Chapter - 2

Review of Related Studies

CHAPTER II

REVIEW OF RELATED STUDIES

2.0 Introduction

Review of related literature was done to find out the gaps in the researches done with respect to the topic under study. It also helps in drawing an insight into the type of tools /techniques to be used for a particular type of study.

This study was related to evaluation of students in class IX of CBSE schools. The objective of Evaluation was to bring about qualitative improvement in education, improving teaching and learning, provision of effective feedback mechanism for the benefit of the learners, teachers and parents to conduct remedial practices to ensure attainment of appropriate learning by the learners. The feedback should also help in introduction of concomitant changes in instructional materials, methodology of teaching and for diagnosis of strengths and weaknesses of the learner (MHRD, 50 years).

Evaluation since ancient India has been carried out in variety of ways. During the Gurukul system it was done using variety of physical and oral tests. After the Gurukul system the evaluation has been conducted using the examinations. In the pre-independence era it was done using the memory tests, oral tests, and written examinations and hardly any studies exist which suggests the form of other researches in the area of evaluation and examinations. These examinations have tended to be an instrument for testing memory, making learning a mechanical process of acquiring skills, teaching as a process of coaching for examinations (MHRD, 50 years). The following were the reviews which show the way evaluation was interpreted over the years and was conducted.

The following reviews show in brief the kind of researches conducted during the 1974 till 1992 in the field of educational evaluation and examinations. The researches of this period were reviewed from the Buch survey of Educational research.

2.1 Trend Analysis of Researches Related to Educational Evaluation and Examination

2.1.1 Trends of Researches during the period 1945 to 1972

The first survey of Educational Researches consisting of studies conducted from 1945 till 1972 was made in 1974 in the post independent era. A review of the first survey shows that studies done under educational evaluation and examinations were categorized as achievement tests, diagnostic tests, factors affecting achievement, examinations, predictions-admission-promotion and failures during 1945 till 1972.The achievement tests were prepared for testing the general scholastics, achievement in language, mathematics, social science and science for higher primary classes and secondary classes. The studies on language were related to making achievement test for testing grammar and vocabulary competency and some of the studies were related to standardization of such test, most of the tests were for English, Gujarati, Marathi or Oriya language. However there were no tests related to testing of listening speaking reading and writing skills. The studies related to achievement in mathematics focused on making of tests and battery of tests for arithmetic, algebra and geometry for students in class III to XI, few of the achievement tests were also standardized. The studies related to social science focused on making and standardizing the tests related to history, geography and civics for classes VII to XI. The studies related to science were in making achievement tests for general science for classes V till VII. Some of the studies were related to making & standardizing achievement tests for chemistry, physics and home science for grades IX to XI (Mehta, 1966 & SIE Gujarat, 1969; Sinha, 1971; Ammal, 1972). Apart from this there were some miscellaneous tests that were made as university entrance test, physical education test, medical fitness test and career guidance test. First survey also has a mention of diagnostics test being prepared for various schools subjects. Only two diagnostic test were made for language one for testing Gujarati spellings of grades IV and V and another diagnostic test for testing Hindi grammar and pronunciation in grade VI (Mehta,1966 & SIE Gujarat,1969). The diagnostic tests constructed for mathematics were for grade VI to X, but the content of the test was same as achievement test (Mehta, 1966). However the diagnostic tests when were followed by remedial teaching showed improved achievement. Ninety five studies done on educational evaluation and examinations had twenty five studies related to

examination. These studies focused on internal assessment, public examination and rate of chance in traditional examinations. The studies were just related to construction of achievement tests for languages, general science and different sections of science and social science and focused on percentage of failures in these tests, difficulty value of question items, comparison of internal and external performance, relation of marks in particular item with the total marks, comparative study of scores of one subject with other subject, content analysis of question papers, comparison of one students marks in different subjects and comparison of internal and external assessment of students performance. Moreover it was found that the performance was poor because the students were assessed on single final exams and also the questions are essay type with few options (Gayen et.al, 1970). While the essay type questions were found to have only one fifth of total questions good and rest were not good discriminators and the teachers and students did not agree on the difficulty level of the questions (Lele et al. 1962a and 1962b). While the defects were found with respect to the difficulty level of questions in terms of content coverage and weightage given and the marking were also was not precise (Malhotras, 1972; Taylor, 1963).Out of the four studies done on comparison of internal and external marks only one study was related to schools. It was seen that there was a positive correlations between internal and external assessments but it varied from school to school and the students worked more in those exams where there was some practical significance for them (Deshpande,1972). Teachers qualifications, teaching methods, conditions, location of schools, teacher transfers, equipment, buildings, clerical work done by teachers, pupils' previous attainment, pupils' attendance, media of instructions and examinations play a major role in failure of the students in the secondary classes (GCPI,1981; DEPSE, NCERT,1964).

It can be concluded from the first survey that the teaching learning process has an impact of students' achievement, the students performed well in both internal and external tests depending upon the practical importance of those tests in the final results, but the uniformity of performance of students in internal and external tests were no seen across all the schools and the examinations just focussed on assessing the cognitive abilities with the help of more essay type questions which lacked content coverage proper weightage and were hardly marked precisely by different teachers. Moreover the diagnosis followed by remediation yielded good results.

The Second Survey on Educational Research consisted of abstracts of studies from

1944 till 1978. The educational evaluation and examinations section of second educational survey shows the abstracts of studies done in the field of achievement tests, diagnostic tests examinations factors affecting achievement and failures in exams. The studies in the field of achievement in different subjects were 45. Achievement tests were made for languages, mathematics, science and social science. The studies related to achievement in language shows that many achievement tests were made and standardized for the subject of English for secondary classes, the tests were assessed spelling vocabulary, capitalisation, reading comprehensions, pronunciation and ability to grasp (Despande, 1972; Sinha, 1967; Feroze, 1957 and Patel 1971). But there were no studies related to particularly for assessing listening and writing skills of the students. However there were studies on which the tests were constructed for languages like Oriya, Gujarati, Marathi and Hindi. The major studies conducted on Hindi language were related to development of Hindi test for class VIII and class V to VIII and finding its reliability, the tests tried to assess vocabulary, comprehension, tenses, spellings and sentence structure (CIE, 1962 & Jha et al. 1964) one of the Hindi tests developed for assessing the vocabulary and grammar and comprehension was standardised (Gaur, 1973). There were some other studies conducted in regional languages like Gujarati, the major studies focussed on constructing the achievement test and finding its reliability for secondary class students i.e. VIII to X grade (Buch et al. 1960; Maniar, 1961 and Bhatt, 1971). Three silent reading tests were prepared for students of grade VIII to XI which focussed on reading comprehension, location of information, vocabulary, reading speed and word meaning identification (Bhagatwala, 1960; Maniar, 1973 & Parekh, 1973). There was only one study related to the standardisation of listening comprehension test in Gujarati (Modi, 1975). Thus the silent reading and listening test were developed for regional language but none of such efforts were put in for English language.

Similarly there were studies related to making of achievement tests in Oriya and Marathi for students of grade VII and grade VIII (Dash, 1967 and Deshpande, 1972).

In mathematics the achievement tests were made and either standardised or the reliability was tested for grades VIII, the items included were from arithmetic, algebra, geometry and spatial relations(Aram et al.,1957; SIE Kerala, 1965 Maniar, 1961; Dash 1967 and Vanakshi 1970). There were also studies where the tests were constructed specifically for arithmetical concepts of grade VI to X which included basic arithmetical concepts and these tests were tested for total reliability (Buch et al.,

1960; Gujarat Research society, 1963, Pendharkar, 1965 and Jha, 1974). Similar studies were done for algebra, trigonometry and geometry was done and the factorial analysis of the students' attainment was done (Gupta, 1974). However the tests could be used only till the new text books were designed. None of the studies have give the details of the type of items asked or the difficulty level of the items included in the tests, since the focus was only to establish the reliability or standardise the tests. Neither have the tests specific for internal assessment or external assessment. There were some studies done in the field of social science. The tests were prepared and either tested for it s reliability or were standardised. The test prepared were for grades V to IX for different sub parts of social science. There was one test for the entire social science of middle school, one test for geography c0ontent of grades VIII to X of Gujarat, Assam and Maharashtra and were standardized (Aram et al.1957; Buch et al. 1960, Misra, 1970 and Deshpande, 1972). Only one achievement test was made for Civics that too for higher secondary. However the researches focussed on the construction and standardisation of series of tests for finding the achievement of students in various social science subjects but there was no mention of the type of questions asked with respect to various level of cognition or the weightage given to the various topics. Majority of the studies done in the subject science were to develop the general science achievement test and to find it reliability using different methods and the concurrent validity sui9ng the marks obtained in the school tests. The grades for which the test were conducted were V to VIII (SIE Kerala; Buch et al.1960, Hira Devi, 1973; Rup Prakash, 1968; Dash, 1967 and Sheth, 1967). There was one parallel test constructed for general science for secondary school students (Aram et al.1957). Apart from this general science test was developed for grades VIII to X of Gujarat (Buch et al.1960), while a test was standardized for grade VII general science in Andrapradesh (Vanajakshi 1970). All the other studies were related to the higher secondary classes. However for subject science also the focus of the studies were to standardize or check the reliability of the test rather than focusing on the different levels of the questions and the content to be covered, none of the studies have mentioned if the constructed tests were comprehensive enough to cover the entire syllabi of the respective grade. Diagnostic tests were made only for language and mathematics. The diagnostic tests prepared were only for diagnosis of Hindi difficulties for non Hindi speaking students. The test covered aspects like spelling syntax, pronunciation, grammar, lexical items of classes IV, V and VI (Sinha, 1971;

Ammal, 1972; SIE Gujarat, 1969). However, there were no specific diagnosis of the other language skills like reading writing and listening. Only one study related to diagnostic test made for algebra concepts in class VIII was followed by remedial teaching which improved the achievement of the students (Sharma, 1969). While all other tests were related to making of diagnostic test for four fundamentals of arithmetic, standardization of algebra test for class VIII,IX and X and to find the trends of errors in computation and to find the difficulties in using geometrical instruments by grade VI and VII students (Mehta,1966; Ashar,1972; SIE, Gujarat). However all the mathematical diagnosis test followed the pattern of the achievement tests implying that the understanding of diagnostic test was lacking in the researchers. The studies related to examinations talked of intra examiner reliability increased more in case of the well defined essays than traditional essays (Jhaveri and Patel,1968). While the scaling reduced the dispersion of marks distribution bringing variation between examiners (Nath, 1972). The supplementary exams in secondary classes always increased the proportion of bad candidates in the pass list(Taylor,1964). The nature of the curriculum and subjects offered by the students influenced the achievement of the students (Sharma, 1967; Bokil, 1956; Rao and Arunajatai, 1971). The other studies revealed the same findings as the first educational survey studies.

Thus, it can be concluded from the studies of the second educational survey that there was much focus on developing achievement test for silent reading and listening test for regional language but no of such efforts were put in for English language with much focus on establishing the reliability or standardizing the tests, moreover none of the studies gave the details of the type of items asked or the difficulty level of the items included in the tests. There was no mention whether the achievement tests were being prepared for internal assessment or external assessment. the achievement tests prepared for subject science were also to standardize or check the reliability of the tests rather than focusing on making the different levels of the questions and the content to be covered, none of the studies have mentioned if the constructed tests were comprehensive enough to cover the entire syllabi of the respective grade. It was also seen that the researchers lacked understanding of diagnostic tests since most of the diagnostic tests were designed same as the achievement tests. intra examiner reliability increased more in case of the well defined essays than traditional essays and the nature of the curriculum and subjects offered by the students influenced the achievement of the students

2.1.2 Trend Analysis of Researches during the Period 1975 to 1982

The Third survey on educational researches included the abstracts from studies done during 1975 till 1982. The survey has described about the UGC document entitled Examination Reforms.

Considering the importance placed on the examinations by university education commission (1948) and secondary education commission (1952) and emphasis laid by the education commission (1964-66) to prepare special units for examination and evaluation at UGC headquarters, UGC made a document entitled Examination Reforms. The document focused on the taking continuous examinations rather than a single annual exam, development of question bank to eliminate the shortcomings of setting exam papers, introduction of grading system and introduction of semester system. In the same lines NCERT focused its attentions on research in examination system at the school stage and focused on development of materials and operational strategies, training at both pre-service and in-service level for teachers, publications, collaborating with state boards, SIET, SCERTs for conducting the researches and implementing various innovative programmes in the examination system at the school stage.

In this survey the studies related to examinations and evaluation has been classified into studies related to achievement tests, diagnostic tests, examinations, factors affecting achievement, predication and admission promotion tests and failures. The studies related to achievement tests show that there were general scholastic tests prepared for finding the numerical ability, vocabulary, mathematical reasoning, analogy, comprehension, sentence completion for secondary school students (Liddle, 1965; De, 1979). However there was no mention of components of psychomotor or affective domains of development in the general scholastic tests. Besides these there were studies which related to making the achievement tests for languages. Oral reading comprehension test in English was prepared and standardized for grade VIII students (Skariah, 1981). All other achievement tests were related to testing the written language abilities, comprehension, sound discrimination, articulation, listening skills and reading abilities in the languages like Hindi, Gujarati and Kannada and standardizing those tests (Shiva nanda, 1981; Modi, 1975; Patel, 1978; Desai,1974;Verma,1977). However though the studies were only done for Gujarati, Kannada Hindi and English, the studies had started focusing on making the listening

skills test rather than only focusing only on the writing skills.

The studies on the achievement tests in Mathematics show that the achievements tests were made for algebra and geometry of grade VIII and algebra of grade IX and were standardised, the achievement test made for grade IX was correlated to the Guilford's Structure of Intellect Model and showed positive correlation (Chauhan, 1982; Ketkar, 1982). However this was the period of introduction of new Mathematics, so there was also a need to research on the areas like trigonometry, calculus, statistics but the researches just focused on making tests of algebra and geometry and standardizing them. The studies on achievement in science reveal that achievement tests in physics for grade VIII to X and achievement test for physics of grade IX only was made and were checked for the reliability (Chhaya, 1978; Khandelwale, 1981). There was also tests made for home science of secondary class students and were standardized (Kapoor,1968; Garg1969). However the tests were made for specific subjects in science and was made only in some parts of the country like Maharashtra and Uttar Pradesh, while in other places no such tests were made and also there was a need to develop a comprehensive test according to the new syllabus, which was lacking. Apart from these physical education test was prepared and Rangachar Satyamurthy Selection Battery (RSSB) was made for testing the physical quotient and helping the students to select different type of curricula respectively (Shukla, 1957; Satyamurty, 1965).

There studies done for making diagnostic tests were related only to language and Mathematics. The studies related to making of diagnostic tests were same as those mentioned in the second survey, hence it has been pointed out that that there has been only three diagnostic tests being prepared for grades III and grade VI of schools of Uttar Pradesh, Haryana and kerala. And one diagnostic test for stage of Gujarat for grade IV and V, there was a lack of tests for diagnosis of language skills like listening, speaking, reading and writing. While it was highlighted that there was not even a single diagnostic test related to English language. The studies related to the diagnostics tests in mathematics had one study which compared the achievement of the pupils of twelve countries and reported the low achievement of the Indian students in the tests due to the lack of quality instruction, improper testing and lack of proper diagnosis and remedial practices. However it was concluded that the researchers have made diagnostic tests only in the state of Gujarat, Uttar Pradesh and Bombay and only for upper primary to the secondary classes while the effort to diagnose the difficulties

in the lower primary was lacking which forms the foundation for the development of higher concepts and also the pattern of the diagnostic test were similar to achievement test which did not solve the purpose of the research.

There were sixty two studies done in the area of examination which has been classified in the survey as studies related to achievement in annual exams, inter-examiner and intra examiner reliability, question papers and their nature, pass percentage, external and internal assessments, correlation between theory an d practical marks, mass copying and innovations in examinations. The studies related to achievement in examinations and the examiner reliability were same as in the previous surveys. The studies related to question papers were only done for colleges and university courses none of them were related to secondary schools. A study done to validate Bloom's taxonomy of educational objectives by analysing the product and process oriented approaches found that the questions related to synthesis was misplaced and the questions related to analysis were misleading in a question bank different secondary school teachers(Singh,1978). The internal assessment marks were found to have some predicative value for the external assessment, but in some places the internal marking was found to be highly liberal, which increased the number of first divisioners and reduction of failures, it was a also found the liberal marks increased the results in the school exams but in the public examinations the higher percentage was not due to the internal marks (Venkubhai, 1965; Rasool et al. 1983; Nath1980). A study on the use and misuse of internal assessment show that out of 25 schools 9 schools resorted to inflation of marks in the internal assessment in mathematics, the form of internal assessment varied from school to school. In biological science 8 schools showed higher percentage of internal assessment than the average performance of the students in the public examination. The major part of assessment was based on written works terminal exams and assignments, no uniformity in the mode of practical exams and the availability of the equipments available also varied from school to school. Only 5 institutional heads out of 25 head were against the continuation of internal assessment (Venkubhai, 1965)

Most of the researches show that liberal marking in the internal assessment has varying relation with the external exams. Some other researches show that only 6percent students secured more than 60 percent of marks in theory and less than 60 percent of marks in practicals (Sali and Umathe, 1979). Introduction of grade system of ranking, supplementing essay type examination with objective type examination,

semester system, internal assessment supplementing the external examination and defining the scope of questions in simple and clear language were some of the innovations that were acceptable to the students as well as the teachers (Koul, 1979). A study on the factors responsible for poor percentage in examination results were found to be lack of material resources in the school, lack of qualified and dedicated teachers, lack of interest in studies and co-curricular activities, lack of proper correction of home work, passive attitude of the parents towards education of their wards. The good or poor performance of the students was no due to the work load of the teachers, teacher pupil ratio, number of working days (GCPI, 1981). Study to compare the achievement of grade VIII students in different subjects when in six monthly regular exam and monthly exam (taken with an improved question papers which aimed at developing comprehension and creative thinking). The findings show that the students performed well in the six monthly test compared to one month test, though they were allowed to copy from books and material in monthly tests. Only good students could even pass in the monthly tests. The new question papers set for monthly tests had questions which should develop original and logical thinking in students. So it was concluded that the reformed question paper will be successful in improving students' performance only if the teaching procedures were changed and curriculum was re-organized to evaluate aspects like emotional development, moral development, skills aptitudes of the child (GCPI, 1971). An evaluative study on the Kendriya Vidyalaya for success and failures showed successful implementation of national integration attributes through wel suited curriculum and textbooks and the need for improving teaching and library facilities (Kumar,1982). A critical survey on examination reforms in the secondary schools of Maharashtra found that the workshops on evaluation helped the paper setters examiner to improve evaluation for the newly introduced course. However the difficulty level of the questions remained the same with more knowledge level questions and less application level questions, only cognitive level was being tested while the real aim of making the evaluation comprehensive was not achieved (Mascarenhas, 1977). A comparison of the internal and external assessment awards of the post graduate students showed that the internal assessment proved to be a booster of the final result of almost all the students by raising their aggregate percentage of marks. However the internal assessment suffered from the halo effect and errors due to central tendency which was a blessing for the students(Rasoo, Sarup& Sharma, 1981).

2.1.3 Trend Analysis of Researches during the period 1983 to 1988

The fourth educational survey was conducted in for a period of 1983-88 but since there was a sudden slump of studies in this area in the year `1980-84 there was no much significant studies done in the area of examination and educational evaluation. Same trend as reported in the third survey has been reported in case of studies related to scholastic achievement tests, achievement test in language, social science and mathematics. The studies related to diagnostic tests were same as the previous surveys, concluding that dearth of studies in preparing diagnostic tests for social sciences, drawing and life science and moreover it has been reported that most of the studies were either survey or experimental design and no other type of design has been used. The studies related to examinations were also same as reported in the previous surveys concluding that more studies should be undertaken in the field of question wise analysis, open book examination, problems related to scaling, fixing the proportion of objective type and essay type questions and preparation of question banks. One of the studies mentioned in the surveyed the views of the people regarding the internal assessment, the findings show that majority of the respondents were in the favour of introducing the internal assessment and wanted the addition of the internal and the external marks in the final results (Kushwaha, 1985). While the study on the attitude of the students and teachers and guardians on the system of examination revealed that students teachers guardians were dissatisfied with the system of examination where there was only one final exams without any internal exams (Sinha, 1977).

2.1.4 Trend Analysis of Researches during the period 1988 to 1992

The fifth survey describes the review of the studies conducted between 1988-92. The studies in the assessment section shows an emphasis on the studies related to criterion reference tests (CRT). Three CRT were prepared one each for environmental studies, Sanskrit language and social studies (Singh, 1988; Raithaththa, 1989; Vaghela,1992). Only on one test made for environment studies the content validity was checked and parallel form of reliability was checked while the remaining two tests described the knowledge that would be measured but it was not checked for its reliability or validity. However the three tests were simplified versions of CRTs that would inform the teachers and students what would be tested and how it would be tested and thus would improve the teachers instruction. A procedure for constructing a test of reading

comprehension using multiple choice items was given which showed the steps involved in designing the multiple choice tests for reading comprehension (Chawla, 1988). Reading comprehension tests were made for grade VIII norms were established (Raviya, 1990). Test for physics, chemistry and biology were made for grade VIII and IX students to find out the low achievers and was standardized (Rozario, 1989). However there has been no works on construction and standardization of tests in different languages as seen in previous surveys. A battery of scientific aptitude tests for class XI students was made to find out their scientific awareness, numerical ability, perceptual ability, spatial ability and figure dexterity of Jammu city, though the test was useful it was not standardized (Sharma,1991). A battery of test of creative thinking for Urdu speaking students was developed and standardized which had non verbal tests like picture completion test, incomplete test, figure repeat activity, consequences, novel uses, similarities, product improvement and study title for grade VIII, IX and X students, but the coefficient of reliability and validity was not defined hence the occurrence of standardization process was doubtful (Siddiqui, 1988). A tool was made to find out the academic alienation scale in terms of social desirability, but the term social desirability has been loosely defined(Chauhan,1988). The self concept inventory (SCI) also did not measure the social desirability in class IX and X students since the respondents marks on all the adjective check list he/she considers to be description of himself / herself were to be rated in terms of appropriateness of description, so the response may be respondents pre-disposition to make a socially desirable impression of his/her personality and also the self concept was not defined by the author (Shah, 1989). Though so many studies have developed scales and procedures for psycho- educational assessment there were few tests and tools to identify and measure a broad range of child, adolescent, student and teacher behavior. Even if the tools were made the conceptualization was faulty and the operationalisation of the terms was also defective, imprecise and has scanty chances to estimate the psychological aspects of adolescents. Also the survey indicates that there was no school based satisfactory measurement procedures of these factors which interfere with or disrupt the educational achievement and social development of the student. Therefore there was a need to develop standardised tests to assess critical thinking and other thinking abilities. There was an urgent need to use both qualitative and quantitative approaches for studying both the process and product, structure and function of education at all levels. An evaluation of the

continuous evaluation system of examination of kendriya vidyalayas to find its effectiveness on final performance in grade IX using school records of five subjects showed that no proper scaling of the students achievement was used. Other trends highlighted were that evaluation was still treated as a procedure or assessing the instructional program, while many educational evaluations conducted in India primarily focus on the product of learning rather than process of learning. However process evaluation based on observations and how the program was being conducted and how the change if any was occurring in teaching learning was also important to find the outcome of the program. Though the process of teaching learning was not much focussed by researches but there was a focus on the content analysis of the questions appearing in the secondary school examination, one such study showed that there was no specified weightage for a particular content, so there was ambiguity in questions with respect to different level of cognitive abilities namely comprehension and application (Malhotra, Beedi and Tulsi, 1990). However the status study of internal examination also revealed that schema of monitoring students progress, use of feedback system for teachers and students and curriculum planners were not appropriate (Malhotra, Beedi and Tulsi, 1989). A comparison of grading system and marking system by analysis of answer books of teacher trainees showed that marking was as reliable as grading system (Kumar, 1991).

2.1.5 Trend Analysis of Researches during the period 1993 to 2000

There were no direct mentions of research studies related to educational evaluation and examinations in the sixth educational survey, only few studies can be used to draw a trend during the period when the survey was done i.e. 1993 to 2000, which was reviewed by the investigator.

The heads and teachers of primary schools in Delhi were investigated for finding out the awareness about the concepts and the extent to which they practiced continuous comprehensive evaluation but the findings were not mentioned in the VI survey report (Rajput and Agarwal, 1998). Comparative study was conducted of materials, methods and evaluation modes in English language teaching, but the findings were not mentioned in the survey (Padmaja, 1996). Since no direct studies were available on examination and evaluation in the VI educational survey the investigator reviewed the studies related to achievement, correlates of achievement in different schools subjects, effect of different modes of teaching and effect of diagnostic and remedial practices.

Reading ability, numerical ability, problem solving ability, arithmetic ability, reasoning, fluency in reading, verbal reasoning abilities and comprehension abilities were directly related to achievement in mathematics Rangappa, 1993; Gaurikuttyamma,1993; lalithabai,1993; Sood,1999; Chakrabarti,2000) Creativity was also found to be positively correlated to mathematical achievement and understanding of the qualitative and quantitative aspects of mathematics (Thampuratty, 1994; Singh,2000). The other correlated of mathematics achievement was found to be numerical ability, numerical reasoning, symbol using ability, spatial ability and abstract reasoning ability (Sumagala, 1995). It was found that the achievement in biology of secondary school students was not dependent on the achievement motivation factor (Kumar, 1994). A paper pencil test was prepared to find the formal reasoning of the students at five levels of cognition as described by Piaget in his theory (Rajgopalan, 1995). Studies were conducted to assess the scientific attitude of the secondary school students using a standardised tool and also to find the scientific attitude of secondary school science teachers towards science teaching (Patil, 1997; Naik and Pathy, 1997). Semantic abilities were found to effect the achievement in all scholastic subjects and especially the verbal relation ability effected the achievement in language (Lata, 1992).The misconceptions in science were found to be related to reasoning ability, cognitive style and achievement (Ansari, 1998). Exclusive studies were done to identify the misconceptions in the topics related to science in secondary classes and diagnostic tests were constructed to find the errors committed while writing and solving the chemical equations (Saxena, 1994;Douglas,S.P. and Rao,G.S., 1997). Studies also show that remedial teaching after the diagnostic test improves the achievement of the students, peer tutoring was found to improve spatial ability of low achievers and students with learning disability , teaching science through multimedia to slow learners was found to be effective in secondary classes (Gyanani and Pahuja, 1996; Reddy and Ramar, 1997; Dhall et. Al.2000).

The importance of joyful teaching for improving the student involvement, promotion of problem solving ability, language comprehension skills and other co-scholastic areas like judgement, analysis, synthesis, critical thinking, problem understanding, finding analogy, checking equivalence in similar situations was found by the researchers (Swarnalekha, 1997; Deshmukh,1997). Effect of the inquiry training model in developing the science process skills, curiosity and creativity was found to

be effective (Swamy, 1995). The use of holistic strategy for development of writing skills in language in which writing was integrated with other skills in a stepwise manner like reading, discussion(on process review writing and reading and reviewing the variety of articles), listening to tape recording and note taking, reading with awareness about the cognitive organisation of the passage, readers expectation(Banerjee,1993).

Inculcation of abilities to understand the values underlying a science course content in the secondary classes have been found to influence the attitude of the students towards science and had an effect on the learning outcomes of the students, it was also found that it was possible to identify the attitudes and values underlying the content of the science through content analysis (Chiapetta et al., 1991; Chiapetta et al.,1993). Similarly physics was found to promote values through the integrated curriculum approach and different curricular subjects helped in drawing nine categories of values when content analysis of different topics of different subjects was done (Amalraj, 1994; Dash,1996 and Nucci,2001). Similarly content analysis of the science text books led to identification of values like intellectual values(creativity), personal values(cleanliness, time alertness), special values (punctuality, co-operation), economic values (Saving budgeting) and aesthetic values (symmetry and beauty)(Amalraj,1999).

Thus the sixth survey highlights the importance of remedial practice and peer tutoring to improve achievement, teaching values by integration in different subject content, significance of joyful learning process and Inquiry training model and holistic approach in improving scholastic achievement along with non scholastic abilities like creativity, analysis, synthesis, critical thinking, problem understanding, finding analogy.

So there were certain key points that emerge from the abstract of researches related to examination and educational evaluation related to the type of assessments and purpose of assessment like importance of teachers training to make the questions related various difficulty levels as per the cognitive abilities defined by Bloom's taxonomy, use of different techniques, tools for internal assessment for the assessing the curricular and co-curricular aspects of the students learning such that proper feedback can be given and students' all round performance can be monitored . Use

of diagnostic tests and remedial practices to improve the students achievement. These studies were till 1992, but in 1992 the POA of NPE 1986 came which emphasized on both internal and external examinations. Due to this emphasis there was an increased emphasis on the implementation of internal and external assessment both in the schools and the inclusion of the internal assessment scores in the final exam scores.

However it emerges from the reviewed studies that the achievement in examination was related to cognitive abilities like creativity, numeric ability, abstract reasoning, comprehension, logical thinking but it also has its correlation with psychomotor abilities like practical experiments and involvement in learning through performance activities and affective characteristics like an interest, attitudes, etc. However the reviews also suggest that there was an impact of teaching learning process, the feedback given and the diagnostics and remedial practices conducted on the performance of the students in the examination. Moreover the school system was bound not only to improve the achievement of the students but also to help in all round development of the students. If all round development has to be done it was not only important to focus on the conduct of various curricular and co-curricular activities but also on the assessment of them to give an effective feedback to the student about their performance. With this intention the National Curriculum Framework (2005) and National Knowledge Commission (2008) laid lot of emphasis was laid on the revamping of examination system and CBSE worked out the framework for overhauling the internal school assessments which was called as the CCE(Continuous and comprehensive evaluation)(CBSE teacher's manual, 2011-12). The framework focused more on quality internal assessment so that it can lead to enhanced learning.

2.2. Emerging Trend after the year 2000

The Central Board of Secondary Education has introduced the scheme of Continuous and Comprehensive Evaluation in its schools in a phased manner.

In the year 2000, the Board implemented the concept of an independent Certificate of School Based Evaluation to be awarded by the school to all students who passed CBSE Class X Examination. This certificate was awarded in addition to the Board's regular certificate and marks statement related to external examination. It carried a footnote that a certificate of CCE was also being issued by the school and should also

be studied for judging the total personality of the student. Besides Scholastic Areas, Co-Scholastic Areas were included in CCE for assessment over a continuous period of two years i.e. Classes IX and X. A recommended format with detailed guidelines was prepared and disseminated to schools for adoption of CCE, by the CBSE. As the next step, in 2004, CCE was implemented in primary classes at I-V (Vide Circulars No. 5/18/25/04). Besides doing away with the concept of pass/ fail system upto class V, the assessment focused on the positive aspects of the child's development during this stage. Accordingly Achievement Records for the primary classes - (for classes I & II and classes III to V) were also developed and recommended to schools with the objective of facilitating holistic learning. As a follow up, the Board decided to extend CCE to classes IX and X in 2009 (Circular No. 39/09).

2.3. Trend of studies Related to CCE

The objectives of CCE as given by CBSE was to help develop cognitive, psychomotor and affective skills, to lay emphasis on thought process and de-emphasize memorization, to make evaluation an integral part of teaching-learning process, to use evaluation for improvement of students achievement and teaching-learning strategies on the basis of regular diagnosis followed by remedial instructions, to use evaluation as a quality control device to maintain desired standard of performance, to determine social utility, desirability or effectiveness of the programme and take appropriate decisions about the learner, the process of learning and the learning environment, to make the process of teaching and learning a learner-centered activity.

Since the objectives of CCE focuses on the teaching learning process, development of cognitive, psychomotor and affective skills, implementation of regular diagnosis and remedial instruction for improving the students, making learning a learner centered activity and deciding the social utility of CCE program the investigator reviewed researches done on CCE with respect to the above mentioned points and have organized the reviews as follows.

2.3.1. Analysis of Researches Related to Development of Cognitive Skills through CCE

There were no much researches on the cognitive development being done using the CCE practices. But few studies revealed the aspects related to cognitive development

and assessment being conducted in schools under the CCE scheme. It was found the scholastic aspects which were majorly concerned with the cognitive development were predominantly assessed using tools like oral questions, paper pencil test, unit test, terminal test and assignments (Sonawane and Isave,2012; Vijayan,2014; Thakur,2016; Sharma,2014; Joshi, 2013). Moreover it was reflected that teachers focused more on achievement rather than improvement, that might be the reason that they conduct more of paper pencil tests oral tests rather than using other tools of assessing the cognitive development of the students (Joshi, 2013). Open book examination class discussion and debate has also been used for assessment of the students (Venugopal, 2013). Computer based tests instead of written tests with self automated feedback, web based question bank to make online tests with a weightage to the questions as per CBSE instructions was found to be effective (Kumari,2012). Experimental study was conducted to use self assessment as a tool for formative assessment and was found to improve the learning of the students in Mathematics (Vijayan, 2014). The findings of the study done on cognitive style show that students with high achievement in science score high on cognitive style, and also the cognitive style and the achievement had great impact on the scientific creativity of the secondary school students (Sharma,2015). Thus the studies reviewed related to CCE practice did not directly focus on the cognitive development or on the various level of questions asked in examination to assess cognitive development. However use of open book examination, debates and discussions mentioned in some of the studies would assess some amount of cognitive development, but the studies have not mentioned the criteria of assessing them.

2.3.2. Analysis of Researches Related to Development of Psychomotor Skills through CCE

Psychomotor skills represent those activities that were primarily movement-oriented. In teaching, emphasis was placed on the movement component, although ultimately in practice, performance requires an integration of related knowledge and values (Oermann, 1999). Gagne characterized psychomotor skills as coordinated muscular movements that were typified by smoothness and precise timing. In the school context the muscular co-ordination can be seen while the students perform the speaking, writing, listening, oral reading, performing laboratory experiments, drawing, playing musical instruments, dancing and gymnastics and use of equipment (Gronlund and

Linn,1990). However there was no direct review based on the development of psychomotor skills or assessment of the same but some related aspects can be seen from the reviews like the programs to enhance and assess co-scholastic aspects which were related to practical work, development of oral and written presentation skills, some creative skills involving the psychomotor skills and assessment of the co-curricular activities. Initial surveys on the primary schools suggest that CCE helped in identification of indicators for the assessment of the performance of the co-curricular activities which improved the performance of the students (Rajput, Tewari & Kumar, 2003; NCERT, 2003). Only one study showed the evaluation of the competency based performance test for co-scholastic areas, using a pre test and post test design, which might be related to psychomotor or affective domain but the contents of the test were not mentioned so probably it might not be for psychomotor skills (Pani, 2004).). At the same time there was also a dire need of formal training for the teachers to handle the co-scholastic activities, hence there was no evaluation of these activities neither in the half yearly or annual exams leading to the neglect of Co-scholastic part of the curriculum (Bhattacharjee and Sarma ,2009; Sharma 2011). Even the teachers manual had no instruction regarding tools and techniques for evaluation of co-scholastic area, while the new manual also lacks clear guidelines for proper implementation of CCE in classrooms (Saluja, 2016 ; Sharma, 2011).

However one study reveal, the orientation given to the teachers regarding CCE processes, use of multimedia for scholastic and co-scholastic activities and use of different tools and techniques of evaluation, so as to reduce the stress of the teachers and providing student with immediate feedback (Kumari, 2012). But there was a point of doubt as to how the performance test usually used for assessing psychomotor abilities should be used using ICT. Recent studies show that Continuous & comprehensive based performance tests and oral tests provide maximum exposure to the children & motivate the children to be concentrated on the required skills (Jadal, 2011). However lack of resources in terms of time, laboratory, library facilities and large class size with diverse composition was found to be constraint while conducting such activities and assessing them for a large number of students (Shome & Natarajan, 2013; Sardar, 2016).

Some studies also suggest the integration of Art education, physical and health education and work experience in the content part of various subjects in schools of

Kerala and also the activities like debate, sports and arts were evaluated (Sharma,2014; Thakur, 2016). Students found performance activities conducted under CCE to be interesting and different in which they did not have to do the boring exercise of copying from the text for completing assignments and where they could present in a creative manner by using different things like cartoons and poster (Venugopal, 2013). While attempts were made to conduct practical/ laboratory activity to assess the students using the CCE frame work but assessment was not as per the CCE framework while the group cohesiveness was found to increase with it (Joshi, 2013; Gupta, Koul & Sharma, 2015). Thus the trend of the studies show was that in some parts of the country the conduct of activities and evaluation was done for psychomotor activities though the teachers manual lacks clarity but in other parts of the country the activities were neither conducted nor assessed. There was only one study which shows that the that 67.49% , 76.22% and 69.45%, CBSE school teachers perceive that the co-scholastic aspect of curriculum, extra-curricular activities aspect of the curriculum and assessment pattern of these aspects of the curriculum given by CBSE as moderately high (Madan, 2013). Since this was only a perception study using only one tool of study it was difficult to ensure that the finding will be true for all teacher of CBSE, also the other studies reviewed were related to CCE implementation in state board schools, which arises the curiosity to find if the same condition prevails with respect to the curriculum and practices in other CBSE schools.

2.3.3. Analysis of Researches Related to Development of Affective Skills through CCE

Affective skill include the co-scholastic aspects included in the CBSE teachers manual as emotional skills, social skills, development of interest and attitude towards the teaching learning process, learning and evaluation process and development of social and personal skills. In this regard there were some findings from the review of the studies which focus on two aspects namely the assessment of affective skills and the development of the skills. As far as the assessment of the affective skills was concerned, in the beginning when CCE was just implemented it was found that the implementation of the scheme helped in identification of indicators and using them for assessing the performance of students in social personal qualities (NCERT, 2003). Also it was seen that training provided to the teachers helped in improvement of

evaluation practices pertaining to personal and social qualities of students (Rao, 2006). Social and personal qualities were assessed based on the Observation diary maintained but there was a lack of daily record maintenance (Sonawane and Isave, 2012; Joshi, 2013). Apart from the observation there were other tools seen for observation like e-observation checklist or rating scale, e-portfolio and anecdotal records for assessment (Kumari, 2012). But 90%, 85% and 52.5% schools could not use maintain the anecdotal records, portfolios and documentation for co-scholastics respectively and 91.45 percent teacher could not assess the co-scholastics. (Sardar, 2016).

When CCE was implemented in the state board schools the teachers manuals were prepared but which lacked clarity on proper implementation of CCE in classrooms due to which they were unable to evaluate socio-personal qualities of learners also lack of training, shortage of teachers, inadequate supporting infrastructure, paucity of time and heavy workload were the reasons given for improper assessment of the affective skills (Thakur, 2016). However wherever it was assessed also was done without knowing the sub skills of life skills, emotional skills and social skills (Kothari and Thomas , 2012). Some of the studies show the efforts put by the teachers to develop the affective skills using performance test, group activity, discussion, debate, making (Jadal ,2011; Kalia, Arora & Sharma, 2013). Students have responded that such activities increase their team spirit, listening ability, tolerance, attention, positive learning attitude, co-operation, competition, communication and persuasive argumentation skills and develop interest in the subject (Jadal, 2011; Kalia, Arora & Sharma, 2013; Venugopal, 2013; Vijayan, 2014). The teacher can develop and assess the affective skills only if the teachers manual gives proper guide lines. However when the teachers were asked about the resourcefulness of the manual they said document hardly describes about assessment of personal and socio qualities (PSQs) so assessment of Social/emotional qualities were integrated with the content part and not assessed separately (Sharma,2014). This implies that the teachers might be scoring high for those students who perform well during the teaching learning process and in the class tests. When the perception of the teachers was taken on the various aspects of CCE scheme like Syllabus aspect of the curriculum, Teaching Learning aspect, Remedial Coaching aspect, Co-Curricular and Extra- Curricular Activities aspect and Assessment Pattern aspect almost 70% of the CBSE school teachers said that all these

aspects were very good in developing the affective skills(Madan,2013). However, how these aspects can develop affective skills have not been mentioned in the research studies. But some insight can be gained from the findings that the organization of scholastic activities like quiz, debate, discussions, and other group activities may help in development of the affective skill, but how exactly they have to be assessed during the activity was not evident from the findings of the researches.

2.3.4. Analysis of Researches Related to Diagnostic & Remedial Practices through CCE

CCE focuses on improving the students learning by provision of diagnosis and remediation of the difficult learning areas. Thus the scheme itself ensures the continuous assessment of students performance, diagnosis and remediation to improve the quality of students achievement and in scholastic areas (NCERT, 2003). However in a survey on primary schools of 32 states and union territories (UTs) it was found that in more than 50% states/UTs hard spots in learning were being identified at all stages of school education, which indicates the diagnosis practice being done (NCERT , 2004).

Unfortunately, the reviewed studies on CCE do not show much emphasis being placed on the Diagnosis and Remediation. One of the primary schools associate with NCERT shows that one hour was allotted in the school time table for providing remedial instruction for those students who faced problems in attainment of competencies in different subjects (Rao and Rao, 2004). In one of the study where the data was collected only from the teacher's questionnaire it was found that 83% of teachers identified the learning difficulties of the students and conducted diagnostic and observation of low achievers, while 90% of teachers said they give remedial teaching to academically weak students (Thakur, 2016). In the state board schools of North east India it was found that the teachers manual gave no guideline for remedial teaching or retest (Sharma, 2014). Moreover studies show that the remedial instruction was discussed in the PTA meeting or written in the diary for informing the parents, since it could not be conducted in the school due to lack of time, thus no remedial classes were conducted (Sonawane and Isave,2012; Kumar & Kumar,2015; Joshi, 2013). Thus the reviews show that the in some places the diagnosis and remedial practices were conducted to improve the students' achievement but at other

places it was left at the discretion of the parents to provide a remediation. Thus it becomes important to see how it was being conducted in the CBSE schools where CCE was being implemented for a long time now.

2.3.5 Analysis of Researches Related to Change in Teaching Learning Process through CCE

As per the objectives of CCE put forth by CBSE the teaching learning process has three aspects namely learning environment, de-emphasis of memorization, teaching and learning as a learner centered activity. Also it has to be understood that since CCE has been a new scheme of evaluation, quite different from the traditional evaluation, it was imperative for the teachers to get training. Thus the research studies were reviewed for four aspects (teacher's training, learning environment, de-emphasis of memorization, teaching and learning as a learner centered activity) aspects with respect to CCE.

After the training program the social qualities and personal qualities of students records showed a great improvement of teachers' evaluation practices and also the questioning skills of the teachers improved in the primary schools run by RIE, Mysore (Rao and Rao,2004;Rao ,2006). While in other schools of the country there was lack of proper orientation and training to the teachers about CCE, especially to handle the co-scholastic aspects of CCE (Bhattacharjee and Sarma, 2009; Saluja, 2016; Sharma ,2011). In the state board schools even if the training program was held by the state authorities, only the permanent teachers and that too few from each school were allowed to attend. This caused a major problem as majority of teachers were left without any orientation and training on execution of CCE (Saluja, 2016). This caused the teachers not to prepare their own evaluation tool and to consider CCE as a hectic process (Joshi, 2013).

In some states even if training was given, sufficient material was not given to teacher and large number of students in one class was also a big problem for formative evaluation (Sharma, 2011). In some places teachers were familiar with the term CCE but they were unaware about the exact meaning of continuous comprehensive evaluation, teachers laid stress on student's achievement instead of improvement and hardly maintained the evidences of evaluation (Sonawane and Isave,2012; Sharma,2014; Kothari and Thomas , 2012). The teachers did not have any kind of

formal training to handle the co-scholastic activities so there was no evaluation of these activities either half yearly or annually, a survey showed that only 11% of the teachers in a state evaluated Co-scholastic aspects remaining did not (Bhattacharjee and Sarma, 2009; Kalia, Arora & Sharma, 2013). 67.5 percent head masters of upper primary schools said that workshops for co-scholastic aspects were not given and the teachers manual were also not given to the teachers (Sardar, 2016).

One of the important aspects which may guide the teachers to plan the teaching learning process and evaluate them was the teachers manual. In the northern part of India teachers' manual explains how to connects children's day-to-day life with that of classroom teaching-learning processes, advises teachers not to make comparison among children nor should a child be labeled as 'weak', 'foolish', 'notorious' etc., mentions about scope of using various tools and techniques for different subjects suggested in the document suggests teachers to link the life of learners with learning and expresses scope for giving feedback to children in terms of their achievements and teachers have been given the flexibility to use the tools and techniques they like for assessment (Sharma,2014). While in the western India the suggested formats of tools and the description of technique was comprehensive. The document highlights the concept of teacher as learner and evaluation as a learning tool. The formats of evaluation tools were clear and specific. Teachers were given flexibilities to decide the learning outcomes, sum learning indicators, activities on their own (Sharma, 2014). Massive teacher training to all the teachers were organized by the BRCs throughout the state of Kerala. But the document lacks the assessment strategies for CWSN students (Sharma, 2014).

In some places though guidelines/ manuals were given to teachers they claimed to lack necessary and relevant materials that gave them specific clarity on proper implementation of CCE in classrooms (Kothari and Thomas, 2012). However lack of proper understanding of CCE has lead the teachers to think that there was an increased volume of work and time required for planning and executing and then evaluating (Kumar & Kumar, 2015). Even the students also didn't have an understanding CCE (Kothari and Thomas, 2012).

The teaching learning was also influenced by the type of activities conducted and the content taught. It was found in one of the states that there were multi-grade teaching

which made it difficult for a single teacher to assess students from all the classes on all the aspects of CCE, large classroom size was also a problem for the conduction of formative activities and its evaluation (Saluja, 2016). There were studies which showed that teachers had to hurry with the syllabus while carrying out CCE and this did not justify the purpose of CCE, even the subjectivity in the evaluation sometimes raised questions against the validity of formative assessment through activities (Saluja, 2016). Apart from this there were studies in which a positive attitude towards science when taught in a laboratory based learning environment was studied, the students' attitudes towards science and that laboratory work became positive (Gupta, Koul & Sharma, 2015). In one of the study the teachers felt implementation of CCE should be done through projects, assignments, experiential learning environment to enhance creativity, life skills, fun learning, better class participation and develop student centric system of teaching learning, better interpersonal relationship, peer group learning, better opportunities for the average students to excel and for them to have better self awareness, but they implemented or not was not revealed since it was an attitude study (Kalia, Arora & Sharma,2013). While only one study revealed that 88% of the teachers and 97.2% of the students said that activity based teaching was used to teaching in the upper primary classes of state board schools (Sardar,2016).

In another study the effective use of web 2.0 tools like blogs, wiki, forum etc. by the students to make evaluation integral to the teaching-learning process substantiated by teacher student discussion was shown (Kumari, 2012). While in some schools even the teaching aids were not made available to the teachers to use in the teaching learning process (Venugopal, 2013). However the teaching learning process should be supported by reinforcement and it has an effective impact on the learning process and the achievement (Angadi & Akki, 2013)

Some studies showed that the teachers gave project work for formative assessment but only a few teachers guided the students how to do the project, while some teachers made the evaluation criteria for the evaluation of the project and expressed it to the students some teachers did not do that, most of the teachers assessed and gave feedback in time to the students while few didn't do that (Kumari, 2012; Shome & Natarajan, 2013). Some teachers gave simple projects and some gave integrated projects (Kumari, 2012; Shome & Natarajan, 2013). Thus it can be concluded that CCE was an effective scheme to improve the teaching learning process but only if

adequately prepared for the effective and efficient execution in schools on reality ground (Singhal, 2012). Since studies in the different places show almost different results with respect to CCE implementation it was necessary to see the actual scenario through classroom observations and other tools and techniques of research. Moreover most of the research findings were for the implementation of CCE in state board schools and hardly two studies were with respect to CBSE schools hence investigator would like to see the teaching learning process with respect to CCE in the CBSE schools.

2.3.6. Analysis of Researches Related to Summative & Formative Assessment as per CCE

Summative and formative assessments were the bases which make the evaluation continuous and comprehensive. However, the traditional examination system hardly laid any attention on the formative assessment, hence it was important that the teachers get enough guidelines to conduct formative assessment. As the meaning of the word formative assessment, ensures the assessment to be conducted during the teaching learning process, but the assessment of the co-scholastic aspects need proper guidelines. This guidelines was provided by the CCE teachers manual. However the research findings show different pictures for different places. In the teachers manual made in the state of Kerala, evaluation as an integral part of teaching learning has been expressed to explain its continuity, use of constructivist approach, evaluation of co-scholastic aspects, guidelines for CWSN students has been emphasized, various formats, reporting procedures multiple ways of assessment and various assessment resources have been explained (Sharma, 2014). But there was a lack of proper materials for implementation of CCE and there was lack clarity in the teachers about how to do the assessments, especially of the co-scholastic aspects (Sharma, 2014; Kothari and Thomas, 2012; Thakur, 2016). While the teachers manual in the north eastern states lacks proper explanation about the various tools and techniques of evaluation, assessment of co-scholastics and the understanding of the term ‘Continuous (Sharma, 2014). Even when training and sufficient material was given to the teachers large class size hindered the formative evaluation process (Ganpati, 2011). Formative assessment has to be done as an integral part of teaching and learning process but the findings from different studies show that formative assessment was done at the end of each session, there was lack of daily record

maintenance, lack of formative feedback, (Bansal,2014; Joshi, 2013; Sonawane and Isave,2012). Since there was no regularity in the formative assessments conducted and the maintenance of the daily records the teachers felt the formative assessment as laborious activity compared to summative evaluation and could not make formative assessment tools (Ganpati, 2011; Sonawane and Isave, 2012). However there were studies which revealed the use of e-assessment techniques using e-rubrics to measure indicators like ingenuity, creativity, interactivity, comprehension, originality etc. which helped in giving immediate feedback to the students , but the effectiveness of the e-assessment was not reported (Kumari, 2012). However 57% of the teachers think that grading system and Mandal education officers of upper primary schools of state board schools felt that grading was difficult and was unsuitable for assessment (Sardar, 2016)

One of the objective of formative evaluation was to give feedback to the students based on the evaluation criteria but it was revealed in one of the studies related to use of projects for formative assessment that only 59.86% students agreed that teachers gave feedback on the assessment criteria of the projects (Kumari, 2012). Total 92% students of upper primary state board schools said that teachers gave positive feedback for projects and assignments that they did (Sardar, 2016)

The status study of trend of assessment, both formative and summative, as per the CCE during 2007 and 2010 showed that there was no significant difference between the assessment processes (Vijayan and Patidar, 2013).

Some studies revealed that CCE was being interpreted as a massive increase in the quantity of short FA tests by students which help in eventual pooling of the CGPA (Bansal, 2014). Also the concept of formative assessment has not been understood as to be conducted during the teaching of different concepts and evolving new assessment techniques have not been tried by the teachers for formative assessment may be because formative assessment has been considered as an independent component of classroom teaching (Bansal, 2014; Vijayan, 2014). Thus the conceptual whole related to formative evaluation seems missing in the understanding of teachers and students which has led to loss of the essence of the continuous and comprehensive evaluation (Bansal, 2014; Thakur, 2016).

2.3.7. Analysis of Researches Related to Use of Evaluation as a Tool of Social Utility

Evaluation as the social utility tool implies to the effect of CCE on students, teachers, parents and the school. The effect may be a perceived one or an actual effect seen during the classroom practices.

The teachers feel that school based evaluation scheme has helped in improving the performance of students in scholastic areas (Rajput, Tewari & Kumar, 2003). However the trained teachers improved in observing the personal and social qualities of students like punctuality, cleanliness, cooperation, truthfulness, patriotism and care for environment, making records of them and improved their evaluation practices (Rao and Rao, 2004). In a survey conducted to gather the teachers opinion about CCE it was seen that 75% of them feel that the change in education system would be instrumental in making our students more confident and better learners (Kalia, Arora &Sharma, 2013). While 98% of the teachers opinion was that CCE was helpful to students of upper primary schools of state board (Sardar, 2016).

While it was seen that the stress levels of Married teachers ,single teachers, Trained and untrained teachers, Arts and science teachers and the teachers who have undergone training and not undergone training for CCE did not vary much (Jayachandran & Maheswari ,2014), implying that the CCE was not much stressful to the teachers . However, in some studies it was shown to create a stress free culture of evaluation because teachers took their CCE Record Books in classroom along with them and recorded students responses (Bansal, 2014).Teachers have expressed that CCE would be more beneficiary for the students than the previous exam pattern and it would lead to reduction of suicide cases due low marks (Srivastava ,2011). However if the teacher constantly observes the students it creates stress on them, learning becomes a stressful event (Bansal, 2014). While in some studies students expressed that they could participate freely and actively in the class; were able to connect to the subject by relating it to their everyday life; their own experiences were valued; they were able to contribute to the larger picture of the concept; became aware of their social responsibilities in the course of discussing various issues that were closely connected to their families and community and able to draw plausible solutions to problems and issues in society and could also get clarity about new concepts

(Venugopal, 2013; Srivastava, 2011). In a comparative study it was found that examination stress of the students studying under grading system was less compared to those getting marks (Rajshree & Kumar, 2013). While 89 percent students had less stress of examination due to CCE (Sardar, 2016). However, the pressure of the examinations have been depicted by other studies also. It has between found that some were unable to deal with the pressure to prepare more number of tests in a day which widens the gap between good and poor students, demotivate the students if they do not get good grades in each formative, thus increasing their stress (Bansal, 2014; Srivastava, 2011)

While students also say that CCE has reduced their casual attitude and neglect towards exams because many formatives were conducted (Bansal,2014). Thus as a social utility tool CCE intended to reduce the stress of the students and teachers, which it has done in some places where the teachers are doing good planning and students have a positive attitude towards studies, but in other places it was creating lot of stress on the teachers and students. So the conditions are not same everywhere hence the investigator wanted to check the social utility of CCE through this research in CBSE schools, to find out if the scenario has changed after so many years of implementation of CCE.

2.4. Research Gaps in the Reviewed Researches Related to CCE

Out of all the reviewed studies there were some studies which aimed at finding the opinion of the teachers about CCE, attitude of the teachers towards CCE and perception of the teachers towards CCE also there was a study which reviewed the status of evaluation practices in the primary schools of 32 states and all the union territories. Findings show that most of the states/union territories have divided full academic session in either 2 or 3 terms excluding Jharkhand, Kerala and Rajasthan, which makes gives the ease of formative and summative assessment (NCERT, 2004). Competency based teaching learning approach was being followed in 16 states/UT excluding Jammu& Kashmir, Madhya Pradesh, Meghalaya, Tripura and Chandigarh, which might be improving the teaching learning practice with respect to CCE (NCERT , 2004).

There were eight studies which focused on the attitude of the teachers or perception of the teacher or the opinion of the teachers on the CCE in secondary schools at different

places in India. However the focus of the studies were to compare the attitude/ perception/opinion taking variables like gender(male/female), type of schools (government/private) and the qualification of the teachers(graduate/post graduate), demographic location and years of teaching experience. Apart from comparison about the awareness or perception/ attitude the findings of the studies hardly revealed anything that could support the objectives laid down for CCE implementation.

In one of the surveys on more than 50% teachers were having highly favourable attitude towards CCE. Teachers of government schools had more positive attitude towards CCE. There was no significant difference regarding attitude of CCE among science and social studies teachers (Rathee, 2014). In another study it was found that 36.11% of the sample possessed high awareness towards CCE (Kumar & Kumar,2015). The perception of rural School teachers about CCE was better than urban School Teachers, while the attitude of rural and urban school teachers was the same towards CCE (Kauts & Kaur, 2013; Barwal & Sharma, 2015). When the qualification was taken as a variable it was seen that attitude towards CCE was same between graduate and post graduate teachers in secondary schools. (Pazhanimurugan, Sivakumar & Benjamin, 2015). The Government and Private secondary school teachers' attitude towards continuous comprehensive evaluation significantly different but the awareness about CCE in government and private school teachers was the same (Barwal & Sharma,2015; Thote, Mathew & Rathoure ,2013). The opinion of government male and female school teachers towards continuous comprehensive evaluation and opinion of government and private school male teachers towards continuous comprehensive evaluation was the same, while the opinion of private male and female school teachers towards continuous comprehensive evaluation was better than opinion of government and private school female teachers towards continuous comprehensive evaluation (Anitha ,2014). Secondary school teachers' attitude towards continuous comprehensive evaluation in state board and CBSE schools were not different (Barwal& Sharma, 2015). The attitude of male and female secondary school teachers' attitude towards continuous and comprehensive evaluation was found to be the same (Anitha, 2014; Barwal& Sharma,2015; Pazhanimurugan, Sivakumar& Benjamin,2015). While the male B.Ed. students had a better awareness about CCE than female B.Ed. students (Islam &Chakraborty , 2012).

Only one study from the 39 reviewed studies on CCE implementation on upper primary schools of State board schools Andra Pradesh tried to give a picture about the lack of training in the co-scholastics assessment for the teachers, problems in the use of grading system, and highlighted the use of activity based teaching learning process based on the students and teacher responses and the classroom observation evidence was not used to cross validate it. While highlighted the lack of teachers manual available for the teachers to refer. The study highlighted the remedial being conducted in some schools but did not make it evident how it was incorporated into the busy school schedule. The study highlighted that the feedback was given to the students but what kind of feedback was given to slow learners was not evident. The major gap was the evidences not been collected from the parents; lack of evidence from documents like question papers and lesson plans to find out the actual opportunities given to the students for cognitive development, the description of teaching learning process and methods used therein, different type of opportunities given to the students for cognitive, psychomotor and affective development. Moreover the study was conducted in a state board school which had adopted CCE in 2011 and had tried to adopt the pattern of CBSE in making State Curriculum Framework, so the investigator was keen to find out if the similar condition existed in the CBSE schools also which had implemented CCE in 2009. Moreover finding out the impact of CCE on secondary school students was the aim of this study since they were in a crucial period of their life with all adolescence related conflicts.

Reviewing the methodology of the 39 research studies it was seen that 36 studies were of survey type studies including those which were done to find the awareness /opinion/perception/attitude about CCE. The 32 studies used the random sampling technique and the remaining 3 used the purposive sampling technique. And the surveys used different tools like questionnaires, attitude scale, opinionnaire and perception scale. Only one study used the observation technique to collect data along with questionnaires, while all other used only the tools mentioned above. There was also one study which used only document analysis of the CCE manual made for the state board schools in different parts of India like Kerala in South India, Orissa in east India, Assam in North East India and Gujarat in West India. Out of the 38 studies only 3 studies were experimental type of study done to see the effect of ICT integration in implementation and assessment of CCE, use of 7E constructivist model

to teach social science in secondary classes and to see the effect of interval schedule feedback on the students of secondary classes. However in all the three studies, the program implemented was effective. With respect to the methodology for the present study by drawing insight from the reviewed studies, the investigator used the questionnaire for teachers and principal, interview for the parents and students and also implemented the tools for finding out the improvement in life skills, attitudes and values of the students of class IX along with classroom observations and document analysis of rubrics, lesson plans and question papers of formative tests.

2.5. Key implications that Emerged from the Reviewed studies

With the above reviews from the research studies the investigator observed that the cognitive development have been described in form of type of test conducted, achievement of the students and the other activities conducted for cognitive development. But none of the studies focused on whether questions related to various levels of cognitive development have been asked by the teachers in the pen paper test, especially for the formative assessments. The findings of the studies show the lack of resources to provide psychomotor activities to the students in some places and various co-curricular activities conducted for psychomotor development in other places, but the actual criteria for evaluation of the psychomotor skills was lacking in the researches. The studies on the evaluation of the affective development and evaluation under CCE shows that the emotional, social and life skills are evaluated but the teachers are unaware about the sub-skills involved in under each of them and daily observations are also not done which implies that there would be difference in the understanding of affective skills in the teachers. Hence it was important to find out how the teachers have understood about the affective skills and how they were evaluating it. Few studies related to diagnostic and remedial practices show that providing remedial classes after diagnosis of the learning difficulties have improved the performance of the students, but none of the studies ensured the regularity of the practice in different subjects of the school, the awareness among the teachers for the importance of these practices and the allotment of time in the school time table for them. The studies related to teaching learning process revealed that training improved the teachers abilities to evaluate the students in both scholastic and co-scholastic areas especially the formative assessments, but the findings do not reveal what type of training was given to the teachers. However there were few studies where the

classroom teaching learning process was students centered as suggested by CCE guidelines and there were few studies which revealed that the teachers used the traditions method of syllabus completion due to lack of time as the formatives have to be conducted. As a result the investigator feels it was significant to find out if the learner centered approaches have been used in the classrooms for syllabus completion along with the formative assessments. It was also important to see the type of formative assessments conducted, whether appropriate time was given for completions of formative activities and regularity of feedback given to the students for improvement based on formative assessment. It was also needed to see the environment of teaching learning in the classrooms. The studies related to formative and summative assessment show that few teachers knew about the tools and techniques to be used for formative assessment. Many of them hardly knew about the actual meaning and aim of formative assessment. Thus, it was important to find out the kind of formative assessments conducted and the teachers' planning and understanding about them in the CBSE schools, as CBSE schools were the pioneers in introduction of CCE. Evaluation has a lot of impact on the students, teachers and parents which can be counted as one of the aspect to see the social utility of this evaluation scheme. In the reviewed studies some studies showed that the students were stressed due to formative activities like project making, presentations, assignments etc. while some studies showed that students liked the formative assessments since they got feedback and were able to score better. Moreover in some places the parents lacked proper understanding about CCE and the teachers were also stressed due to the continuous evaluation to be done under CCE. While teachers of many schools were not at all stressed for the continuous evaluation. No study found the aspects which made the teachers stress free in some schools though they had to continuously evaluate the students. So it was important to find out the procedures of planning and implementation in such school. Moreover there will be a reduction in the stress level of the parents if feedback about the students' progress was given to them continuously, so there was a need to find whether it was done or if done what are the modes of sending the feedback. If CCE has to be a tool of social utility it should also equip the adolescent to take proper decisions when in the real world, to interact with their peers, society and community, to cope with the changes in life and flexibility to adopt a rapidly changing environment (CBSE Teacher's manual,2011). For understanding this it was imperative to take the review from the teachers and parents

about the way in which they interact with their peers and community members. To acquaint them with proper coping mechanisms and be flexible in the changing environment the school has to organize programs or have to assign them tasks which would help them interact with peers and community members. The above key points were not comprehensively studied in any of the surveys reviewed by the investigator, thus the researcher intends to find the presence of such activities in the planning and implementation of the CBSE school curriculum.