriorating the quality of teacher education. This study intends to critically analyse one such course of teacher education which aims to produce 'science teachers'.

1.1.0 SIGNIFICANCE OF THE STUDY

Established in 1961, the National Council of Educational Research and Training is (*NCERT*, Hindi: राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद) an apex resource organization, set up by the Government of India, with headquarters at Sri Aurobindo Marg in New Delhi to assist and advise the Central and State Governments on

academic matters related to school education. NCERT has comprehensive extension programme in which various Departments of the National Institute of Education (NIE), Regional Institutes of Education (RIE), Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE) are engaged in various activities. Several programmes are organised in rural and backward areas in order to reach out to functionaries in these areas. It, also, acts as the Secretariat of the National Development Group (NDG) for Educational Innovations. Except North East Regional Institute of Education (NERIE), Shillong other four RIEs offer pre-service teacher training programmes in addition to the face-to-face and on-line Diploma in Guidance and Counselling programme. The NCERT has been offering training facilities, usually, through extension programmes and participation in workshops, to educational workers of other countries. The NCERT also publishes textbook for different school subjects from Classes I to XII.

NCERT undertakes three main activities. It states, that they conduct research in association with other independent bodies for improvement in different aspects of school and teacher education. NCERT provides training supports to all those who either aspire to be a teacher or those who have already taken plunge in the teaching profession. The pre service or aspiring teachers are taught the features of integrating content and teaching techniques. They are also given training in the actual classroom setting by assigning them the position of trainee for a fairly long period of time. It also undertakes developmental activities. Here in, it deals with the framing of course curriculum of various classes. Thus,, the apex body mainly develops the curriculum (syllabus) and instruction material for the various courses and subjects.

Established in 1963, Regional Institute of Education (since 1995), formerly Regional College of Education, has five such institutions established by the National Council of Education Research and Training (NCERT), New Delhi. The other Institutes are located at Ajmer, Bhopal, Bhubaneswar and Shillong. The Regional Institutes were started with main objective of qualitative improvement of school education through innovative pre-service and in-service teacher training programmes and relevant research, development and extension activities.

The institute has established itself as an institute of repute in the area of school and teacher education. Ever since its inception, the institutes have endeavoured to shoulder responsibilities and challenges generated by changes in the educational

scenario of the country. The institute runs a four-year B.Sc.B.Ed. Integrated course which this study intends to critically analyse.

The Chattopadhyaya Committee Report (1983-85) observed that "...what obtains in the majority of our Teaching Colleges and Training Institutes is woefully inadequate..." "If teacher education is to be made relevant to the roles and responsibilities of the New Teacher, the minimum length of training for a secondary teacher,... should be five years following the completion of Class XII." Reiterating the need "...to enable general and professional education to be pursued concurrently", the Commission recommends that "...to begin with we may have an Integrated four year programme..."

The Yashpal Committee Report (1993) on Learning without Burden noted "...inadequate programmes of teacher preparation lead to unsatisfactory quality of learning in schools. The content of the programme should be restructured to ensure its relevance to the changing needs of school education. The emphasis in these programmes should be on enabling the trainees to acquire the ability for self-learning and independent thinking."

NCF (2005) Position Paper by National Focus Group on Teacher Education for Curriculum Renewal has also opined referring to Chattopadhyaya Committee (1983-85) and Yashpal Committee that there is a dire requirement to develop an understanding about the need of the course and its relevance. It states about the need of such courses with the universalization of the elementary education.

NCERT (2006), appointed a committee to review all the pre-service and in-service training programmes currently organized at the RIEs and to recommend strategies for improvement or changes and for designing alternative programmes. It opines that these institutes differ on the quality of the programmes delivered through the integrated courses. There is a general acceptance that the programme in principle offers an excellent opportunity to adopt the idea of integration of pedagogy and subject knowledge in preparing prospective teachers. However, in reality, many felt that integration in the real sense has not been possible for a variety of reasons. One of the reasons is the insistence of the affiliating universities on the coverage of curriculum corresponding to the regular B.Sc. programmes. This tends to distort the

perspective of integration. Lack of pedagogic orientation to non-education department staff is also pointed out by some faculty members as a handicap for effective integration.

Mentioning about integrating contents and methodology it states that there is a dire need for a planned effort to integrate content and methodology. Then again, mere content and methodology integration is not adequate. Various interventions like activity based strategies, reading materials, ICT, multimedia, demonstrations, experimentations, peace and other values, remedial instruction, continuous and comprehensive evaluation etc. also need to be meaningfully integrated to content-cum-methodology approach. Instead of focusing on general methodology (as done in B.Ed colleges such as heuristic method, deductive method, inductive method, problem solving method, etc) there is a need to focus on methodology appropriate for multi-grade situation, methodology for multi-level teaching, methodology of handling children with learning difficulties, methodologies of integrated physically challenged children to regulate classroom, institutional design for teaching science, mathematics and languages to rural children, methodology of handling gifted and talented children etc.

The committee report further states about multi-disciplinary approach to teacher education. Activities of RIEs should have a multi-disciplinary character reflecting the nature of the faculty structure of the Institutions. Faculty members of RIE with different specializations should also be encouraged to link with professionals with varying disciplinary background working in other institutions. Through these approaches, RIEs should lead the way in overcoming the general sense of isolation from mainstream academics experienced by the teacher education sector.

NCFTE, Discussion Paper (2006) indicates the need of quality study materials for student teachers, teacher practitioners and teacher educators on subject content, pedagogic approaches and integration between content and pedagogy with examples drawn from different school subjects. It suggests that curriculum materials need to be accompanied by appropriate sets of anthologies of readings within the Indian context, on various relevant courses of teacher education. Materials particularly need to address issues which lack a contextualized knowledge-base, such as connectivity between theoretical concepts and teaching-learning processes; areas of enquiry within emerging and evolving interdisciplinary knowledge and epistemology, critical

frameworks to analyse social, political and humanitarian issues from multiple perspectives, methods and processes of child observation, the writing of reflective journals and other reflective practices.

NCFTE (2009) recommends that current models of teacher education at all levels of school education be gradually replaced by models of teacher education that integrate general education with professional development along with an intensive internship with schools. These integrated models should be designed using the specific features outlined in the curricular areas and transaction process. The time-frame recommended to ensure the institutionalization of these models would be between 4-6 years from the bringing out of the document i.e. 2010.

Pezzoli & Howe (2010) of Portland State University also analysed the content of syllabi with a view to plan Pedagogy in the need hour of globalization. Global megatrends including economic restructuring, migration, and environmental degradation have profoundly transformed planning practice; this reality needs to be reflected in planning education. To this end, a content analysis of sixty-nine planning syllabi was conducted to identify how and to what extent global themes are being included. The analysis highlighted the interdisciplinary nature of globalized planning pedagogy and the greater emphasis on planning theory and history and economic development. The courses were clustered according to common themes, and these are discussed as they relate to planning practice. Noteworthy pedagogical approaches are highlighted.

Courses run by RIEs are the B.Sc.B.Ed./ B.Sc.Ed. and B.A.B.Ed. of four years which are renowned on a national level for being an integrated course but do they fulfil the criterion for integration remain a matter of interrogation. Thus, the study intends to be watchful of integration in the course and its relevance in the present context.

1.2.0 MEANING OF INTEGRATION

"Integrated curriculum is an approach to learning that consciously blends and applies content from more than one discipline to better examine a central theme, issue, problem, topic, or experience and encourages "disciplinary contamination" where subjects are integrated and interrelated to address relevant issues of current time and context."

Integration as defined by International Council for Higher Education in 'An Introductory Guide to Integrated Course Design' published in 2007 has been mentioned and it gives a very broad and precise definition for the same. The word "integrate" is derived from the Latin word 'integrare' which means to make whole or renew. Other definitions of integration include "to join as to form a larger, more comprehensive entity," and "to blend, harmonize, synthesize, arrange, incorporate, unify, coordinate, and orchestrate". Researcher has conceived this idea of integration and has understood in terms of its application to the course as an integrated course should move towards a new concept with the blend of its main components. For instance milk and sugar are the two component of sweet milk but can be felt by one who tastes the blend but not by one who looks at it with naked eyes.

The manual also mentions about components of knowledge and to bring them together into the specifics of integrated course design. These components are: (a) Foundational knowledge which is the understanding and remembering of key information and ideas associated with a subject or topic, (b) Applied knowledge where students learn how to use the content to engage in critical thinking, creative projects, and learn practical skills, (c) Integrated knowledge where integration examines the connection between ideas, self, and society. Thus, from these three components of knowledge, a foundation for the integrated course has been derived.

Fogarty (1991), identified ten ways to integrate curriculum which was published in 'Educational Leadership'. She describes and illustrates graphically ten ways that educators may integrate curriculum. These approaches to integration run a spectrum: From approaches housed within a specific discipline to those that involve integration within learners themselves. The ten approaches include:

The Fragmented Model: A traditional approach to curriculum where each discipline is taught separately from the others. Metaphor: Viewing the curriculum through a periscope–one image at a time.

The Connected Model: Connections are overtly made between topics taught within one discipline. Metaphor: Opera glasses used to view two images at once.

The Nested Model: Students look at various related aspects of the content they are examining. In addition to working with CAD in a computer lab, for example, students might also consider ways to design computer chairs that are more ergonomically friendly. Metaphor: Russian nested dolls.

The Sequenced Model: Distinctive content is taught separately but sequenced in a way that ties the pieces together. Metaphor: Eyeglasses: content is viewed through separate lenses but held together by a common frame.

The Shared Model: Areas where content overlaps allows for shared planning and presentation of content. Metaphor: Binoculars: Two content areas are studied together to create a combined picture of content. (The graphic used to accompany this looks like a Venn diagram where the combined picture is the area of overlap.)

The Threaded Model: This model threads thinking skills, social skills, study skills, graphic organizers, technology, and multiple intelligences approach to learning throughout all disciplines. Metaphor: Magnifying glass that "magnifies all content through a meta-curricular approach".

The Webbed Model: Content in various content areas is taught thematically with the theme being used as a tool to connect content between the disciplines. Metaphor: Telescope that allows learners to see across the span of something at one time.

The Integrated Model: Here teachers identify the possible connections between content. Metaphor: "kaleidoscope where interdisciplinary topics are arranged around overlapping concepts and emergent patterns".

The Immersed Model: With this model, learning takes place within students themselves in connection with content they focus on. Fogarty compares this model to one where there are graduate students who are immersed in a particular study and are constantly seeking answers to research questions associated with that study. Metaphor: Microscope where learners view content through their lenses of personal interest and expert.

The Networked Model: Learners direct the integration of content drawing on resources "within and across areas of specialization". Metaphor: Prism that creates several dimensions "and directions of focus". A second metaphor used in the discussion is a conference call.

These models provided by Fogarty have been considered while observing the integration of the course.

1.3.0 RATIONALE OF THE STUDY

Regional Institute of Education, Bhopal claims its Four-year B.Sc. B.Ed. course as integrated, the title of the ordinance and course of studies itself indicates that. But, Chattopadhyaya Committee (1983-85) was of the view that the integrated courses run

by the RIEs of NCERT do not fulfil the criteria of integration. It may be said that the science course and the B.Ed. course are stapled together.

The shaping of the future of a nation depends on the teachers and the education they provide in schools. In the present Communication era, the word 'teacher' has a wide and undefined meaning. The teacher acts as a fulcrum for providing learning environment to the learner so that the learner can construct the knowledge by himself / herself. Individuals involved in imparting knowledge or information, whether through formal or informal means, to a single person or group of persons are called "teachers" (Atan Long, 1984). Social scientists label teachers as educators, teachers, trainers and leaders who are responsible for imparting knowledge, defining behaviour and leading by way of examples to students. The most important duty of a teacher is to execute processes and educational pedagogy that enables objective-based learning and define quality and effective behaviour patterns (*Gani et al., 2008).* It is well known that teacher's knowledge on content plays a significant role in shaping the quality of their teaching (Hill *et al.,* 2005). To cope with the contemporary issues in teaching learning process and school activities a strong well designed teacher educational curriculum is needed. The curriculum developers of our Nation viz, National Council for Teacher Education (NCTE) and National Council of Educational Research and Training (NCERT) have developed National Curriculum Framework for Teacher Education (2005). In developing country like India curriculum revision is a continuous process and particularly in teacher education curriculum is revised periodically. Recently NCTE has designed and approved National Curriculum Framework for Teacher Education (NCFTE) 2009 with a wide scope for restructuring Teacher Education in India and establishing linkage between Elementary Teacher Education and Higher Education. This NCFTE (2009) document has gained a singular importance as it has been released by Honourable Minister for HRD, GOI, on 10th March 2010.

Despite the technology revolution beginning to dramatically impact learning outcomes worldwide, too many schools still continue to adhere to teaching-learning systems of the 1950s, which place a high premium on memorisation (of dates, places and facts that are quickly forgotten after formal examinations). The 21st century has heralded an era in which vast amounts of information must be assimilated and integrated by students — information they need to retain well after their exams. The human brain is a seeker of connections, and teachers' focus must be on producing

students well prepared to confront and manage a rapidly changing universe. Educational institutions also have a responsibility to produce not just academically qualified, but well-rounded and responsible global citizens. The attainment of these objectives requires teachers to create enriched and meaningful classroom environments, and to revisit and reappraise their role in contemporary society. The 21st century requires radical new attributes and mindsets as well as changes in the teacher education curriculum. The teacher of the 21st Century must have the knowledge of the changes happening in the world. Alnin Toffler, rightly remarked in his book 'Future Shock', "The present society is a 'super industrial society". Therefore, we need the super brain of superman to handle the super computers in the super industrial society. The teacher education cannot be remaining untouched from the changes happening in the world. So, it has to incorporate the changes and development happening in the world while formulating policies and programmes for the teacher education. As discussed earlier, teacher education has to link itself with other disciplines, so it has to follow the trans-disciplinary approach. It cannot keep itself isolated from linking with other disciplines. Therefore, it is first required to clarify the three different concepts of integration, i.e., inter-disciplinary, multi-disciplinary and trans-disciplinary.

1.3.1 What Is Transdisciplinary Approach

As the prefix 'trans' indicates, transdisciplinarity concerns that which is at once between the disciplines, across the different disciplines, and beyond all discipline. Its goal is the understanding of the present world, of which one of the imperatives is the unity of knowledge. In the presence of several levels of Reality the space between disciplines and beyond disciplines is full, just as the quantum vacuum is full, of all potentialities: from the quantum particle to the galaxies, from the quark to the heavy elements which condition the appearance of life in the universe. The discontinuous structure of the levels of Reality determines the discontinuous structure of transdisciplinary space, which in turn explains why transdisciplinary research is radically distinct from disciplinary research, even while being entirely complementary. Disciplinary research concerns, at most, one and the same level of Reality. Moreover, in most cases, it only concerns fragments of one level of Reality. On the contrary, transdisciplinarity concerns the dynamics engendered by the

simultaneous action of several levels of Reality. The discovery of these dynamics necessarily passes through disciplinary knowledge. While not a new discipline or a new super discipline, transdisciplinarity is nourished by disciplinary research; in turn, disciplinary research is clarified by transdisciplinary knowledge in a new, fertile way. "Transdisciplinarity – the coordination of disciplines and inter-disciplines with a set of common goals towards a common system purpose". In this sense, disciplinary and transdisciplinary research are not antagonistic but complementary.

Defining integrated curriculum has been a topic of discussion since the turn of the 20th century. Over the last hundred years, theorists offered three basic categories for interdisciplinary work; they defined the categories similarly, although the categories often had different names. Integration seemed to be a matter of degree and method. In separate locations, three approaches can be defined to integration—multidisciplinary, interdisciplinary, and transdisciplinary. Multidisciplinary approaches focus primarily on the disciplines. Teachers who use this approach organize standards from the disciplines around a theme. Following figure explains the approach:

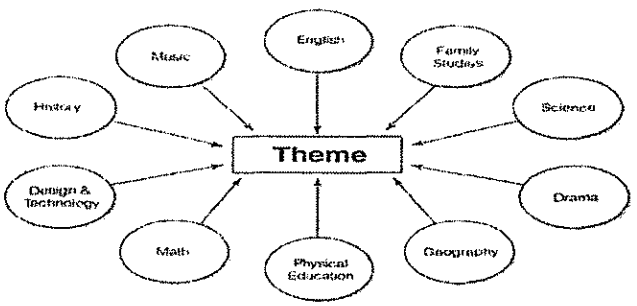

Fig. 1

There are many different ways to create multidisciplinary curriculum, and they tend to differ in the level of intensity of the integration effort. The adjacent descriptions outline different approaches to the multidisciplinary perspective.

In interdisciplinary approach to integration, teachers organize the curriculum around common learning across disciplines. Following figure explains the approach:

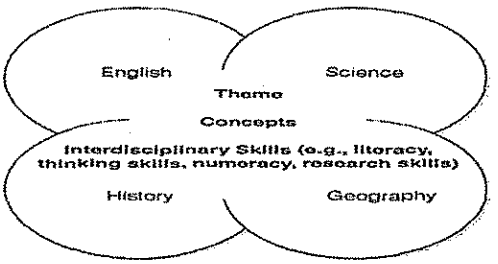

Fig. 2

They chunk together the common learning embedded in the disciplines to emphasize interdisciplinary skills and concepts. The disciplines are identifiable, but they assume less importance than in the multidisciplinary approach.

In the transdisciplinary approach to integration, teachers organize curriculum around student questions and concerns. Following figure explains the approach:

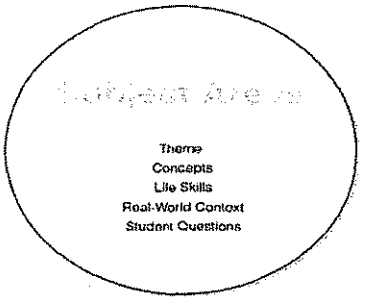

Fig. 3

Students develop life skills as they apply interdisciplinary and disciplinary skills in a real-life context. Two routes lead to transdisciplinary integration: project-based learning and negotiating the curriculum.

Disciplinarity, multidisciplinarity, interdisciplinarity and transdisciplinarity are like four arrows shot from but a single bow: knowledge. As in the case of disciplinarity, transdisciplinary research is not antagonistic but complementary to multidisciplinary and interdisciplinary research. Transdisciplinarity is nevertheless radically distinct from multidisciplinarity and interdisciplinarity because of its goal, the understanding of the present world, which cannot be accomplished in the framework of disciplinary research. The goal of multidisciplinarity and interdisciplinarity always remains within the framework of disciplinary research. If transdisciplinarity is often confused with interdisciplinarity and multidisciplinarity (and by the same token, we note that interdisciplinarity is often confused with multidisciplinarity) this is explained in large part by the fact that all three overflow disciplinary boundaries. This confusion is very harmful to the extent that it hides the different goals of these three new approaches. The three pillars of transdisciplinarity – i.e. multiple levels of Reality; the logic of the included middle; and complexity – determine the methodology of transdisciplinary research; they emerge from the most advanced contemporary sciences, especially from quantum physics, quantum cosmology and molecular biology.

Transdisciplinarity is globally open. Transdisciplinarity entails both a new vision and a lived experience. It is a way of self-transformation oriented towards knowledge of the self, the unity of knowledge, and the creation of a new art of living in the society.

In the year 2009, RIE, Bhopal introduced the new syllabus for the four-year B.Sc.B.Ed. Integrated course. The programme is innovative in character as it attempts to prepare teachers with strong foundation in both content and pedagogy right from the beginning of the semester. Its focus is on professional development with basic grounding in moral ethics and human values. The integrated course is to prepare competent and committed teachers who would be able to function effectively at school level. Teacher training, one of the basic factors, which determine teacher quality, is the standard of teacher training institutes.

Therefore, it is required to analyse the quantum and the nature of the integration of science and education in the above said course. The cover page of RIE, Bhopal Four-year Integrated B.Sc. B.Ed. Syllabus claims that the syllabus is an integrated one. Education as an area of interdisciplinary knowledge is not merely an application of a few core disciplines, but a praxis and a context where theories and practical wisdom are generated continuously. The course has been run for almost five decades and has gone through several changes in its structure. The syllabus should fulfil the criteria of an integrated course as it announces but it has come under severe criticism of several committees for its inadequacy and structure. Therefore, the present study was undertaken to analyse the content of the syllabus in terms of the integration, its application and the relevance of the course in the present context as the course was introduced in this nomenclature as 'integrated'.

1.4.0 STATEMENT OF THE PROBLEM

The problem of the proposed study has been worded as follows:

"Critical Analysis of Four-Year Integrated B.Sc.B.Ed. Curriculum of R.I.E., Bhopal"

1.5.0 RESEARCH QUESTIONS

The research questions of the proposed study have been framed as below:

1. Is the B.Sc. B.Ed. – Four Year curriculum of RIE, Bhopal integrated?
2. Is it relevant to present context?

1.6.0 OBJECTIVES OF THE STUDY

The objectives of the proposed study were as follows:

1. To critically analyse the B.Sc. B.Ed., Four Year Integrated Course in respect of its integration.
2. To study the relevance of the course as per the present context.

1.7.0 OPERATIONAL DEFINITION OF KEY TERMS USED

Critical analysis - an appraisal based on careful analytical evaluation involving skilful judgement as to truth, merit, etc.

1.8.0 DELIMITATIONS OF THE STUDY

The study was conducted under the following constraints:

1. Study was limited only to the B.Sc. B.Ed. Four-Year integrated course, carried out in Regional Institute of Education, Bhopal.
2. The syllabus introduced in 2008-09 onwards was considered for the study. This syllabus was published in the year 2008.
3. The relevant tools were administered to limited expert/students/respondents who were the concerned stakeholders in the present study.

CHAPTER – II

METHODOLOGY

CHAPTER – II

METHODOLOGY

2.0.0 INTRODUCTION

The critical study is a holistic inquiry in order to gain insight into the integration of the curriculum for the two disciplines and its relevance to the present context. It demands minute and deep observations of the syllabus and revolves around the Regional Institute of Education, Bhopal. The study also intends to know the perception and practices about the course within the institute. The introduction, rationale of the study, objectives and delimitations of the present study are presented in chapter – I. The methodology, sample, procedure of data collection and the analysis technique are presented in the present chapter.

2.1.0 METHOD

The present study is qualitative in nature. To carry out the study, it was required to triangulate the data. Data triangulation involves using different sources of information in order to increase the validity of a study. In Extension, these sources are likely to be stakeholders in this research—expert participants who are the experienced faculties, student members, and so on. In-depth interviews have been conducted with each of these groups to gain insight into their perspectives on the issue of integration and the relevance of the course in present context. During the analysis stage, feedback from the stakeholder groups would be compared to determine areas of agreement as well as areas of divergence.

Firstly, content analysis method was employed for the study, mainly, for the analysis of the contents of the syllabus so that a report after the analysis can be prepared. To view holistically at the course, along with analysing the content of the syllabus, a few interactions and telephonic interviews with the faculties of the course who deliver the curriculum was conducted to understand how it worked at transactional level. For the assessment part results, degree and scheme of examination of the course was studied to gain the efficiency for critical viewpoint.

Secondly, Delphi technique was used for the present study. It is a systematic forecasting method that involves structured interaction among a group of expert on a subject. The Delphi Technique typically includes at least two rounds of expert answering questions and giving justification for their answers, providing the opportunity between rounds for changes and revisions. The multiple rounds, which are stopped after a pre-defined criterion is reached, enable the group of expert to arrive at a conclusion. In the present study, for studying the relevance and the quantum of integration of the contents/course, expert' opinion were sought with the help of a questionnaire prepared by the investigator by incorporating the expert' advices and suggestions. A discussion with these stakeholders was helpful to draw closer towards conclusion.

For a third opinion, four focus group discussions was organised with the students, studying in VIII semester and VI semester B.Sc.B.Ed. Course of RIE, Bhopal and a questionnaire was asked to be filled. Focus group script/guideline was prepared for the purpose which essentially focuses on the relevance, transaction and integration of the course.

2.2.0 SAMPLE

Only, the syllabus of one institution was analysed for the present study. Therefore, to collect the information/data related to the study, sample was selected from the present faculties of the RIE, the retired faculties of RIE, and the students of VI and VIII semester (2012-13) B.Sc.B.Ed. students.

Table -1: Gender-wise Distribution of Sample

S.No.	Respondents	Male	Female	Total
1.	Present Faculties	10	5	15
2.	Rtd. Faculties	4	-	4
3.	VI Sem Students	2	10	12
4.	VIII Sem Students	2	19	21

2.2.1 SAMPLE FOR EXPERT

In order to select expert, the teaching experience has been the crucial criterion for the sample. Thus, for the expert' opinion and feedback 19 expert have been selected with purposive sampling which also include retired professionals and experienced faculties from the field.

2.2.2 SAMPLE FOR FOCUS GROUP DISUSSION

In order to conduct the focus group discussion, only VIII semester and VI semester students have been randomly selected. The first group was limited to fourteen students of VIII semester of CBZ specialised stream, the second group had six students of VI semester of PCM specialised stream, the third group had six students of VI semester of CBZ specialised stream and the fourth group had seven students of VIII semester of PCM specialised stream.

2.3.0 TOOLS USED

Following tools were used for the present investigation:

1. Criterion based content analysis proforma
2. Questionnaire: For expert
3. Focus group guidelines: For the students
4. Questionnaire: For the students

2.4.0 PROCEDURE OF DATA COLLECTION

The researcher has critically analysed the content of the syllabus and prepared 'content analysis report' for the Four Year B.Sc.B.Ed. Integrated course keeping in view certain criterion as a tool for analysis. It was analysed keeping in view the essential elements of the integrated curriculum.

The questionnaires prepared for expert were distributed and collected in order to know the views related to integration of the course and the relevance of the course in the present context. At two places, as it was not possible to collect the feedback from the retired faculties, feedbacks and responses have been collected through telephonic interviews. Thorough and detailed conversation helped to gather different dimensions of the course. While collecting the feedback, with some experienced and eminent expert, rich and comprehensive discussions were held which are significantly supportive for the study.

Four focus group discussions were held for an overview of the students' opinion and feedback. Questionnaires developed for the students of VIII semester, and VI semester B.Sc.B.Ed. Course of RIE, Bhopal (2012-13) were filled by the individual students. Focus group discussion was conducted in order to record and elicit their opinion towards the course in terms of integration and relevance. Focus group

discussions were held with two groups of specialised stream i.e. PCM and CBZ with focus group script in hand.

2.5.0 TECHNIQUES OF DATA ANALYSIS

Criteria-based content analysis has been carried out to view integration as a component of the syllabus. Content of the syllabus was centre keeping in view its relevance, usage and adequacy for the course. Objective of the course mentioned in 'About the Course' has remained an axis while making the thematic interpretation of integration and its relevance in present context.

Responses and feedbacks collected from expert respondent has been analysed with the Percentage. Delphi technique was used for collection of data related to the integration of the contents. Percentages for the 1st round and second round were calculated for the question number 6 and 7. Depending upon the percentage, the second round was held for four expert respondents who were not in agreement with others where two expert adjusted their opinion but did not agree completely and narrowly improved their feedback.

Focus group discussions were held with the students of VIII semester and VI semester, twice with each group. For the analysis and interpretation of the data percentages was used for their responses. Their views were quoted as excerpts which revealed the line of difference between the PCM and CBZ groups related to the integration in the delivery/transaction of the contents.

CHAPTER – III

DATA ANALYSIS AND INTERPRETATION

CHAPTER – III

DATA ANALYSIS & INTERPRETATION

3.0.0 INTRODUCTION

Data collected from the expert, students and critical study of the content as mentioned in the second chapter. The present chapter deals with the data analysis and interpretations. The detailed analysis of data and their interpretations are presented in the present chapter, below, under different captions.

3.1.0 CONTENT ANALYSIS REPORT

It is required of the study not only to critically analyse the syllabus of the Four-year B.Sc.B.Ed. Integrated Course but also to study the significance of the course in the field of teacher education, in particular, and general education, in general. For this purpose, "Ordinance and Course of Studies for Four Year Integrated (VIII Semesters) B.Sc.B.Ed. Course by NCERT" was analysed.

For studying the integration of the syllabus/contents, following criteria were decided.

a. As the definition stated in the Chapter I for integration: "Integrated curriculum is an approach to learning that consciously blends and applies content from more than one discipline to better examine a central theme, issue, problem, topic, or experience and encourages 'disciplinary contamination' where subjects are integrated and interrelated to address relevant issues of current time and context.", it remained the very criteria for the integration in the course.

b. The availability of interdisciplinary team for the course where two to three faculties of the different disciplines are assigned to a team to administer the course, sharing the teaching load, assessment, and overall course management.

c. The course objective was one of the essential criteria. Foundational, application and integrated objectives and actions related to them were duly analysed in the curriculum.

d. The mode of assessment for the realisation of the course objectives

Apart from these, transactional practices and relevance of the course in the present context were also studied.

Following observations were made with regard to the integration of the syllabus.

1. **Name:** The syllabus begins with a modest introduction and objective of the course under the heading, 'About the Course', where in the first words clearly states the nature of the course as 'professional', aiming at producing competent teachers in science teaching at the secondary level. As the name indicates that, the two separate courses, i.e., B.Sc. and B.Ed., put together in one container with the separate contents for the fulfilment of joint objectives. It signifies that the name itself is not integrated. It needs to be established that while referring to NCFTE (2010), the course with this name for teacher education could not be located as it also mentions of 'Bachelor of Science Education'. It can, also, be quoted here that RIEs have different names for the same course.
2. **Study Material:** The course has been running for more than four decades, but no study material was provided to the students, as yet. But, it was found that in other integrated courses like Integrated B.Tech - MBA Programme, Mumbai, and MBA Pharm. Tech., NMIMS, Mumbai, etc. Even, there was no evidence of developing the source material until 2010. Therefore, it can be said that that the course is not integrated in terms of the availability of the study material.
3. **Transactional Approach:** The course, substantially, follows constructivist approach of teaching which is regarded as a paradigm shift from behaviouristic approach to constructivist approach as indicated in the NCF-2005. The transactional strategies were indicated in each and every subject, in detail. The teachers have to follow and devise their own instructional strategy as per the nature and themes of the contents considering the constructivist learning strategy.
4. **Content of the Course:** The syllabus recognizes the course to be innovative and mentions about training in methodology along with instruction in various content areas.

4.1 Content/ Index: As the page is turned forward, a three point content/ index page can be seen for the syllabus that sharply segregate the course into three parts with the title 'Course of Studies'; the three parts are 'Foundation Part', 'Science Part', and 'Education Part' dedicating the 6%, 59% and 35% approximately to each course of studies, respectively.

4.2 Ordinance and Scheme of Examination: The ordinance did not mention anywhere about the integration, and in its 8th point and sub-point 'c' clearly states about the two

parts separately as 'part of B.Sc. subject (FC+Science) and the part of pedagogical (B.Ed.) subject' and continues to do so for the remaining part.

Page 6 to 12 provides with scheme of examination for all the eight semesters of the course but it has too segregated the two components of the course into two water tight compartments. Foundation part deals with 'languages' for three years and with 'Business Entrepreneurship & Development Environmental Education' in the last year. Education part remains at the bottom like a tail throughout the scheme where it begins with 'Basic in Education' in first semester and concludes with 'Contemporary Vision of Indian Education: Issues & Concern" in the fourth year. In the third year of the course, interestingly, Education part of the course has paper for 'Teaching of Physical Science', 'Teaching of Biology' and 'Teaching of Maths' with 'Core Training' which gives the study a hope for the integration.

The time allotted in the scheme for the 'periods per week' logically devotes additional time to science part as the syllabus and content is more as compared to education where time devotion in the form of 'period per week' is lesser.

4.3 The Foundation Part: Foundation part has two language papers: English and Hindi for 1st three years.

4.4 The Science Part: The second part begins with Physics paper prescribed for all the eight semester providing objectives, units and suggested reading for the same but purely has science content to teach and refer with physics practical attached to its end . This paper is followed by Chemistry, Botany, Zoology and Mathematics sequentially and all of them follow the same pattern giving the content, objective and suggested readings and books and does not vary.

Science section is followed by Education part of the course which deals with pedagogy part of the course. The section is like injecting a potion throughout four years to treat the course as 'integrated' as this part has negligible relevance with the content part.

4.5 The Education Part: The Education part begins with the 'Basics in Education' paper for the I semester followed by 'Teacher and School Education in India' for the II semester, 'Human Development in Socio-Cultural Context' paper for the III semester, 'Learning and Cognition' for the IV semester, 'Curriculum and Assessment' for the V semester, 'Instructional Technology' for the VI semester, 'Schooling, Socialization and Identity' for the VII semester and 'Contemporary Vision of Indian Education: Issue and Concerns' for the VIII semester. All the paper follow the same

pattern as science part with their unit content of education, objectives, transactional modes and suggested readings.

In the V semester and VI semester, there are three papers 'Teaching of Physical Science', 'Teaching of Biology' and 'Teaching of Maths' in Education part that gives an impression that 'integration' can be expected here. To a great extent these papers deal with the methodology relevant to the teaching of the science. They cover all the aspects related with the teaching of science content in a comprehensive manner and impressively state the relevance of these methodologies.

It has been observed that for 'Teaching of Biology' paper unit III recommends the text-book analysis for X and IX class of CBSE and State Boards syllabi which is an essential practice on the part of teacher student. But the practice should be for all other papers too as it develops knowledge of school practices for textbooks on the part of student.

Conclusion: Content analysis reconfirms the remarks made by Chattopadhyaya Committee (1985) and the findings of Yashpal Committee (1993). Criterion wise conclusion is as followed:

1. According to the Integration Definition: Throughout the analysis, a blend or 'disciplinary contamination" between the two disciplines was not found. The Science content seemed to be the central theme of the course and dominates the curriculum. The education part is subsidiary to it.

2. Availability of an Inter-disciplinary Team: The team was not found for the administrating and managing the course in the Institute. Even, when interacted with the faculties and students, it was found that except in the core training programme for different semesters, the team teaching was never encouraged.

3. Objectives of the Course: The fundamental objective of producing 'science teachers' was mainly tackled in the Education part. Though in its course objectives, curriculum clearly mentions about its purpose of making science teachers but as the analysis progressed with the curriculum it holds the two disciplines in the water tight compartments. Applied objectives were found in the core- training and internship in the V, VI and VII semester of the course. Integrated objective of the two disciplines of integrating the two disciplines has not been fulfilled as both run separately.

4. Mode of Assessment: Point no. 4.2 about the ordinance and scheme of examination states the segregated assessment of the two disciplines that does not support the course to be integrated.

The curriculum is more inclined towards science part which is required to strengthen the content command for the student teacher but elements in this content can be identified to integrate with the methodology or pedagogy part so that learning to be a teacher can take place as a whole. It has been observed that science content is not entirely up to the mark of what is taught in the B.Sc. that affects the compatibility of the students of this course who prefer to go for higher studies in the near future. The syllabus and course raises certain sensitive and fundamental questions about the need of integration.

Expert' Opinion

While discussing about the name of the course with an experienced experts and other respondents it was found that at the initial stages of the introduction of the course in all the RIEs, it was labelled as B.Sc.Ed. But, the affiliated universities did not allow the graduates of this course for the post graduation in their universities, claiming that they were not equivalent to their other B.Sc. graduates, as they were Science Education graduates. Thus,, with an exception of RIE Mysore which began with M.Sc.Ed. course, all the other RIEs modified the name of the course as B.Sc.B.Ed., strengthening the science content in the course.

The course is significantly relevant as per the need of the hour. There was provision for Campus placement of pass-out students for different reputed organisation. It was also felt in the past years that there was a good demand of Science Teachers who pass-out of B.Sc.B.Ed. course. These student teachers had much exposure to the field as compared to other students as they reap the benefit of receiving the degree in the name of integrated course for science teachers. Keeping in view the NCF (2005), the course has all the essential elements of making the learning learner-centric.

Thus, to draw a definite conclusion of content analysis report, it is stated that curriculum needs a renewal and more efforts to make the course integrated on paper. Papers of Teaching of Physical Science, Teaching of Biology and Teaching of Mathematic are excellent efforts to prepare a science teacher but they need to be taught with an inter-disciplinary team of faculties and trans-disciplinary approach and regular classes must be held to bring out desired results.

3.2.0 EXPERTS RESPONSES' ANALYSIS

As mentioned earlier, the questionnaire was developed by the investigator for the present study. The questionnaire has personal information section in the beginning seeking name, gender, designation, experience and place of work of the expert respondent. It also informs the expert respondent to read the annexure before providing the feedback. Thereafter, it inquires about the knowledge or experience of the course in any form followed by nine questions and annexure. Question number 7, 8 and 9 are descriptive in nature, conditionally.

The questionnaires of the experts were analysed by employing the percentages. Questionnaires were sent to the experts twice, in order to elicit their responses as well as to reach at the consensus as per their responses. For that, Delphi technique was used.

Round 1: The questionnaire was delivered to the expert manually and duration of one week was provided. Some expert seemed to be eager to respond and discuss about the course so they not only returned the feedbacks earlier but discussed in detail too about the practices and the course. When the questionnaires from the rest were collected there was a detailed discussion about the course from some of the respondents. These immense and enormous discussions had facilitated the researcher to formulate the holistic picture of the course run by Regional Institute of Education, Bhopal.

The questionnaire provided base to other interpretations drawn regarding the course like structure of the course, significance and sufficiency of internship, duration of the course, producing specialised teachers and so on.

The first question was a query about the structure of the course (i.e. content of Science and education) in the curriculum/ syllabus of the course which had been responded as followed in table – 2 by the expert respondents:

Table - 2: Percentage wise Experts' Response about Structure of the Course

Structure of the Course			
POOR	**AVERAGE**	**GOOD**	**OUTSTANDING**
0%	**32%**	**63%**	**6%**

Thus, the course structure had been rated as outstanding by 6% of the expert respondent, average by 35% expert respondents whereas 65% expert respondents had rated it as good.

Further, the questionnaire made a query about the other characteristics of the course which has been presented as under in table – 3:

Table - 3: Percentage-wise Response of the Experts

Item No.	Questions	Responses (in Percentage)	
		YES	NO
2.	**Is the duration of the course i.e. 4 years, sufficient to develop in students...?** **(a) the requisite teaching skills**	94%	6%
	(b) the requisite content knowledge	94%	6%
3.	**Is the education part taught throughout the course, i.e. in each semester in an integrated manner?**	47%	53%
4.	**Is the pre-internship and internship programme sufficient for the development of requisite teaching skills?**	68%	32%
5.	**Is the B.Sc.B.Ed. course able to produce specialised teachers with respect to PCM and CBZ?**	74%	26%

Thus, according to the table, 94% of the expert respondents agreed that the duration of the course i.e. 4 years are sufficient to develop the requisite teaching skills and content knowledge whereas 6% did not. There were 53% of the respondents who stated that education part is not taught throughout the course in each semester in an integrated manner whereas 47% accept the integrated teaching. Sixty eight percent of the respondent viewed the pre-internship and internship programme sufficient for the development of requisite teaching skills whereas 32% disagreed. In response to the question number five, 74% expert respondents had voted that the course is capable of producing specialised teachers with respect to PCM and CBZ whereas 26% denied.

As the critical study emphasized on the concern of integration of the two components of the course and relevance of the course in present context, the data analysis for question number 6 and 7 having the essence of the integration has been interpreted in detail, below. The results are presented in table - 4.

Question no. 6: Is the course integrated? (Part 1)

Table - 4: Percentage-wise Response of Experts (Question no. 6, Part 1)

Percentage for YES	Percentage for NO
79%	21%

Table – 4 indicates that 79% of the respondents were in favour of some approaches to the 'integration' of the course to some degree or extent whereas remaining 21% were not in favour of the course being 'integrated' at all. This has been shown with the help of the following figure:

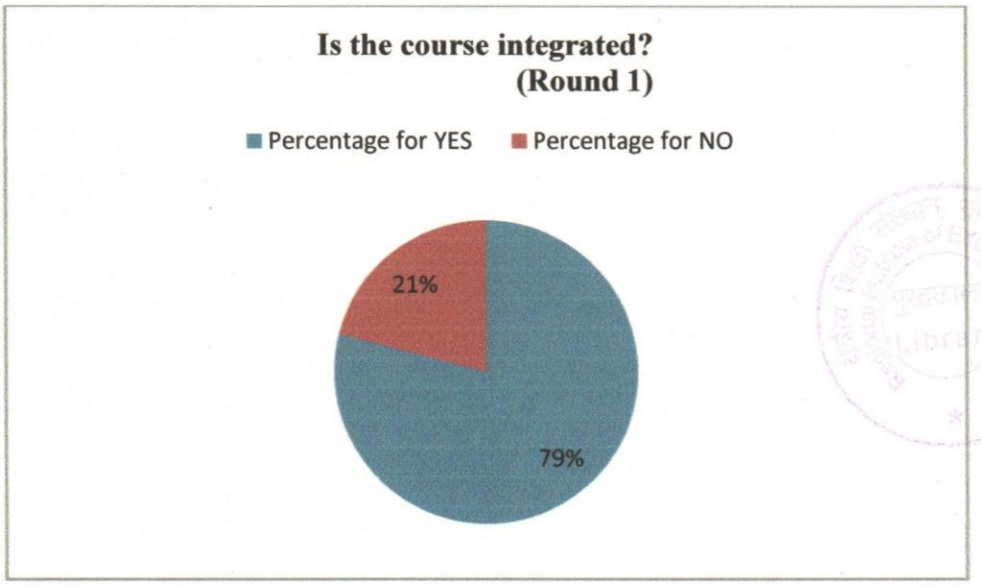

Fig. 4: Graphical Presentation of Table - 4

Part 2: If yes, what approach does the course B.Sc.B.Ed. follow with respect to integration?

Table – 5: Percentage-wise Response of Experts (Question no. 6, Part 2)

Approach	Responses (in Percentage)
Inter-disciplinary	47%
Multi-disciplinary	16%
Trans-disciplinary	16%
No Integration	21%

* No response from 4 respondents who wrote no integration for the same.

The first round of Delphi gave the result that 47% of the expert respondents believed that the course is integrated with inter-disciplinary approach, 16% expert respondent believe that the course is integrated with multi-disciplinary approach, and 16% expert respondent believe that the course is integrated with trans-disciplinary approach whereas 21% expert respondents viewed the course as not integrated and also do not agree with any of the approach that the course follow for integration or to deliver the content and methodology. It has been shown with the help of figure 5, as follows:

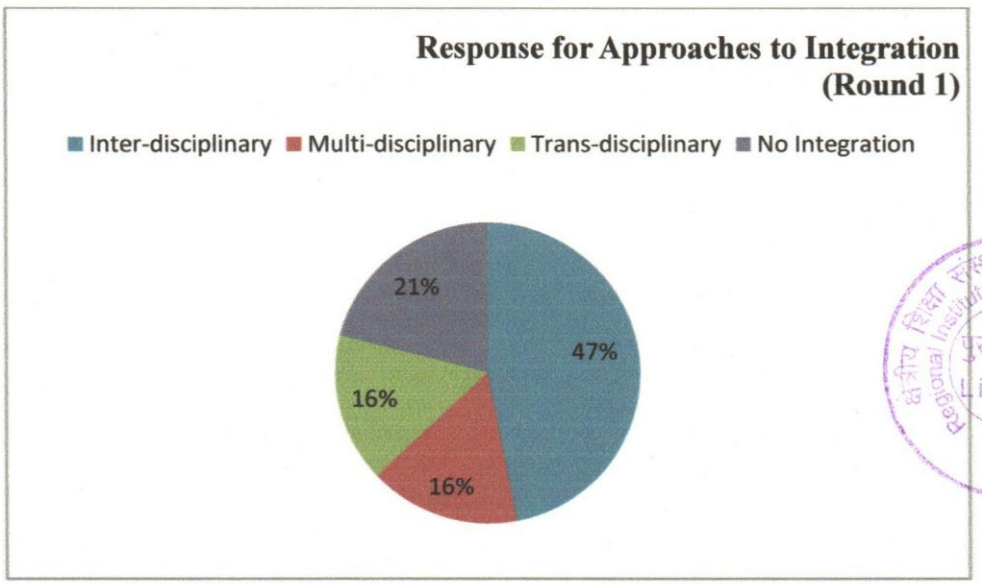

Fig. 5: Graphical Presentation of Table – 5

It is interesting to analyse that as the two disciplines are involved in the course, 47% of the expert respondents, who advocated the integration for the course, viewed this course as 'inter-disciplinary', 16% as 'multi-disciplinary' and 16% percent as 'trans-disciplinary'. It was significant in this round that 21% claim 'no integration' in the course.

Question no. 7: If the curriculum of B.Sc.B.Ed. course fulfil the characteristics of integration, rate the integration in the course.

Table – 6: Percentage-wise Response of Experts (Question no. 7)

Less Than 20%	20% to 40%	40% to 60%	60% to 80%	More than 80%	No Integration
6%	41%	31%	-	-	22%

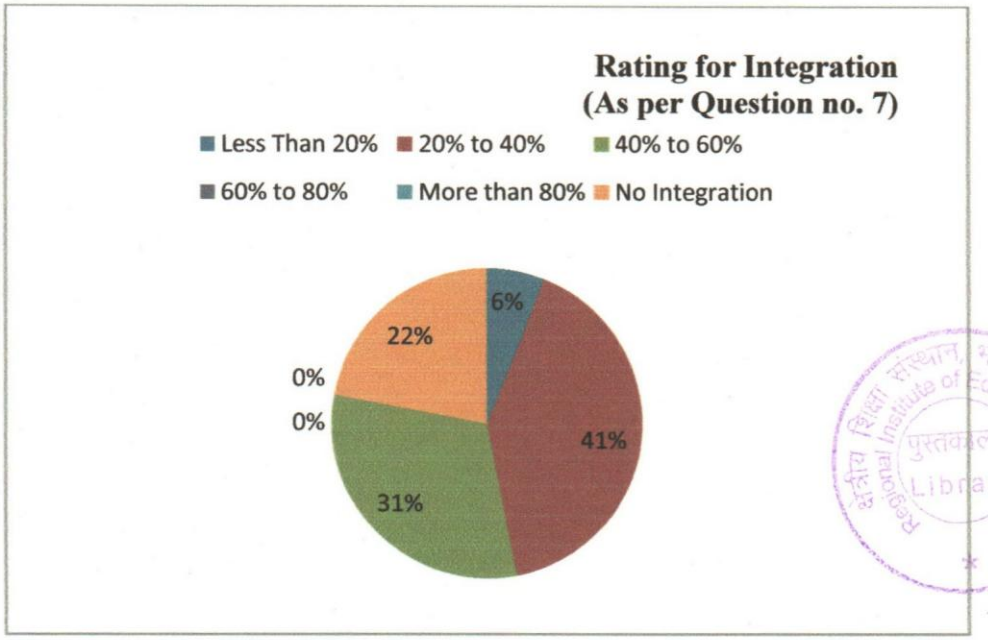

Fig. 6: Graphical Presentation of Table – 6

Thus, it was observed that forty one percent of expert respondents voted for 20% to 40% integration in the course, thirty one percent voted for 40% to 60% integration, and only six percent voted for less than 20% integration in the course whereas twenty two of the expert respondents did not see the course as integrated. None of the expert respondents voted for 60% to 80% and more than 80% integration in the course. On the basis of the round 1, round 2 had been conducted for those who disagreed on any sort of integration in the curriculum.

Round 2:- Following the Delphi technique, a second round was carried out for those four expert respondents who completely denied for any sort of integration in the course. The second round was mainly focusing on question number 6 and 7 that queried about the integration in the course, approach of course integration and extent of the integration in the course.

Question no. 6: Is the course integrated? (Part 1)

Table – 7: Percentage-wise Response of Experts (Question no. 6, Part 1)

Percentage for 'YES'	Percentage for 'NO'
90%	10%

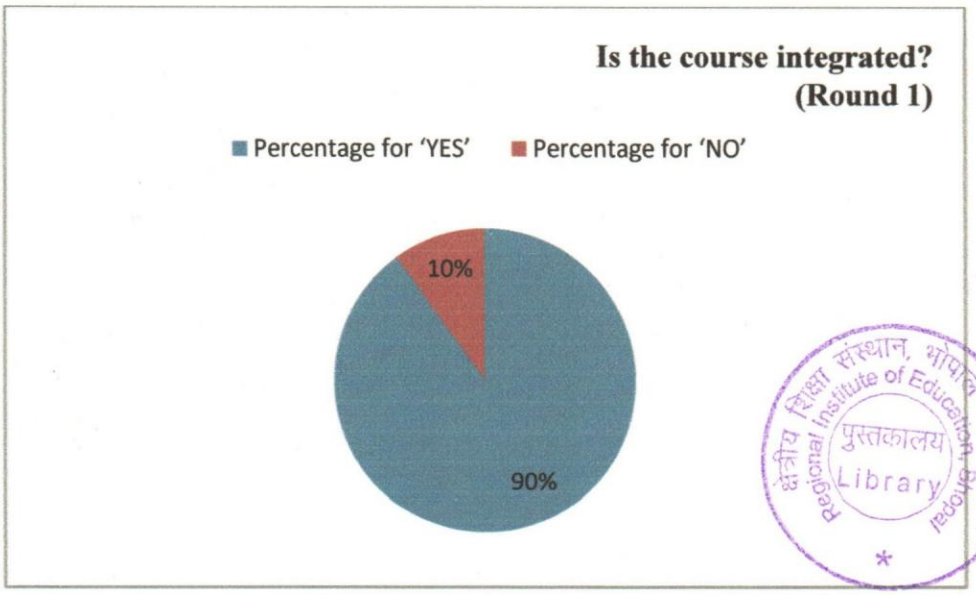

Fig. 7: Graphical Presentation of Table – 7

Thus, after the round two for the part 1 of 6th question, 90% of the expert respondent viewed the course as integrated to some extent/degree whereas 11% *emphatically* and vigorously refused any sort of integration in the course.

Part 2: If yes, what approach does the course B.Sc.B.Ed. follow with respect to integration?

Table – 8: Percentage-wise Response of Experts (Question no. 6, Part 2)

Inter-disciplinary	Multi-disciplinary	Trans-disciplinary	No Integration
53%	16%	21%	10%

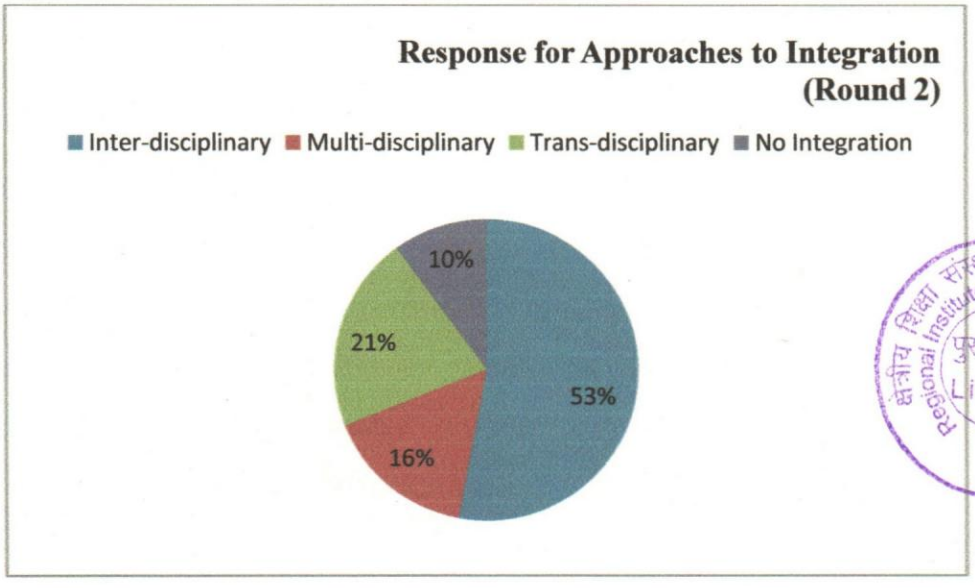

Fig 8: Graphical Presentation of Table – 8

Thus, after the second round of Delphi, there were 53% expert respondents who viewed the course as inter-disciplinary, 21% viewed the course as trans-disciplinary, and 16% viewed the course as multi-disciplinary. 10% of the expert respondents did not see the course as integrated.

Conclusion: It was interesting to observe that none of the respondents opt for more than 60% integration in the course. There was an interesting observation that these expert respondents believed that the course is made integrated in their teaching and not in the curriculum as mentioned in their comments. They stated that it was their experience of teaching in the past for number of years which brings the teaching of content with methodology to make some elements of science integrated with the methodology part. This has been their reason to mention the course as integrated. For instance, one of the respondents who advocated integration in the course viewed that:

"Course is basically designed to provide B.Sc. and B.Ed. degree in four years. Proper efforts have not been given to integrate Science and Education components. Science and Education components run separately so that students will get mastery over required Science content and pedagogical skills. Papers concerning to methodology of teaching, the portion of Science should be there."

In the feedback, those who refused to accept the course as 'integrated' in first round, they argued, strongly, against as follows(view of one of the respondents):

(i) It needs lot of expert in making it integrated.

(ii) It has two courses just put together with four years given for transaction.

(iii) The integration is missing from the development of the syllabus to its transaction."

Analysis of both the views did not differentiate between the two responses as both advocated strongly for a crucial and fundamental changes needed for the curriculum. The most notable point here was that those who responded in favour also strongly recommend for fundamental and essential changes for the course. There were mix responses about the course with regard to the integration. Thus, it cannot be concluded that the said course under investigation is integrated or not.

Comparison of Responses of Two Rounds

The questionnaire was send twice to the experts for eliciting their responses. For comparing their both round responses, percentage was employed for the analysis. The results are presented in table – 9.

Table - 9: Percentage-wise Comparison of the Two Rounds for Question no. 6

Sr. No.	Item No.	Question	ROUND 1		ROUND 2	
			YES	No	YES	No
1.	6	Part 1: Is the course integrated?	79%	21%	89%	11%

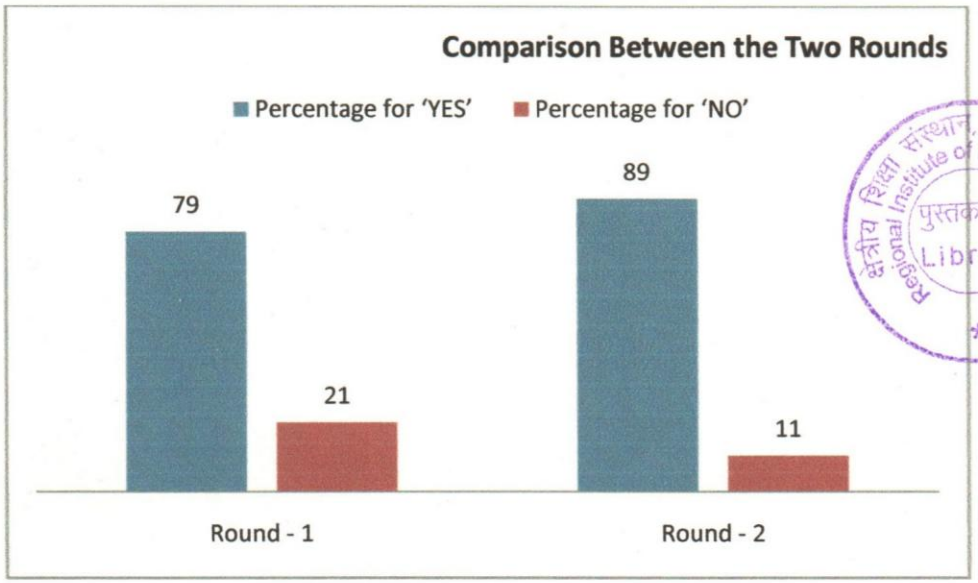

Fig. 9: Comparative Graphical Presentation of the Two Rounds (Question No. 6)

In the round- 1, where the 79% of the expert respondent favoured some sort of integration and 21% denied it, the percentage has gone up to 89% in the second round and denial for integration remained 11%. There was an emphatic refusal from those who refused for the integration for the further round.

The difference between the two specialised streams of PCM and CBZ had been also pointed-out as the inexperienced faculties are not able to integrate the two components of the course. It was experienced in one case that faculty expressed its incapability to fill the questionnaire putting across that it is dealing with only the content part of science component so does not know about education component which will affect the feedback.

An out of the ordinary response had been received from one of the expert respondent who opined that the requirement of the course is such that it should not be made more integrated as complete integration may lead to access restriction for higher degrees or studies like M.Sc. or any other. After the completion of the course, students face problems for upward mobility in their career as there is no post graduate or doctoral or any other specialised programme thereon. This viewpoint reaffirms the student's

viewpoint as discussed later in the chapter and also is in relation with the name of the course as pointed out in the earlier report of content analysis.

Thus, to conclude the expert' feedback analysis report, it is stated that exclusively in the delivery of the course, it is made integrated by a few of the faculties with inter-disciplinary approach. The course has a good structure as voted by 63% of the expert respondent. Duration of the course i.e. 4 years is sufficient to develop the requisite teaching skills and the requisite content knowledge as voted by 94% of the expert respondents. Sixty eight percent of the expert respondents agreed that pre-internship and internship programme is sufficient for the development of requisite teaching skills whereas thirty two percent disagree. There were 53% of the respondents who stated that education part is not taught throughout the course in each semester in an integrated manner whereas 47% accepted the integrated teaching. In response to the question number five, 74% expert respondents had voted that the course is capable of producing specialised teachers with respect to PCM and CBZ whereas 26% denied.

3.3.0 FOCUS GROUP DISCUSSION

A focus group script was prepared after immense renewal and revival of the questions for the discussion. Four focus group discussions were conducted to gain richer and deeper insight about the course and understanding student's perception of the same.

The first focus group discussion was held with the fourteen students of CBZ VIII semester B.Sc.B.Ed. to learn about their experiences, view of the course and how they receive the same. It was a mind boggling session to be with these active students eager to express. The central theme of the session 'integration' remained the highlight of the discussion which went on for almost three hours. There were arguments supporting or opposing each other's notions and beliefs.

The session began with the researcher's formal introduction, stating the very purpose of the discussion and about the focus group discussion's essentials. They were instructed for being disciplined to allow one to speak completely, to be comfortable with the language and not to discuss between the two. The researcher played the role of moderator and there were two observers.

Responding to the query regarding the sufficiency of the duration of the course and time prescribed to the education part, they expressed their satisfaction and informed that the ratio between the two components is 70% and 30% for science and education

respectively. The ratio remains the same with respect to time, methodology and content. Some excerpts focusing on integration and relevance of the course in present context are described as below.

Moderator: So, how are the content classes conducted? Is it purely science or methodology or both, how? Explain with an example.

Student Respondent 1: They are a good mix of both at times but not for all the content as that's not possible. Suppose if the topic Plant-Water relations is taught in the classroom as per the Graduation level, the professor (not giving the name) asks the class to explain that how to deal with the topic with a ninth or tenth grade level and how much to explain according to the cognitive level of the learner.

Moderator: So all the professors do that?

Student Respondent 2: No, not everyone but a few.

Student Respondent 3: Only by specific faculties. For example, some faculties ask while teaching content what approach or method of teaching can be adopted for that particular topic.

Student Respondent 4: Or what can be the best approach to teach a particular topic?

Moderator: So do you all think that course is delivered in an integrated manner?

Unanimously: Yes.

(But one respondent refuses and shakes her neck for no)

Moderator: So apart from all you think that the course is not integrated. Why?

Student Respondent 5: Because we do not teach the content in school classrooms that we learn in the science content component.

Student Respondent 6: But we learn 'how much' and 'where to teach what' in these classrooms only.

Student Respondent 7: The science part gives us command over the content to be taught in the schools.

Thus, the discussion went on. When inquired about the relevance of the course they stated as under:

Moderator: So what do you think of the course? Is it relevant in the present context?

Student Respondent 6: Of course. When we go to the classrooms we are quite confident of the methodologies that we are adopting.

Student Respondent 1: I guess that's why we get placements for. There is so much of demand for the student of these courses. Yeh course bahut hi jaroori hai (This is very important)....It takes care of methodology and content both.

When discussed about the conceptual, application and theoretical understanding of education, it had been found that students are not much inclined towards this component which depicts the true picture of this component; they showed their inclination towards science and preferred to opt a career in the same. As the discussion proceeded about their internship programme, there was an over-whelming response from all. Each of them wanted to express their experience of teaching and found a tremendous difference between the pre-internship and post internship experience. They found the content of the syllabus much relevant and adequate for the curriculum. They preferred the course as it gives dual graduation degree of Science and Education. Ninety three percent of the students agreed that the course was integrated and 7% did not. All of them agreed that internship training was enough to develop requisite teaching skills. Sixty four percent of the students of the group were satisfied with the course whereas 36% were not satisfied with the way it is delivered and taught.

The second focus group discussion was conducted with the six students of PCM of VI semester B.Sc.B.Ed. conducted at the Shanti Niketan hostel of the Institute. The discussion was a complete contrast with the earlier one. The procedure of conducting the session was as the earlier one with introduction and then proceeded to discussion. Responding to the query regarding the sufficiency of the duration of the course and time prescribed to the education part, they expressed their dissatisfaction and informed that the ratio between the two disciplines is 90% and 10% for science and education, respectively, with respect to time, content and methodology. They whined about the last moment push in the course and devotion to science and not to education. When discussed about the conceptual, application and theoretical understanding of education, it had been found that they needed more classes for the pedagogy/methodology part. They praised some experienced faculties whereas grumbled against inexperienced. The course provides strong content for teaching according to them. Some excerpts are:

Moderator: So how was your core training?

Student Respondent 1: It is not good enough. I feel that B.Ed. would have given me a more concentrated training because I am neither able to concentrate on teaching part and nor on science part.

Student Respondent 2: There is so much of pressure for the science content that we do not pay sufficient attention to the education.

Student Respondent 3: We are not given the feedbacks of our micro-teaching so how would we know about our performance.

Student Respondent 4: We are not satisfied with our core training.

Moderator: But the course is integrated.

Unanimously: No. It's not.

Student Respondent 2: Kahan se. Bilkul alag-alag hai. (From where? Completely segregated) There is no connection between the two.

Student Respondent 3: Haan. (Yes). No connection. Na to course me integration hai aur na hi practice me. (Neither integrated in the course nor in practice)

And the discussion went on. When they were inquired about the relevance, they stated as:

Moderator: So what are the benefits you are deriving from the course?

Student Respondent 6: What benefit? We have to study for M.Sc. entrance now.

Moderator: So is it not relevant?

Student Respondent 5: Yes it is: If you want to be a teacher it is great. 'lekin agar further studies ke liye jana hai to mehnat karni padegi'(But for further studies we need to work hard).

When the discussion proceeded about their core-training programme, they all retorted that it is not only mismanaged but also does not prepare them for real life situation. They saw the two components separately. They preferred to do the two courses separately. 100% of the students agreed that the course is not integrated and all of them agreed that core training was not enough to develop requisite teaching skills. All of them were not satisfied with the course and the way it is delivered and taught.

The third focus group discussion was held with the six students of CBZ VI semester B.Sc.B.Ed. who had recently been through the core training and observation. The formalities and rules for the discussion were explained to them too. Here these students contrasted with what students of PCM VI semester in the afternoon had said. They had views similar to VIII semester students of CBZ (Focus group discussion on 19th January, 2013) who advocated the integration in the course: their views matched.

100% of the students agreed that the course is integrated and they were satisfied with the core training as it developed requisite teaching skills.

The fourth focus group discussion was held with the seven students of PCM VIII semester B.Sc.B.Ed. The discussion proceeded after the formalities. The views of these students are similar to the students of PCM VI semester B.Sc.B.Ed. They also did not agree on the integration in the course. 100% of these students viewed the course as not integrated as they did not find any correlation between the two disciplines. But they differed on the discipline satisfaction as they had expressed their satisfaction for the education part and discontentment for the science part. 57% of these students were satisfied with the course whereas others remaining were not. They had also put across that they lacked the complete command on the topic of B.Sc. level but had knowledge of basics of all the topics.

Conclusion: In the academic year 2012-13, the course has a strength of 84 students in VIII semester: 41 students for PCM and 43 students for CBZ and 106 students in its VI semester: 48 students for PCM and 58 for CBZ. During the discussions, it had been observed that these students had been pushed in the course by their parents and not by their will to become a teacher. Most of the students took the course as their parents were in a transferable job and the course requirement is boarding in the hostel. So these students were in the hostel for four years taking their degree from a repute institution. They were least interested in contributing towards the noble profession of teaching. Their inclination was towards higher studies which this course does not provide as also observed in content analysis. They have to compete with B.Sc. students for higher degree or Masters and to do so they need to prepare additionally on their own.

There had been a sturdy observation that students were more appreciative of the experienced faculties as they blend the course in a more practical and applicable manner rather than ad-hoc or inexperienced or specialised faculties who mainly deal with the content part. The content taught by these faculties is mere content whereas experienced faculties teach the content too in an integrated manner from their 3rd year.

A wide departure between the two specialised streams of PCM and CBZ had been observed as PCM students of VI and VII semester did not see the course as integrated whereas CBZ students of VI and VII were in-favour of integration. Thus, 51% of these stakeholders as students agreed with the integration whereas 49% oppose the

notion. But this conclusion is as good as 50-50 as the 1st focus group discussion with VIII semester CBZ students had more participants as compared to other groups.

For a final conclusion of this report it is stated that integration perceived by these students depend upon their teaching faculty who are integrating the curriculum in their teaching. They stated that on paper they are **two** but in practices not to a great extent but to some extent it is integrated where it can be made by professors but as per the observation mentioned earlier the two specialised stream of PCM and CBZ differed in their opinion. Here an interesting observation was that the discussions had clearly divided the groups into two straight groups of PCM and CBZ of VI and VIII semester. These are the experiencing stakeholders of the course who have, according the exemplar provided in Chapter I for integration, taste the sweet milk and can express.

3.4.0 CONCLUSION

The course is much relevant in the present context and unique in its nature and characteristics. Such courses are significant and need of the hour as NCF (2005) and NCFTE (2009) both mention the requirement of trained science and mathematics teachers. Though the course is one of its kinds but there is a huge scope in its improvement and update. As one of the expert respondent can be quoted here:

"Update the syllabus to make it comparable with national standards. Provide MORE practical exposure to students."

The mark sheets of the course are also one but a huge replication of the course itself segregating the components under different headings. Examinations are also segregating the course in two divisions. Content analysis report is agreeing with the reports of Chattopadhyaya (1985) and Yashpal (1993) Committee. The course needs to be redesigned keeping in view the need of 'science education' and not 'science' and 'education'.

The content analysis of the "Ordinance and Course of Studies for Four Year Integrated (Eight Semesters) B.Sc.B.Ed. Course by NCERT" has provided focal point about the three papers in the education component that deals with the teaching part of 'Physical Science', 'Biology' and 'Mathematics' but only in the 3rd year of the course. Though the expert respondents have expressed about the dire need of the change in the curriculum, they are dutiful in their part of the responsibility by integrating the course in practice though it is not integrated on paper. Students and faculties have

rightly expressed the chief contribution of experience in sharing the profound weight of the 'integration'. But the curriculum should undergo the necessitated change as per the requirement of time and demand.

CHAPTER – IV

SUMMARY, FINDINGS AND CONCLUSION

CHAPTER IV

SUMMARY, FINDINGS AND CONCLUSION

4.0.0 INTRODUCTION

The chapter presents the summary of the study, findings and conclusion of the critical study based on the data interpreted in the earlier chapter through the methodology given in the second chapter, and facts and studies stated in the introductory chapter of the study.

4.1.0 SUMMARY

The summary of the present study is presented, below, under different captions.

4.1.1 Significance of the Study

As mentioned in the introductory chapter of the study, Chattopadhyaya (1985) and Yashpal (1993) committee, both express a worry over the scenario in teacher education. Committee by NCERT appointed in 2005 also points out ineffective integration in the teacher education. Similarly, other national documents published like NCF (2005), NCFTE, Discussion Paper (2006) and NCFTE (2009) repeatedly state the weaknesses of these courses. NCERT runs the teacher education courses in its RIEs in the name of 'integrated courses' with an aim of producing science and social science teachers. This critical study intended to look into the integration in the content of the course and its relevance in the present context.

4.1.2 Statement of the Problem

The problem of the proposed study had been worded as follows:

"Critical Analysis of Four-Year Integrated B.Sc.B.Ed. Curriculum of R.I.E., Bhopal"

4.1.3 Objectives of the Study

The objectives of the proposed study were as follows:

1. To critically analyse the B.Sc. B.Ed., Four Year Integrated Course in respect of its integration.
2. To study the relevance of the course as per the present context.

4.1.4 Delimitations of the Study

The study was conducted under the following constraints:

1. Study was limited only to the B.Sc. B.Ed. Four-Year integrated course, carried out in Regional Institute of Education, Bhopal.
2. The syllabus introduced in 2008-09 onwards was considered for the study. This syllabus was published in the year 2008.
3. The relevant tools were administered to limited expert/students/respondents who were the concerned stakeholders in the present study.

4.2.0 MAJOR FINDINGS

The objective-wise findings of the present study are as follows:

4.2.1 Integration in the Four Year Integrated B.Sc.B.Ed. Course:

i. The course is not integrated with respect to its content in the syllabus for the curriculum.

ii. As per the experts' opinion, the course is integrated (90%).

iii. The experienced faculties are working hard to make it integrated in their practice.

iv. As per the opinion of the students of Biological Science group, the course is integrated.

v. As per the opinion of the students of Physical Science and Mathematics group, the course is not integrated.

vi. Inexperienced faculties find the integration part difficult in the absence of the pedagogical knowledge which was experienced by the students pursuing the course.

vii. The course needs to be more systematic and organised towards the integration following the approaches of Inter-disciplinary and Transdisciplinary model for integration.

4.2.2 Relevance of the Course in Present Context

The purpose and call for moving towards an integrated course design stems from the relationship between the classroom and the increasingly complex world of today. Trends towards global interconnectedness, the increase in pace and complexity and the rapid expansion of knowledge have brought with these mounting concerns over classroom relevancy and the lack of connections between education and real-world issues. An integrated course provides a solid response to these challenges by facilitating the application of knowledge, encouraging multiple disciplinary perspectives, enhancing relationships between in-class content and out-of class realities, encouraging depth and breadth in understanding complex issues, and

enhancing student engagement through experiential and active learning. Kovalik and Olsen's (1994) research on "brain-compatible" learning supports an integrated course's capacity to address these challenges by stating that "...the brain is designed to learn from the complexities of real life, an ability unchallenged by the simplicity of textbooks and seat work, as well as the artificial division of knowledge into subject areas.

i. The course under study is very much relevant with the need of the hour. The strength and weaknesses of the course has been mentioned in the documents of NCERT and other national Committees' reports but that can be worked upon to overcome the weak part of the course to make it more relevant in present context.

ii. Campus placements in the schools reflect the significance/relevance of the course.

iii. Students viewed that those who want to pursue teaching profession for them the course is relevant as it strengthens the command over content and develops the pedagogical skills for the effective transaction of the contents.

iv. Experts viewed that the present course is relevant to the context. But, it would be better if some modifications incorporated in the syllabus and practice. The suggestions for modifications are given below.

a. "Integration is not possible in every area of content but wherever possible it should be properly demonstrated to the students and modules on this may be got prepared. There is a scope of improvement in the core training and internship training."

b. "Strengthen the pedagogy part keeping the Science component as it is as the students must have the command over the content."

c. "The course is providing students with all the required skills and knowledge but provide them with more exposure to other areas."

4.3.0 IMPLICATIONS OF THE STUDY

Located at Shyamla Hills, the Regional Institute of Education is 7 Kms away from both Bhopal and Habibganj railway station and about 20 Kms from Raja Bhoj Airport, Bhopal. It looks after teacher education and other educational requirements of the States of Chhattisgarh, Goa, Gujarat, Madhya Pradesh, Maharashtra and UTs of Dadra and Nagar Haveli and Daman and Diu. Students coming to the institute are

often away from their families where their families expect their career prospects in teaching.

After data analysis and interpretation, it is suggested that though the course is a model for other pre-service teacher education to follow but there is a huge scope for its improvement and update. Curriculum can be redesigned and renamed keeping in view its objectives and output i.e. to produce science teachers in the end and not to produce science and education graduates.

Some suggestions of the stud are as follows:

(i) Name: As observed and compared to NCFTE (2010)'s abbreviation part and Chapter II and course name as in RIE, Mysore; the course name itself should be B.Sc.Ed. i.e., Bachelor of Science Education and not making the segregation in the name itself as B.Sc.B.Ed. As NCERT focuses on teacher education, there is a dire need to bring some fundamental changes to the course with reference to its name. An integrated course needs to refine its objective and name with certain novelty instead of carrying the essence of the two disciplines. As the course intends to produce science teachers, it should have named as 'Bachelor of Science Education' instead of 'Bachelor of Science Bachelor of Education'.

(ii) Study Material: The course should provide some study material along with the references it gives for integrated curriculum. Due care and attention should be given to integration while making the study material for the course. The components in the Science part are needed to be identified that can be integrated with the methodology part to develop comprehension on the part of the student teacher about integrated content while developing the study material. Elements of science component need to be identified to make the integration possible with the education component so that a specialised study material of the integrated course can be prepared keeping in view the need of the curriculum. Thus, special study material and thereon relevant course content can be prepared to enhance the quality of the course.

(iii) Inter-disciplinary Team: As per the criterion for an integrated course, an inter-disciplinary team can be prepared to bring the desired results. An inter-disciplinary team can be constituted to administer, manage, and assess the course. Internship and core-training is the backbone for the course that trains its students for future teaching of science. These trainings should be managed and improvised with the help of an inter-disciplinary team.

(iv) Model and Approach of Integration: Presently, Fragmented and to some extent Threaded model, concepts given by Fogarty (1992) explained in the first chapter in the sub-content 'Meaning of Integration' , is followed by this course for its deliverance but the Integrated and Sequenced models are required with clubbing the trans-disciplinary approach to the course. The internship of the course aims to provide its students with life-skills of teaching in a school environment with trans-disciplinary approach of integration but, largely, the faculties are unaware of this approach which can also be practiced while content mastery and pedagogical learning. The course objective and requirements call for of an Integrated, Sequenced, and Shared model for its achievement of the same.

(v) Recruitment: Students of the course had provided the researcher with a focal viewpoint of the difference between the experienced faculties who integrate in their teaching and inexperienced who solely focus on elements of content component. Therefore, there is a felt need that to deliver the course, the professionals of the course should posses an integrated degree in the same field or must have Education degree that is required to teach an integrated course or primarily a pre-service teaching course as expressed by expert respondents of both the departments.

Keeping in view the objectives of the course, the faculties must be selected having the knowledge of integration. They should have the knowledge of different types of integration of the contents as well as the pedagogical integration.

(vi) Options for Pass-out Students: Though students of the course had guilelessly expressed that they would not prefer a completely integrated course as it would affect their upward mobility for higher studies but keeping the Mysore, RIE, as a model, a further course of post-graduation can be redesigned which will be unique in its character at the national level focusing on only 'science education'. Students keep this view as they do not have further options after their graduation except M.Sc. So if an integrated Master degree can be planned keeping in view the growth of these students, these opinions can be reversed. During the course, there is a failure on the part of academy that it has not developed the professional attitude and aptitude for teaching among these students. So apart from developing a new dimension in the course, the motivational force behind the students for teaching is needed to be identified.

(vii) Miscellaneous: The course needs some fundamental changes to bring integration in the course. While doing the content analysis, it was found that there are numerous printing mistakes in the syllabus. For instance, in the 'About the Course' section in

the beginning, the word 'area.'(Second paragraph, second line) has been printed twice repeatedly and in the next line four year needs a space between the two words. Similarly, there are numerous spelling mistakes which must be rectified as the institute has prime esteem and recognition and has been looked upon for a model.

There is much scope for improvement in the course. The curriculum is made integrated by the expert delivering the courses who have been dealing with day to day transaction in the classroom. Two specialised streams CBZ and PCM have responded in contrast to each other as the faculties differ between the two: one taught by those who have been in this field of integrated course of teacher education for many years and are experienced, second are those who are specialised in the content but not in Education. It has been reflected by expert respondent as well as by students in their opinion. Course can be looked upon as a model after it is improvised with some study material, exposure to more practice and necessitated changes as it has much relevance in the present context.

4.4.0 CONCLUSION

The course is not only relevant but need of the hour too in the wake of universalization of education, but it is not the blend of the two disciplines that contaminate each other; instead two disciplines have been put together in the four year duration of the course in which education part has been massively curtailed in its significance. The course is inter-disciplinary in nature by bringing two disciplines together and as Education is multi-disciplinary in its character, it is also multi-disciplinary with philosophies, management, psychology, sociological base to the course but the course need to follow trans-disciplinary approach to amalgamate the content and pedagogy to bring the integration in the course. To some extent, experienced faculties are integrating the course in their practice but have admitted that on paper the course in not integrated.

A significant and notable point was brought out by one of the retired and experienced faculties during the discussion that the course has been in the RIEs for almost five decades but none of the other universities, colleges or institutes has adopted this model of the teacher education course. The course stamps its students with a nationally recognised institute and thus, the products remain in demand forever. Though it had been attempted but with utter failure. So RIEs being the experiment

centres for NCERT must concentrate on to improvise the course in order to be a model for others to follow in the field of teacher education.

4.5.0 SUGGESTIONS FOR FURTHER RESEARCH STUDIES

(i) Critical Analysis of Four Year Integrated (Eight Semester) B.A.B.Ed. Course of RIE, Bhopal.

(ii) Integration in the classroom practices of integrated courses.

(iii) Similarities and diversities of pre-service teacher training courses of all the RIEs.

(iv) Comparative studies related to different courses conducted in different RIEs.

(v) In-depth analysis of the prevailing two-year B.Ed. courses may be conducted.

(vi) Pedagogical and transactional integration of all courses may be done, separately.

(vii) Comparative study of two year and one year B.Ed. Course.

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APPENDICES

APPENDICES

QUESTIONNAIRE

Respected Sir/Madam,

Name:
Gender: F ☐ M ☐
Designation: Experience: years
Place of work:

This questionnaire is meant for collecting data with regard to the research study entitled as **'Critical Analysis of Four- Year B.Sc.B.Ed. Integrated Course of RIE Bhopal'**.Kindly, go through all the questions and provide your responses to those. The information provided will not be disclosed and it will be used only for the research purpose. Read the Annexure before answering the questions.

Have you taught the B.Sc.B.Ed. integrated course of RIE, Bhopal or in some other way know about it?

YES ☐ NO ☐

1. How would you rate the structure of the course (i.e. content of Science and Education) in the curriculum/syllabus of the course?

   POOR ☐ AVERAGE ☐ GOOD ☐ OUTSTANDING ☐

2. Is the duration of the course i.e. 4years, sufficient to develop in students...?
   (a) the requisite teaching skills

   YES ☐ NO ☐

   (b) the requisite content knowledge

   YES ☐ NO ☐

3. Is the education part taught throughout the course, i.e. in each semester in an integrated manner?

   YES ☐ NO ☐

4. Is the pre-internship and internship programme sufficient for the development of requisite teaching skills?

   YES ☐ NO ☐

5. Is the B.Sc.B.Ed course able to produce specialised teachers with respect to PCM and CBZ?

   YES ☐ NO ☐

6. Is the course integrated? If yes, what approach does the course B.Sc.B.Ed follow with respect to integration?

Inter-disciplinary ☐ Multi-disciplinary ☐ Trans-disciplinary ☐

7. If the curriculum of B.Sc. B.Ed. course fulfil the characteristics of integration, rate the integration in the course:

Less than 20% ☐ 20% to 40% ☐ 40% to 60% ☐ 60% to 80% ☐
More than 80% ☐ No Integration ☐

If NO, Mention reasons:

_____

_____

_____

_____

_____

_____

8. If the curriculum does not fulfil the criteria of integration, what is your suggestion to make it integrated?

_____

_____

_____

_____

_____

_____

9. Provide suggestions for the qualitative improvement in the course.

_____

_____

_____

_____

_____

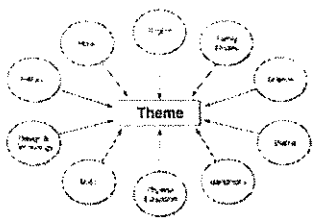
_____

ANNEXURE

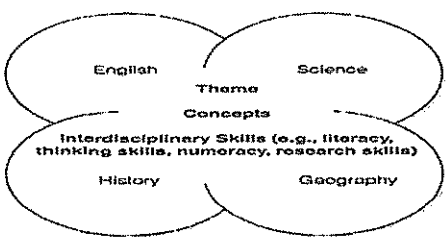
Integration of content/curriculum

Defining integrated curriculum has been a topic of discussion since the turn of the 20th century. Integration seemed to be a matter of degree and method. This correlation may be as slight as casual attention to related materials in other subject areas . . . a bit more intense when teachers plan it to make the materials of one subject interpret the problems or topics of another.In simple language, integration is the unification of concerned subjects and experiences. Thus, theorists offer three basicapproaches to integration; they are:

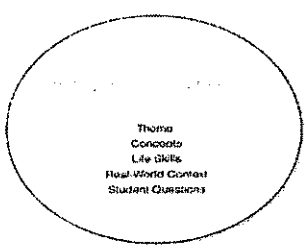
Multidisciplinary approaches focus primarily on the disciplines. Teachers who use this approach organize standards from the disciplines around a theme. There are many different ways to create multidisciplinary curriculum, and they tend to differ in the level of intensity of the integration effort. The adjacent descriptions outline different approaches to the multidisciplinary perspective. Following figure explains the approach



In interdisciplinary approach to integration, teachers organize the curriculum around common learning across disciplines. They chunk together the common learning embedded in the disciplines to emphasize interdisciplinary skills and concepts. The disciplines are identifiable, but they assume less importance than in the multidisciplinary approach.



In the transdisciplinary approach to integration, teachers organize curriculum around student questions and concerns. Students develop life skills as they apply interdisciplinary and disciplinary skills in a real-life context. Two routes lead to transdisciplinary integration: project-based learning and negotiating the curriculum. Following figure explains the approach:



QUESTIONNAIRE FOR STUDENTS

Name: _____

Do you view the B.Sc.B.Ed. course as integrated?

YES ☐ NO ☐

If YES or NO, Why? _____

_____

Is the internship training enough to develop requisite teaching skills?

YES ☐ NO ☐

Are you satisfied with the course and the way it is delivered and taught to you? Express.

_____

_____

FOCUS GROUP SCRIPT

Questions for students (for the focus group discussion)

- Does the duration of the course sufficient/justified as B.Ed. and B.Sc. courses are offered together in four years?
- The time prescribed for the education part in total during the four years is sufficient...
- What proportion was devoted to two streams i.e. education and science in the course with respect to
  -Time
  -Methodology
  -Content
- What are the skills that have been developed during the course in relation to:
  -Conceptual understanding of education
  -Application understanding of education
  -Theoretical understanding of education
- What difference was found after
  -Pre-internship skills taught
  -Internship programme
  -Post-internship understanding of education
- Nature of content-relevance and adequacy
- What is the benefit that you derived when these science and education contents are taught and learned together in course
- If it would have been taught/learn separately, then what would have been your reaction...