In India, the educational system has exhibited a conflict situation with reform attempts at modernisation as well as with conscious efforts to retain the essential features of her ancient heritage. Imposition of an alien system of education on the Indian people during British period yielded inconsistencies and contradictions as witnessed in the process of balancing these forces working in diverse directions. In such a situation a need for reforms in education and the society was always felt and efforts were made to introduce them from time to time. From time to time the Government of India has set up Commissions which have gone into the various aspects of education at different levels and have provided valuable recommendations and suggestions in respect of reforms, re-adjustments and development. These recommendations have further been considered by the experts and the States requested to implement the recommendations of the expert bodies. During the pre-independence period, education was never given its due. An important aspect of educational development in India during the past few decades, therefore has
been the continuous and sustained effort to evolve the national system of education. The setting up of the National Council of Educational Research and Training by the government of India in 1901 marked a significant event in the effort to re-structure education in the country and to give it an indigenous identity, reflecting the ethos and concerns of Indian society. Over the years N C E R T has succeeded in carving out a place for itself as a highly professional body whose advice and expertise are sought both by the States and the Centre alike.

The reforms, re-adjustment, re-orientation and development programmes on education are always made on past experiences and projection into the future. All education springs from some image of the future. So, the changes made may become irrelevant to the needs of a society if based on inaccurate image. " The education is expected to influence and be influenced by the rapid scientific, technological and other advances which are taking place all over the world and unless it equips itself to meet the challenges of the future, it will remain a passive instrument of the status quo and fail to meet the aspirations of the people. Viewed on this context, education has to be forward looking. All stages of education, whether primary, secondary or tertiary have to be a constant state
of review and change, lest they are not able to keep pace with the rapid changes both within and outside the educational system." 80

Reforms in the Structure:

Prior to introduction of H.S. education in our country, this stage of education was existed as Intermediate education as a part of collegiate education only under the direct control of Universities. The importance of this terminal stage of education and an idea of re-organisation of this stage to be a part of secondary education by upgrading was first developed by the Calcutta University Commission, also known as the Sadler Commission (1917-19). Although appointed to suggest reforms in higher education, the Calcutta University Commission made radical recommendations for the re-organisation of secondary education. It had noticed by the Commission that most of the high schools were not only underequipped and manned by underpaid and untrained staff, but were also unduly dominated by ill-designed examinations that excluded many subjects and lines of study, especially those having a vocational bearing.

Moreover, owing to existing division of authority between the University and the Department of public instruction, there was no effective machinery for the supervision and guidance of school instruction. Along with other recommendations, the Commission recommended certain changes in the system of existing Intermediate education by creation of new type of institutions to be known as "Intermediate Colleges." The Commission also recommended for creation of a Board of Secondary and Intermediate Education with majority of non-official members for academic control of Secondary and Intermediate education transferring the control from the University.

The Surgent Report, 1944 recommended that the first year of Intermediate class should be transferred to high school and second year to degree classes. The report also recommended for making provision for University education for selected students after completion of their Intermediate course in the existing institutions.

The Secondary Education Commission (1952-53) recommended some significant reforms in the system of secondary education with the object of making the secondary education self-contained and complete stage upto the age of 17 years. As per the Commission's recommendations, the content of secondary education should be enriched by adding one more class to the high school and making it
higher secondary course of 11 years duration and in some selected H.S. schools a diversified system of education in which students could offer in addition to a common core of studies, a group of three subjects should be provided. The group of subjects are to be selected from any one of seven groups namely Humanities, Science, Technology, Commerce, Agriculture, Fine Arts and Home Science.

The Education Commission (1964-66) had suggested a uniform pattern of 15 years duration leading to the first degree (10 years of high school and 2 years of H.S. education + 3 years of the first degree course by changing the pattern of 11 year H.S. course to 12 year H.S. course). The NPE had also recommended in 1968, a structural change in the formal secondary education in the light of the recommendation of the Education Commission by adopting the 10 + 2 + 3 structure. Assam has adopted this structure of education. The Education Commission proposed for modification of the existing Pre-University or Pre-Degree course attached to Universities from one year to two years duration of H.S. course and to transfer this course from colleges to secondary schools. Lastly the NPE (1986) has introduced the National System of Education for the country with a common educational structure. The 10 + 2 + 3 structure of education has been accepted as a common structure for the
country.

The government of Assam had convened meetings from time to time to discuss how the structural policy on education can be implemented in Assam. In a meeting held by the Minister of Education with the Vice-Chancellors of Gauhati and Dibrugarh University and others on 31-10-68, it was agreed with 12 years of school education upto the H.S. stage should be followed by the State by making internal adjustment in school courses so as to make it conform ultimately to the national pattern. Gauhati and Dibrugarh University decided to introduce the 2 years Pre-University/ Pre-Degree course with effect from 1973 to be followed by a 2 years degree course from 1974.

The pattern of education was again discussed in a meeting of the officials and non-officials on 9-5-69 at Shillong. It was decided to follow the new structure in accordance with the national policy from 1971. However the new educational structure could not be implemented from 1971 due to certain difficulties.

On June, 1971, a Conference was held at Shillong to discuss the educational problems of Assam where eminent educationists, officials and non-officials took part and recommended the following structure:
Classes I to IV : Junior Primary | Elementary of
Classes IV to VII : Senior Primary | 7 years duration
Classes VIII to X : High School (Secondary of 3 years duration
Classes XI and XII : Higher Secondary Course of two years duration
Followed by Degree Course of 3-years duration.

The matter was again discussed in a meeting of educationists on 1-6-72 under the Chairmanship of the Minister of Education, Assam. The meeting recommended adoption of the 10-year school course followed by a 2-years course of H.S. education and 3-years degree course. It was also agreed to transfer Pre-University course phasewise to schools. This meeting further recommended that the revised pattern, 10 + 2 years school course should be started with effect from the school session of 1975. The government of Assam allowed the Pre-University course in colleges and H.S. course in the schools concurrently with identical syllabuses.

Curriculum Re-Construction:

The first major attempt in Curriculum Re-construction in India was made in 1937 when Gandhiji propounded the idea of basic education and Dr Zakir Hussain Committee elaborated the scheme of studies of basic
education. However much work in this direction could not be done as India was under the British Rule. Immediately after independence a University Education Commission was set up under the Chairmanship of Dr Radhakrishnan. The Commission recommended the adoption of three years degree course and suitable curriculum for this stage. The third step in curriculum re-construction in India was taken with the appointment of the Secondary Education Commission (1952-53). The Commission took note of the democratic needs of free India and accordingly made recommendations for bringing about reforms in the existing curriculum at the school stage. In order to make effective with re-adjustment at any given point of time the curriculum of the nation's schools needs to be re-examined at suitable intervals. Such an exercise is healthy and ensures for the curriculum qualities of dynamism and vitality. Ahalya and Ghosh (1973)\textsuperscript{81} elaborated four major factors affecting curriculum decisions. These are:

(1) There is in the country today at least among the enlightened sector, a growing awareness of the need for building up a national system of education, one that is

broadly distinguishable as Indian because of certain intrinsic features discernible in its fabric. More geographical allegiance hardly makes for a national system. Every national system of education presupposes the peculiar responsibility of the particular State towards the education of its children. But, the feature that sustain it and lends a unique character to it, is the existence of a body of active beliefs and convictions held by the commonalty of the people at a particular time. To illustrate this point, the 'national' character of our secondary education would depend upon our finding an agreed point of view with reference for instance, to a basic question such as this.

(2) There id in the country a growing awareness of the demands made upon education by what is aptly termed the revolution of rising expectations. A large proportion of men and women than ever before are required to engage in national work calling for a relatively high level of intellectual competence and manual dexterity. If the targets of the national plans are to become attainable, both agriculture and industry must take leaps which might appear formidable but are inevitable. Educational strategies for developing nations must take cognizance of this need. When decisions with regard to what ought to be the components of a curriculum of a stage of education are taken, it would be unrealistic to ignore the manpower
needs of the nation. One might cite the examples of Germany and Japan, the USSR and Denmark as countries that made education the main instrument of economic development.

(3) Another factor that makes a re-examination of the curriculum imperative is the sheer abundance of knowledge that is now available on the nature of knowledge itself and on ways of knowing. The astounding expansion of knowledge in every field forces the educationist to accept the position that the school's function is obviously not to require the pupils to accumulate 'encyclopaedic' information but to serve as a base for further learning. Recent findings in the processes of human learning and the consequent refinement that suggest themselves in the techniques of instruction are significant. This has relevance both for the selection and organisation of what shall be taught and for teaching methods. School curricula must develop in themselves a certain measure of resilience to changes and new movements in national life.

(4) The fourth pressure that calls for a close scrutiny of the secondary curriculum arises from the growing concern that is now evident especially in some advanced democracies of the world with regard to ensuring the full development of the ablest pupils at school. In the ultimate analysis, the nation must turn to the best products
of its secondary and higher education for developing that illite of pooled ability in whose hands may rest the future leadership. Nor is this any negation of democratic principles. For equality of opportunity which is a basic democratic principle, does not mean in the words of Lord Bobbins, "equal measurement of unequal opportunities." The Indian curriculum must weave into its texture a measure of flexibility needed for such growth.

The Secondary Education Commission (1952-53) realised that there was a great need for providing technical education in the country and therefore it recommended multipurpose schools. The Commission suggested far-reaching changes in the existing curriculum. A core curriculum at the H.S. stage was recommended. The recommendations of the Commission however remained unimplemented.

Next to the Secondary Education Commission, the Kothari Commission or Education Commission (1964-66) reviewed the entire education structure of the country. The Education Commission made a detailed survey of the curriculum followed in the country. It came to the conclusion that the curriculum was inadequate, out-moded and not properly designed to the needs of the modern times. The Commission noticed that there was a widespread dissatisfaction with the curriculum due to tremendous
explosion of knowledge in recent years. It was realised that there was a good deal of "Useless Educational Lumber" in the school courses. The Commission recommended that there was an urgent need to raise, upgrade and improve the school curriculum with a view to eliminate the large amount of dead wood which now encumber them, to increase their knowledge, content and to provide adequately for the development of needed skills and the inculcation of right interests, attitudes and values. In this context the Commission suggested to adopt two major policies.  

(1) At present a common curriculum is adopted for all the schools in a State. The rigid arrangement proves detrimental to progress, because the prescribed curriculum is generally beyond the competence of weaker institutions while it fails to provide adequate challenges to the better ones. What is needed is an elastic system under which curricula would be realistically related to the quality of leaders and facilities available. This implies the simultaneous prescription of more than one curriculum and the adoption of an elastic administrative system which will encourage schools to introduce innovations.

(2) Similarly the present practice of introducing improved or advanced curricula simultaneously in all institutions will have to be abandoned because it does not make it possible to prepare adequately by training teachers and providing facilities. It should be open to individual schools to adopt the improved curricula, either as a whole or even in one or more subjects, depending upon the teachers and facilities available; and a carefully planned programme should be drawn up for enabling all schools to do so within a few years. In the traditional period, examination will have to be conducted in both the curricula.

As per recommendation of the Secondary Education Commission, specialization was to start in class IX of the H.S. school. The Kothari Commission thought that a common course of general education is desirable to provide a common course of general education for all students, till they complete the first ten years of school and to begin specialization only in the higher secondary stage. The broad arrangement of the H.S. (classes XI and XII) curriculum under this proposal is as follows:

(i) Any two languages including any modern Indian language, any modern foreign language and any classical language.
(ii) Any three subjects from the following:

(a) An additional language                (g) Sociology
(b) History                               (h) Art
(c) Geography                             (i) Physics
(d) Economics                             (j) Chemistry
(e) Logic                                 (k) Mathematics
(f) Psychology                            (l) Biology

(iii) Work Experience and Social Service

(iv) Physical Education

(v) Art or Craft

(vi) Education in moral and spiritual values

In his study on rigidly structured curricula, Saptrajaonov (1991) accounted two weak points and suggested their solutions. The rigidly structured curricula have many inherent weaknesses in addition to their positive aspects. First of all, it is difficult to design fixed lines of study corresponding to all possible future jobs or groups of related jobs. This would be a difficult task even if only the requirements of the presently known jobs were taken into account and becomes much more difficult if one tries to foresee the necessity of changing

the job, some time in the future, the direction of 
change being often unknown and inconceivable. As a 
consequence the number of offered lines of study is 
either kept down or alternatively the number of lines 
mushroom, without being able nonetheless to cover the 
whole spectrum of foreseen and unforeseen future needs.

Another weakpoint of rigidly structured curricula is that they are difficult to change since the number of hours a student can take is limited every change requires re-shuffling the whole curriculum and every addition to it requires cuts in some already established course.

The solution of these problems lies as is widely known, designing the studies in a way which enables the student to acquire first the basic knowledge for a given field of work and second the ability to add to this knowledge later on as the needs arise. Curriculum corresponding to such a design of studies must be flexible.

The government of India considered the recommendations of the Education Commission and adopted the NPE in 1968 which identified National goals of education. The policy resolution stated that the educational system must produce young men and women of character and ability committed to national service and development. The following five goals were clearly mentioned:
1. Relating Education to the needs of the society
2. Promotion of National Integration
3. Equalisation of educational opportunity
4. Linking education with productivity and national development.
5. Acceleration of social transformation.

It was thought that a new programme of curriculum development should be undertaken by the adoption of broadly uniform pattern popularly known as \(10 + 2 + 3\) pattern throughout the country. This pattern meant 10 years of general education up to class X, followed by diversified H.S. education (classes XI and XII) and 2 or 3 years of University education (2 years pass course and 3 years honours course).

For the curriculum to be more useful for preparing student for H.S. education and to be productive of success at the H.S. stage. It must be broadened at the delta level. Till such time as this is done the use of psychological tests appears necessary for selecting and allocating students for different streams of H.S. education, so that all who are admitted to a stream fully utilise the educational resources, this minimizing wastage. The student will also be saved from frustration resulting from failure due to selection of courses not suited to
that age, aptitude and achievement. 84

Tiwari (1992)85 commented that, "The inadequacy and irrelevance of our existing educational system with the life of human beings has brought about an era of disillusionment in the youth. The children are educated to store into memory the symbols, concepts, ideas, theories which have been developed and organised by society and thus give only a fragmentary view of life which brings about more of conflict and confusion in their minds."

The enrichment and diversification of the secondary school curriculum recommended by the Secondary Education Commission remained largely a paper reform. The offshoot of this recommendation was the creation of multipurpose schools. A multipurpose school seek to provide various types of courses for students with diverse aims, interest and ability. It endeavours to provide for each individual pupil suitable opportunities to use and develop natural aptitude and inclination in the special course of studies chosen by him. Considering the reasons of failure


of this scheme, the Education Commission (1964-66) recommended some changes in the structure and content. The introduction of the new structure of education 10+2 envisaged the vocationalization of H.S. education at an extensive scale. Accordingly N C E R T prepared a document and spelled out details of implementing the scheme, with the formation of a curriculum Committee on H.S. education and its Vocationalization in 1976. The report of the Committee is known as "Learning to do."

The Committee reviewed the curriculum of the +2 stage comprising two broad learning components namely General education spectrum and the Vocationalized spectrum. It is recommended that the pattern of the course and the distribution of time for teaching the General education spectrum should be:

<table>
<thead>
<tr>
<th>Course</th>
<th>Time Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Language (s)</td>
<td>15 percent</td>
</tr>
<tr>
<td>2. Socially Useful Productive Work</td>
<td>15 percent</td>
</tr>
<tr>
<td>3. Electives</td>
<td>70 percent</td>
</tr>
</tbody>
</table>

It is recognised that this general scheme must be applied with a certain amount of flexibility, allowing

individual States and territories and even individual schools to adopt the courses and the distribution of time to local conditions and pedagogic perceptions.

Language(s):

In the general pattern, put forward the implication of the distribution of time for language learning is that only one language can be learn. The language will be the one of students choice depending on the offerings available at the school and for the vast majority of the H.S. schools run or supported by the States or territories it is likely to be the regional language. The need for learning a second, preferably an international language can be met by resorting to the study of an elective subject.

Socially Useful Productive Work:

The same time distribution vis. 15 per cent of the working week is applied to learning through Socially Useful Productive Work. The Socially Useful Productive Work (SWPW) is a practical nature and undertaken under appropriate supervision and planning, will help to achieve inter alia, the following objectives:

(a) Inculcation of positive attitudes to work in the students.

(b) Identifying themselves with the community by rendering social and community service.
(c) Development of habit of co-operative work.
(d) Making the community conscious of scientific advancements and help it develop a scientific outlook.
(e) Learning to apply one's classroom and vocationalized knowledge to solve day to day problems of the community.
(f) Participation in nation building activities and
(g) Realisation of the goals of the State and national development.

To develop the proper attitude towards rural development and community service, the pupils at the H.S. educational level must be provided motivation and training opportunities. The programme selected must be suitable to the age level and competencies of the pupils and the needs of the community. The SUFW should as far as possible be allied to the electives chosen by the students, allowing also for any other kind of work depending upon the facilities available in the neighbourhood. The students who are studying Home Science may for instance, work with the community for improvement of the nutritional status of the population, utilizing the local products for developing cheap and wholesome diets. The students of chemistry may undertake useful work of soil fertilizers and water, removal of pollution, utilization of wastes etc.
Electives:

The third component of the General Education Spectrum is the electives. With the 70% of the time allocation to it, each student will be able to offer a minimum of three electives. There should also be some flexibility to students wishing to offer four electives, the fourth one being considered an addition to meet regional requirements, language needs or the requirements of University education. A further element of flexibility is in the choice of electives by the student. In the interest of making a beginning in inter and multi-disciplinary which real life demands and in enabling the students to choose different combinations of subjects, the electives are set forth in a common list without the traditional classification into the Science group, Arts group or Commerce group. The list of subjects for the general education course comprises the following subjects:

1. Language(s) other than the one offered as a compulsory language.
2. Mathematics
3. Economics
4. Chemistry
5. Political Science
6. Geography
7. Biology
8. Sociology
9. Philosophy
10. History
11. Fine Arts
12. Physical Education
13. Commerce and Accountancy
14. Psychology
15. Physics
While minimum of 3 electives is considered essential for every student, the candidate may also offer, if they so wish, an additional subject from the given list.

**Vocational Spectrum:**

The Vocational Spectrum of the H.S. school is learning of a skill or a range of skills through study of technologies, related sciences and farm or other technical work. It is recommended by the Curriculum Committee (1976) that the pattern of the course and the distribution of time for the vocationalized spectrum be:

<table>
<thead>
<tr>
<th>Course</th>
<th>Time allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Language(s)</td>
<td>15 per cent</td>
</tr>
<tr>
<td>2. General Foundation Course</td>
<td>15 per cent</td>
</tr>
<tr>
<td>3. Elective subjects</td>
<td>70 per cent</td>
</tr>
</tbody>
</table>

Language(s) — Within the allocation of 15% of the hours of instruction per week, learning of only one language will be possible depending on the facilities available in each school for teaching the language. Some thought should be given with regard to the content of the language course in relation to the content of the vocationalized courses chosen or offered.

General Foundation Course — In order to provide more rounded course to those who choose vocationalized electives, a general foundation course which provides a broad background area of knowledge of life and history:
is recommended. Such a course will equip the student with the minimum knowledge which will broaden his outlook and provide him with essential information about various inter-related matters, which are helpful for successfully pursuing any work on his own. Vocationalized knowledge and the development of related skills are not enough to enable a person to enter life and set up his own establishment however small it may be. The general foundation courses will fill in this gap giving general information on the history of science and technology on the development of Indian culture or on the elements which are common to different vocational elective subjects. With regard to the latter for example, the courses could include the units on marketing of produce, entrepreneurship, co-operatives, credit facilities, management of small farms, small cottage industries and small establishments, adaptability to changing situations and general exposure to world trends. Special emphasis should be laid in the general foundation courses with regard to the requirements for rural vocations.

The objectives of the course are to enable the students to -

(a) Become aware of the need for rural development and self employment.
(b) Understand the place of agriculture in the national economy.
(c) Develop skills and managerial abilities to run small scale and cottage industries and
(d) Gain insight into the problems of unemployment, under-employment, under-development and economic backwardness of India.

The course content will comprise Part 'A' and Part 'B'.

Part A:

(1) Gandhian concept of education.
(2) Agriculture in the National Economy.
(3) Rural Development
(4) Problems of Urban Slums.
(5) Health, Hygiene and Sanitation.

Part B:

To choose any one as appropriate -

(1) Small-Scale and Cottage Industries
(2) Entrepreneurship
(3) Co-operatives and Credit Facilities
(4) Marketing
(5) Sales Promotion
(6) Unemployment, Under-employment and Man-Power Utilization in India.
(7) Human Relations
(8) General Exposure to World Trends and changes
Vocational Electives:

70 per cent of the weekly hours of instruction is allocated to the teaching of vocational elective subjects — about 50 per cent of these hours should be spent on practical work, with a certain margin of flexibility varying from vocation to vocation. Vocational education at this level should as far as possible, not duplicate what the ITIs or Technical Higher Secondary Schools are at present offering. As the main thrust of the proposed vocationalization is on rural agricultural and related vocations, the question of spending a minimum of 2000 hours as is done in case of technical vocations at present should not normally arise. It should suffice if the desired competency can be acquired in the given time in the particular vocation. The course in vocational areas should be drawn up in such a way that the employability of the students will be enhanced. The duration of a vocational course should normally be two years in so far as the instruction in the schools in the formal system is concerned. The courses requiring lesser duration than two years may be pursued through non-formal systems, such as part-time and evening courses, correspondence courses etc. and the institutions should be free to offer such courses through non-formal channels.
Basic objective of the scheme of vocationalization of education essentially envisages development of vocational skills in the students, thereby making them more gainfully employable either through self or wage-employment in the vocation chosen by them. This objective is evidently reflected in the curricular design recommended for vocational stream in various documents. For example, the document on vocationalization of education prepared by NCERT stipulates 50% of the total instructional time for the study and practice of vocational objectives which has been increased to 70% by the report of the Review Committee (1978) and 80% by National Seminar (1981) on vocationalization of education. This much time allocation for vocational electives is considered quite adequate for the development of necessary skills in the students.

For the success of any educational programme, instructional and textual materials are in no way less important than the other basic pre-requisites like infrastructural facilities in the institution, competent teachers, co-operation of the society etc. Nevertheless, vocational courses in most of the States were started under conditions of near total absence of any instructional material specially designed for the vocational students. Under such circumstances the NCERT resolved to contribute
its own mite to fill the void in respect of instructional material for the vocational students. The working group (1982) chalked out guidelines for the development of instructional material after taking through cognizance of the scheme of vocationalization of education. Those guidelines found immediate application in two NCERT workshops at Udaipur and Mysore where five instructional manuals - 3 in agriculture, 2 in commerce were developed. The NCERT continues to develop similar instructional materials for other vocational courses as well through a series of workshops. 87

One of the strongest thrust of the NCERT is in the area of curriculum development during past decades since its creation in 1961. "The curriculum plays a crucial role in any educational system and it is through timely reforms in curriculum that the goals of education can be achieved. This is particularly so in our country where several radical changes have taken place in all aspects of social life including education." 88

In an investigation on Curriculum Survey and Documentation Research, Shah (1977) suggested that "more dynamic and stimulative methods have to be developed for presenting essential knowledge. It is here that educational research in India has to play an important role. More attention has to be paid on knowledge subjects like mathematics, science, history, geography etc. Studies of teaching methods have hardly made any significant impact. The scope of their sampling has to be considerably enlarged to ensure the validity of their generalisation."

Curriculum development and renewal is a continuous process. It is not a linear but a cyclic process in which evaluation and impact studies, oral feedback and findings of new researches are constantly referred to in order to refine curriculum and curriculum materials.

In advanced countries of the west many educational organisations are involved in curriculum development. In our country, however curriculum reforms have made so far on experience-based, it remains subject-centred and examination based.

Bansal (1979) have observed in a comparative study of the abilities of students of modern and traditional mathematics, that (i) Students of modern mathematics possessed more critical thinking than those studying traditional mathematics curriculum. They possessed to a greater extent the reasoning power of if-then type (ii) The modern mathematics students had more developed ability of judging whether certain statements contradicted each other and utilized explanatory hypotheses more often than the students of traditional mathematics (iii) The factor analysis did yield two identical factors termed as hypotheses verification and divergent thinking for the students of modern mathematics as well as for the students of traditional mathematics (iv) Results obtained orthogonal relation were (a) Critical thinking ability as well as other variables of critical thinking, namely number series, number classification, inference and symbol manipulation had moderate loadings in the factor of hypothesis verification for both the samples. The remaining variable of critical thinking on the factor of hypothesis verification for the students of modern mathematics.

mathematics only and (b) Creative thinking ability as well as other variables of creative thinking, namely, first and last letters utility test, number combinations and make-up-problems had moderate loading on divergent thinking for both the samples.

The NPE (1986) envisages a national curriculum framework. The National Curricular Framework envisages a common scheme of studies indicating different areas of study and weightages in terms of instructional time. It also envisages minimum levels of learning for each stage of school education and for each curricular area, indicated in terms of specific learning outcome common for all learners, irrespective of the modes of learning. This would ensure inter-State and inter-regional comparability of educational standards and also international comparability of the national system of education. The curriculum would also allow for flexibility in terms of selection of content and designing learning experiences keeping in view the local requirements ensuring greater initiatives on the part of the teachers, the social and local authorities. The curriculum framework besides defining the major educational objectives and common scheme of studies also highlights certain core elements which are essential for nurturing national identity. The professionalization of curriculum activities gradually brought into focus the need to link curriculum development and
preparation of instructional materials with the methodology of teaching and system of evaluation.

In the process of curriculum development in India co-curricular activities are considered to be the intrinsic part of the educational endeavour in a school. Till lately those were called the extra-curricular activities. But, now these have been recognised as a part of regular curriculum for the complete education of the pupil and hence those are now co-curricular. Curricular and co-curricular activities are now considered complementary to each other both deserving equal weight and emphasis in the total programme of the school. The Secondary Education Commission considered the co-curricular activities as an integral part of education. Out of several types of co-curricular activities, activities for physical development and activities for library and academic development are considered most important. Activities for physical development are:

1. Mass parade and mass drill
2. Yoga
3. Indoor games
4. Athletics
5. Outdoor games
6. Wrestling
7. Bicycling
8. Gardening
9. Swimming and Boating
10. N.C.C. and A.C.C.

Activities for Literary and Academic development are:

1. Symposium
2. Debate and Discussion
3. Declamation contest
4. Organising Extension Lectures
5. Story writing competition
6. Essay Writing competition
7. Dramatics
Other co-curricular activities are :

(a) Activities for Aesthetic and cultural development (b) Activities for craft development (c) Excursion activities (d) Activities for Civic Development (e) Social Welfare Activities (f) Multipurpose Activities.

The co-curricular activities have various advantages. These can be accounted in values of the following:

1) Physical (2) Psychological (3) Ethical (4) Academic (5) Civic (6) Cultural (7) Aesthetic (8) Social (9) Recreational (10) Disciplinary

Tandon (1960) studied the hobbies and co-curricular activities of pupils in the Madhya Pradesh H.S. schools in relation to educational and vocational guidance. From the analysis of the replies to a questionnaire he had issued, he concluded that collection of stamps, coins, shells and feathers of birds has come


bearing on the choice of school subjects. For example, he said pupils whose hobbies included collection of tools and instruments and using them in leisure hours offered science as an elective subject. He suggested that leisure time activities were reflected also on the choice of vocation, evidence for which, however could be procured only through follow-up studies.

Co-curricular activities are increasingly being accepted as an integral part of the curriculum. Most school systems have strengthened facilities for co-curricular activities and have increased their number and variety. Central grants for science clubs, physical education, scouting and guiding, K.C.S. and Youth hostels have enriched the programmes. In large schools the total students population is divided into different houses. Competitions are held between the houses in such activities as music, dance, elocution and sports. The main emphasis is on each individual student being involved in some activities for which he has an aptitude so that he may develop skills for leisure time pursuits. 93

The status of co-curricular activities of the H.S. schools of Assam is poor enough to contribute so

effectively in improvement of the quality education. The poor status of co-curricular activities may be due to (1) lack of equipments (2) lack of effective programme and planning (3) financial constraints etc. In the new Education Policy (1986), importance of sports and games has been recognised, because they help in developing health of children. With this aim in view, opening of sports centres has been recommended. It has also been suggested that some short curriculum for games and sports should also be devised.

Examination Reform:

The problem of examination is as acute and complex as that of curriculum or method of teaching. Passing the examination at all stages of our education has become the chief goal to be attained by students. The ultimate aim of study, irrespective of the course is to get through the examination and obtain a paper certificate or a degree. He merely aims at acquiring substantial knowledge. Reform in examination from time to time was needed to serve several useful purposes. Such reform in examinations becomes a continuous process in changing society. Much importance had been intensified on examination reform in India during post independence period and the research on its system has been continued in sustained manner. The Commissions, Committees, Meetings
Conferences and the agencies suggested and recommended the reforms from time to time. The education system both at the national as well as State level has been changing as per recommendations. An overview on the historical development of education in India at different stages shows the important changes made in the system of examinations. Many new measures were initiated for re-organising education at all levels and linking it to national needs and aspirations.

In the Primary and Secondary Education Re-Organisation Committee 94, in its report which came out in 1948, recommended among other things, the setting up of a Bureau of Examination, the substitute of the prevailing system of examination with one that may yield more valid and reliable results, incorporation of oral tests in the scheme of examinations and the introduction of consultative records.

The United Provinces also appointed later the Secondary Education Re-Organisation Committee (1953) 95. The Committee suggested that:


1. The external examination be replaced by an assessment made by the teacher himself.  
2. The final assessment be based on several assessments made during the course of the school year.  
3. The final assessment (i.e. marks) given by the teacher in a subject in one school be satisfactorily co-ordinated with the marks given by the teachers in other schools in the same subject.  

The report of the Secondary Education Commission (1952-53) was the next landmark in the history of education of Independent India. It made far-reaching recommendations on different aspects of educational reconstruction and reform including some to overcome the defects of the prevailing examination system. The recommendations relating to examination reform are given below:

1. The number of external examinations should be reduced and the element of subjectivity in the essay type tests should be minimized by introducing objective tests and also by changing the type of questions.  
2. In order to find out the pupil’s all-round progress and to determine his future, a proper system of school records should be maintained for every pupil indicating the work done by him from time to time and his attainments in the different spheres.
3. In the final assessment of the pupil's due credit should be given to the internal tests and the school records of the pupils.

4. The system of symbolic rather than numerical marking should be adopted for evaluating and grading the work of the pupils in external and internal examinations and in maintaining the school records.

5. There should be only one public examination of the completion of the secondary school course.

6. The certificate awarded should contain besides the results of the school tests, in subjects not included in the public examination as well as the gist of the school records.

7. The system of compartmental examinations should be introduced in the final public examination.

After accepting the recommendations by the Union Ministry of Education, the government of India established the All India Council for Secondary Education (AICSE) in 1956, for implementation of the same. The Council however could not immediately take up the implementation of all the recommendations simultaneously. It therefore had to decide on priorities. With a view to collecting opinions on this, a questionnaire was circulated to educationists and educational agencies. The items that occupied the first two priorities in the analysis of responses were:
1. In-service Teacher Education and
2. Examination Reform

Consequently the AICSE launched on the two project of extension services departments and examination reform. This marked the beginning of the movement of education reform in India. The first step undertaken by the AICSE was the organisation of the Bhopal Seminar on Examination Reform in 1956. The Seminar recommended the establishment of an expert body to be known as the Central Examination Unit (CEU) for dealing with the problem. The Central Advisory Board of Education in its meeting held in January, 1957 endorsed the recommendation of the Seminar. The next task was the development of a comprehensive plan of action for which the Ministry of Education drew upon the experiences of other countries, besides the expertise available at the national level. It invited Dr B.S. Bloom, then Chief Examinar of the University of Chicago in 1957, to advise on examinations. In the course of his stay in India, Dr Bloom discussed with educationists, educational administrators in different parts of the country and worked with about 300 school and University teachers in seven workshops. He then assisted the Ministry of Education in developing a plan of action.

In April, 1959, the AICSE was made a part of the Ministry of Education and renamed as the Directorate of Extension Programmes for Secondary Education (DEPSE).
One significant development during this period was the initiation of the supporting project of State Evaluation Unit, sponsored and financed by the Central Ministry of Education. Again with the establishment of the National Council of Educational Research and Training, in September, 1961, the Ministry of Education decided to transfer several of its academic units to it. The DEPSE was one of these and the CEU as a division of the same shared its fate.

In May, 1966, the CEU was given an independent status under the name "Examination and Evaluation Unit. But, soon after its functioning in August, 1966, the Department of Curriculum, Methods and Textbooks was amalgamated with it. The new Department was named as the Department of Curriculum and Evaluation (DCE).

While reviewing the progress made by the CEU since its establishment, the Kothari Commission (1964-66) has observed as follows:

"During the seven years of its existence, the CEU has made a multipronged attack for the popularisation of the new concept and techniques of evaluation. It has worked with thousands of secondary school teachers in seminars and workshops introduced hundred of training College lecturers to the new techniques, established a very large pool of test items, trained paper setters
attached to different Boards of Secondary Education, published a good deal of literature on evaluation and carried out or sponsored several studies and investigations on various practical problems in examinations. As the work of the unit expanded, the government of India approved of the establishment of Evaluation Units in different States during the third Plan period."

The resolution on the NPE as developed on the basis of the recommendations of the Kothari Commission and the Committee of Members of Parliament have also given an important place to examination reform. The resolution as adopted by the Central Ministry of Education and endorsed by Parliament says:

"A major goal of examination reform should be to improve the reliability and validity of examinations and to make evaluation a continuous process aimed at helping the student to improve his level of achievement rather than certifying the quality of his performance at a given moment of time." 98


(a) External Examination:

Nearly all the Committees and Commissions appointed for the sake of reforming educational system have analysed the defects in examination system and put forth their recommendatory suggestions. The Boards of Secondary Education in States conduct external examinations at the secondary level and indirectly control examination at the entire school stage. Due to variations in the pattern of educational structure in the States, these examinations were held at the completion of ten or eleven or twelve years of schooling. The procedures of external examinations at the secondary level vary considerably from one agency to another. At first they mostly consisted of written examinations. Practical examinations were held only in science subjects and in some skill subjects like fine Arts and Crafts. Considering the serious shortcoming in the examination systems evaluated, the Committees and Commissions have been suggesting reformative measures. Serious shortcomings in the presentation of the syllabus frequently make it difficult to know the precise dimensions of the content of instruction and evaluation. The technical defects of the traditional systems of external examination evaluated by
Dave and Srivastava (1973) are:

1. It overemphasises scholastic aspects of pupil growth at the cost of the non-scholastic ones. And even among the scholastic aspects, memorization holds the forth and other higher abilities like understanding, application of knowledge and skills, slip almost invisibly into the background. As a natural consequence of this situation, the entire endeavour of the schools has been almost exclusively directed towards a very narrow area of scholastic achievement and it is not considered worthwhile to invest any effort inputs towards the development of some very desirable personal and social qualities.

2. The fact that examination situations have undefined dimensions and are short, selected, superficial and limited, they tend to render assessment fractional and frequently unrepresentative of the multi-faced growth of pupils. This leads to undesirable outcomes like irregular study habits, selective study, selective teaching etc.

3. The examination operations are replete with subjectivity and adversely affect the setting of question papers and examining of scripts. This accounts mainly

for the surprise that the examination results bring along, where mis-classification of pupils is an almost accepted phenomenon.

4. The general and vague wording of the instructions to paper setters and examiners defeats their very purpose. In the traditional scheme the 'value points' of the expected answers are seldom given and factors like the number of pages, the neatness, the handwriting and the window-dressing of the answers frequently take the better of the content of the answers and their presentation.

5. Furthermore, the manual compilation of results leaves a big margin for mistakes and consequent mis-classification of pupils. On the other hand, the adoption of arbitrary formulae for moderating examination results make the situation still worse.

6. The tension and anxiety created by examination have also very undesirable influences.

Through external examinations in schools, memorisation is overemphasised, coverage of pupils growth is limited and rigidity of traditions rampant.

(b) Internal Assessment:

The term 'internal assessment' is interpreted in varied ways. Though ideally the term is meant the assessment of students in different aspects by the teacher who himself imparts instruction, but for practical purpose
it is now used to convey evaluation of pupil growth through the institution in which he studies. The Secondary Education Commission, Kothari Commission and various other Education Committees suggested for replacement of the present mode of examination by some more objective tests and the appointment of more internal examiners in place of external ones. In this context the suggestions given by the Acharya Narendra Deo Committee (1953)\textsuperscript{100} are also in favour of internal assessment.

The following suggestions were given by the Committee on the system of examinations:

1. Instead of external examiners, the teachers themselves should test the knowledge of the students.

2. The final judgement about student's ability should be based on other judgements made about them on different times of the year, i.e. monthly, quarterly and half-yearly examinations should be regarded as important as the annual examination. Marks obtained by the students in different examinations of the year should also be added to those obtained in the annual examination.

3. Marks awarded in a particular subject by a particular teacher of an institution should compare well with

those awarded by a teacher of another institution in the same subject.

In a study on Reliability of Examination in India, Harper (1969) commented that: "We can put little or no faith in the marks a student receives in any one paper. Of course, the aggregate total in any of the single papers as some of the sources of unreliability tend to average out. Yet even this is hardly adequate. Every year lakhs of candidates in India are mis-classified in our high school and degree examinations. Thousands who should pass are failed. Over thousands who should fail are given third, second and occasionally even first classes. The fact that failure on a single unreliable paper can mean failure in the whole examination, undercuts even what reliability the aggregate may have. The human misery involved is incalculable. And the irony of it is that it is the students who suffer, when it is the examination system itself which has failed.

Objective examinations have a margin of error only one quarter to one third that of the traditional examination. Mis-classification will still occur no measurement is or even can be perfect. But, the lakhs can be cut to hundreds - the thousands to tens. What possible justification can

there be in this age of science to refuse to make our examinations more scientifically accurate and exact."

Reddy (1977)\textsuperscript{102} suggested that - "Building the necessary infrastructure in the form of supply of sufficient number of prescribed books, reduction of teacher-pupil ratio, adequate training for the teachers in modern methods of evaluation should have been taken care of as the first and foremost step in introducing the system of internal assessment. Without these, it is the old, traditional type of teaching and testing (of course more frequently) minus external paper-setting and evaluation, thereby eliminating objectivity (the most important virtue of the traditional system) and giving scope for subjectivity of the teacher to play its role in assessment.

The major components of the programme of examination reform undertaken by the CEU\textsuperscript{103} are:

(a) Improvement of external examination and
(b) Improvement of internal evaluation in schools.


The techniques used for external examination are written examinations in all subjects and practical examinations in science and other skill subjects. These techniques are also employed for evaluation in schools. In addition, techniques like oral examination, assessment of personal and social qualities and evaluation of aspects like interests, attitudes and special abilities are also a part of internal assessment. In the examination reform programme of the CEU, a large number of elements of reforming written, practical and other techniques of evaluation as applied to both external and internal evaluation are considered.

The elements for improvement of written examinations are:

(a) Improving questions
(b) Improving question papers
(c) Improving scoring records, reporting and use of test results.
(d) Improving the organizational and administrative set up of examination to suit the new programme
(e) Introducing unit tests and diagnostic tests in school evaluation
(f) Suggesting corresponding improvements in curriculum text books, teaching methods etc.
Improvement of practical examination by -
(a) Providing for the testing of a large number and variety of practical skills within a given time.
(b) Providing for the evaluation of both the process and product of performance.
(c) Making scoring more reliable by providing for a well-planned marking scheme.

Improvement of oral examination by -
(a) Developing effective techniques of evaluating oral expression and other related aspects.
(b) Devising techniques of differential diagnosis in oral expression
(c) Developing procedures of reliable scoring.

Introducing other techniques and functions of evaluation by -
(a) Developing a comprehensive scheme of internal evaluation in schools covering academic and non-academic aspects of pupil growth.
(b) Developing appropriate techniques and tools such as observation schedules, rating scales for evaluating interests, attitudes and other personal and social qualities.
(c) Developing appropriate feedback procedures specially for taking care of the non-academic aspects of pupil growth.
Research on examination reform have been undertaking by a large number of research workers both inside and outside India and suggested reform measures in different aspects of examination.

Zacharias (1973) commented that "Although standards are reasonably consistent among teachers, there are exceptions. It is a known fact that pupils have to work very hard to attain the standards set by some teachers, whereas they can reach the goals set by others with a minimum of effort. Similarly some teachers give tests which are regarded as impossible by the pupils whereas the tests of others are classified as a 'snap'. Teachers who fall into these extremes would do well to re-examine their goals, their procedures and their evaluating techniques. In all cases, goals should challenge the pupils, but should be attainable. In the case of teachers who consistently give low grades, the reason may lie either in poor teaching techniques as in tests of unreasonable difficulty. On the other hand a teacher who consistently gives high grades might do well to raise his standards and to refine his tests.

Tikkiwai (1975) concluded in his study on some


105. Tikkiwai, G.D. (1975) : On some aspects of translating marks into grades; Examination Reform Cell, University of Rajasthan.
aspects of translating marks into grades that, grades in a paper should be given on a fixed scale instead on a sliding scale as at present and descriptive question if any should be graded directly.

It is revealed from the study conducted by Misra (1970)\textsuperscript{106} that "The two methods gave quite different results. The second method gave smaller values. Even the rank order of the positions in terms of difficulty was not the same for the two methods. Due to certain advantages, the second method was recommended for the estimate of essay item indices. Supposed parallel items were not equal in difficulty and the provision of choice sometimes penalized bright students and rewarded weak ones. The significant educational implication is that, there is a need for developing a pool of suitable essay items. The method used in the study seems worth trying for the estimate of essay item indices. The evidence of the study is against the provision of choice.

The influence of scaling on examination results was studied by Tluanga and Taylor (1964)\textsuperscript{107}. Their study

\textsuperscript{106} Misra, V.S. (1970): Difficulty of Essay Questions; Examination Research Unit, Gauhati University.

\textsuperscript{107} Tluanga, L.N. and Taylor, L.J. (1964): The influence of Scaling on Examination Results; Examination Research Unit, Gauhati University.
revealed that—(1) The errors which had arisen from variations in the standard of marking were by no means negligible and their removal made a striking difference in the final results of the examination (2) The scaling increased the pass percentage and produced significant changes in the classification of the candidates and the order of merit.

The findings of the study on direct and indirect methods of absolute grading system conducted by Tikkiwai and Tikkiwai (1981) are (1) The examiners consciously or unconsciously uses the instructions while marking the answer books (2) No systematic work seems to have been carried out to determine whether other scale should be used in evaluation by grades. Thus it is necessary to carry out further studies with a view to achieve perfection in evaluating by grading.

The merits and demerits of essay type questions and objective type tests have been investigated by researchers, Education Commissions, Educationists and Committees as a continuous process. "There is always a possibility of error of measurement in every item of

parameter and group which ultimately effects the item parameters. If we calculate the item parameters on a particular sample and then divide that sample into higher ability and lower ability groups and then again calculate the item parameters for both the groups, we see that the item parameters do change. There is a way out to find out solution of this problem if we use a new technique of item analysis called sample-free item analysis. The main aim of this technique is to provide values of item statistics which are stable from one sample of students to another, even though the samples are very different or biased. In this technique, the item parameters remain the same, no matter the item is answered by a group of brilliant students or dull students. If we include this technique in our testing the greater accuracy can be achieved."

Like other States in India, sufficient works on examination reform in Assam have done leading to changes in examination system in different stages. Examination reform in Assam involves three distinct educational stages, namely the University stage, the Secondary stage and the Elementary stage. The State Institute of Education

looks after examination reform at the Elementary stage. The Board of Secondary Education was the examining body at the Secondary and Higher Secondary stage till the creation of the Assam Higher Secondary Education Council and looked after examination reform at the secondary stage covering up to Higher Secondary courses. At the University stage, the matter is attended to by the University itself. Dr H.J. Taylor, Ex-Vice-Chancellor of the Gauhati University introduced statistical reform in evaluating examination results and the practice is followed at the Pre-University and three year degree (pass course) public examination in the G.U.

Roy (1969) reported in a study conducted on Examination Reforms in Assam, that the examination reforms that may be brought about in the examination system may be divided into three broad categories - (1) Reforms which are of administrative in nature (2) Reforms which are linked with technical aspects of examination and (3) Reforms which are by and large of educational nature. To the first belongs to problems that relate to appointment of paper setters and examiners, conditions of passing declaration of results etc. To the second marking of the

answer scripts and scaling of marks and to the least such things as improvement of question and question paper, scoring procedures, internal assessment, objectives of teaching different subjects etc. The Board has undertaken valuable reforms on both administrative and educational fronts.

(c) Administrative Reform in Examination System :-

(i) Appointment of paper-setters - Under the leadership of the Department of Curriculum and Evaluation, NCERT, the Board of Secondary Education, Assam, organised paper-setters, workshops in mathematics, physics, chemistry and biology during 1967 and 1968. Fifty three persons were oriented in these workshops. They included University teachers and teachers of the first grade Colleges of the State. The technical competence of the paper-setters is thus raised through intensive training programme and they now possess the knowledge and skill of constructing valid and reliable tests. The programme extended to the humanities group in October, 1968.

(ii) Appointment of Examiners - The examiners at the H.S stage are University, College and School teacher. There was no fixed policy. Examiners are being appointed on the basis of academic qualification and teaching experiences. A teacher may be appointed as examiner if he possess minimum qualification and teaching experience. Once an examiner is appointed, he continues till his
(iii) Condition of Passing – In the Secondary stage, the pass percentage in English and Vernacular languages is 36%, in other subject it is 30%. A student must also secure a minimum of 36% marks in aggregate to get a pass in the examination. A student may just pass in all subjects, but if he does not secure the highest aggregate, he is declared as 'failed' in the examination. On the other hand, a student even though he may fail in two subjects for which some grace marks are allowed is declared as 'passed' if he maintain the aggregate.

(d) Academic Reforms in Examination System:

The aspects of academic reform in the examination system are (1) Questions (2) Question Paper (3) Scoring Procedure (4) Internal Assessment and (5) Training of Teachers.

Question and Question Papers – The questions in the question paper etc. necessarily objective-based, but a higher percentage of questions to test the student's general intelligence, skill, comprehension, originality etc. are included in good proportion. The total number of questions have been increased by substituting more and more short answer questions. This has helped in covering a
better area of the syllabus. Questions are spread over the content of the syllabus so that students are encouraged to study the course thoroughly. Care is also taken in wording the question in simple and clear language.

Scoring Procedure - Instructions to examiners are issued in respect of all subjects. The paper-setters prepare the instructions and forward them to the Board along with the question papers. Instructions to examiners give ideas about the distribution of marks and help to bring about uniformity of standard in marking. But a marking scheme as developed by the Department of Curriculum and Evaluation, NCERT is definitely a better substitute to instructions to examiners. The marking scheme has a design and contains value points, for each question against which marks are shown in the scheme. Since a fairly large number of questions are short answer type, the Board insists on marginal distribution of marks. In 1966, there was no marginal distribution of marks in many question papers. In 1967 and 1968 there were marginal distribution of marks against all questions in mathematics, physics, chemistry and biology. The procedure is not uniformly followed in all subjects.

Internal Assessment - The idea of internal assessment as recommended by the Education Commission is not feasible for evaluation of non-scholastic aspects in our
institutions. In fact even class examinations have no sound policy. Some schools give weightage to marks of quarterly and half-yearly examinations for promotion to higher classes, but the procedure is neither uniform nor universal. In the public examinations internal examination marks are never taken into account. The Board does not have any policy on school evaluation.

Training of Teachers - The teacher is the key person in the examination system. The problem of disseminating new ideas to a large number of teachers is a major task, but this has to be accomplished for no educational reform can make firm hold unless the idea behind it is understood by those who are going to practise it. For this reason the Board has organized workshops known as orientation workshops, for teachers in educational evaluation. Orientation workshops are held in District head quarters of the resource persons.

The study on examiners, efficiency and personality correlates (Pal, 1986) supports the general notion that examiners differ markedly in their efficiency to assign marks to the answer script. As regards the personality correlates of the examiners, efficiency, the

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study reveals that there are significant differences between efficient examiners and inefficient examiners on the needs of achievements, affiliation and dominance.

Kamat (1988) offered some comments on the statistical reform in evaluation systems suggested by Dandekar. In his view, what is fundamental to the whole discussion of reforms in evaluating procedure. The objectives of an examination or test (in a subject) are (i) to shift from ethos, those who attain a desired minimum level of attainment, that is pass from failure and (ii) do classify the passes further according to the level attained by them. This is done either by giving scores and specifying a minimum score or by (the more acceptable procedure now a days) assigning grades and specifying a minimum grade. The ranking procedure is relevant when the examination is a competitive test of selection where only a certain fixed number is to be selected for a job or for undergoing a further course of training. Even here ranking of all the candidates is not necessary if grades are used for evaluation; only one grade need be ranked. Thus if 100 candidates

appearing for a test are valued as 10 in A, 15 in B, 20 in C, 20 in D and so on, and only 50 are to be selected, it is necessary to rank only 20 candidates in grade D. But in all other examinations where the objective is primarily to assess the level attained and not so much to select a certain number, arbitrarily fixed proportions of passes and of holders of different grades will be accepted in place of the present system of giving scores (or grades). Every candidate who appears at such an examination expects his performance to be assessed individually and not merely in relation to others by an arbitrary mechanical method (although at the same time statistical) of selection. If the number of candidates at an examination were small, nobody will seriously think of prescribing a procedure based on ranking to replace the present system of individual assessment by scores or by grades. The problem admittedly becomes difficult and also different in the case of a mass conducted examination. But this does not alter the expectation of the candidate that he should be assessed as an individual. A psycho-social question is involved here and its resolution does not appear to be as easy as what may appear from the paper by Dandekar.

The hypothesis that "experience" with internal assessment reduces the attitude of the students towards
the system was accepted.\textsuperscript{113}

In recent years the semester system of education has been introduced in many Universities and Boards. With the introduction of the semester system, a number of changes have been made in the traditional system of examinations. The objectivity and scientific precision of the semester system demands a more sophisticated and reliable system of evaluation. The system of grading has become quite popular in many Indian Universities consequent upon the introduction of the semester system. Under this system marks may be assigned to each course, but the overall assessment of the students is indicated in terms of A, B, C, D, E. But, extensive implementation of the programme of internal assessment may get vitiated by extra-academic considerations. So, it is necessary to devise ways and means to guard against extra-academic considerations influencing teachers in internal assessment.

In a study on Examination Reform at the school level Kaul (1974)\textsuperscript{114} reported that - Introducing the semester


System of examination does not seem to be a suitable way of combating the various problems of the existing examination system at the Secondary and H.S. levels because of the large number of students at these levels. This scheme also requires a huge amount of money and a lot of human resources. Hence under the existing conditions, the scheme seems to be impracticable and impossible. One unfortunate feature of the conduct of examination in recent years has been copying by examinees on a mass scale in some States. It is an expression of the general failure of the educational system and of social tensions. So far as education departments are concerned, the problem can be overcome by improving the tone and efficiency of teaching by improving administration and by restoring a sense of the purpose of education. It is waste of energy and resources to continue and expand the existing pattern of Secondary education. There is a need for vocationalization of Secondary education. India requires a system of education which will relate classroom experience in industry, business, agriculture and other sectors.

Examination reform as the editor of Hindustan Times has put it - can only be an aspect of educational reform which in turn must be related to life, employment and opportunity rather than the pursuit of bookishness.

The advantages and disadvantages of the symester system of examination have been discussed by the workers and researchers on examination reform. The majority opinion is that, in the symester system of assessment or evaluation, subjectivity in assessment or evaluation cannot be completely eliminated. " It is true that greater objectivity in assessment can be assured in the symester system because the emphasis is on objective type of questions like fill in the blanks, true or false, opposite tests, commenting on certain concepts (short answer), explaining a concept in fifteen sentences etc. Further even under the symester system, the flows remain because guessing by student cannot be completely eliminated. Such an error factor can be minimised or eliminated by increasing the number of alternative answers for each question. Of course the techniques of re-evaluation can infuse confidence in the symester system of examinations on the part of students as well as the lay public. This is because inaccurate and erratic valuation or assessment by teachers will be a thing of the past."

Kundu (1982) concluded in his study on the semester system that — “The semester system may result in a distinct improvement of curricular organisation and evaluation in vogue at present. Because of short and coherent subject matter, the semester courses are likely to be more conveniently combined to facilitate inter-disciplinary studies. It would make it possible to co-ordinate studies between different departments at graduate and post-graduate levels. Further the system will enable teachers to cover the subject matter in a more logical and non-repetitive manner. It would allow students a choice of subjects according to their ability, aptitude, interests and needs which would help in reducing wastage. One other significant advantage will be that it would allow the students to progress rapidly towards fulfilling the requirements of the degree. It would reduce the evils of a single final examination. It would pave a way for more frequent changes in courses aimed at their modernization and enrichment. Its greatest virtue will be flexibility, better curriculum, better focussed teaching and learning and fairer and more just deal to students in examination. And all of these would

mean better curriculum, better learning, more student pre-occupation and less student unrest.

Pillai and Pilley (1979) studied on the working of the symester system. Their findings were:

1. The principals, parents, teachers and students were in favour of the symeter system.
2. The urban students, particularly women students, highly favoured the symester system as compared to the rural and male students.
3. The arts and the commerce students were more in favour of the symester system than the science students.
4. There was no significant difference in opinion between the teachers and the students about the symester system.
5. Nearly 84 percent of the teachers and the students agreed that the symester system helped the students to study throughout the year.
6. Though 88 percent teachers claimed that sessional work in the symester system was pre-planned and worked according to the time table, nearly one-fourth of the students did not agree to it.
7. About 25 percent students indicated that seminar and other new techniques of teaching and learning had not been properly conducted in their colleges.

118. Pillai, I.K. and Pillay, G.S. (1979): Working of the Symester system; Department of Education, MKU.
the teachers claimed that they had been fair in the internal assessment of the students, 34 percent of the students did not agree to it (9) Even after the introduction of the semester system, disciplinary problems continued to cost in men's colleges.

The attitudes of the teachers and students towards semester system of education was studied by Somsin (1980) 119. The main findings of the study were - (i) There was no consensus either among teachers or among students for favouring or disfavouring the semester system (ii) The system was favoured by both teachers and students on certain positive aspects. The system was found to be useful by them on account of the fact that it helped to divide the curriculum into smaller units, that the short duration made learning and teaching more regular and that it kept the students busy throughout the year (iii) It was not favoured by them because the students were not oriented to studying under this system they found it difficult to adjust themselves it needed a lot of planning and there was delay in admission and the starting of classes (iv) Both the teachers (96 %) and students (94 %) tended to agree that the system could be successfully

implemented with a smaller teacher-pupil ratio of 1:30. The teachers and the students suggested that the orientation programme should be conducted for teachers to work under the system (v) Both the teachers and the students (80 and 85 percent respectively) favoured the system since it reduced the stress and strain on the mind of the students. But the students felt that the system reduced the opportunities for co-curricular activities to which about 45% teachers agreed. A majority of the students (78%) and the teachers (75%) tended to favour the system as it helped to reduce the uncertainty of one's success by expanding the scope of evaluation based on the performance throughout the semester (vi) The chi-square test revealed that no significant difference in the attitude of the teachers of institutions (or women and of those marking in co-educational institutions) (vii) There was no difference in the attitude of teachers and students of woman's institution, the disciplines of physical sciences and social sciences. There was a significant difference in the attitude of teachers and students of general education institutions and professional institutions (viii) The students coming from different income groups and from different family sizes differed in their attitude towards the semester system of education.
The N P E (1986) has given much emphasis on re-casting examination system to bring about qualitative improvement in education. According to the policy re-casting of the examination system is needed to ensure a method of assessment that is a valid and reliable measure of student development and a powerful instrument for improving teaching and learning in functional terms. This would mean -

(i) The elimination of excessive element of chance and subjectivity.

(ii) The de-emphasis of memorisation.

(iii) Continuous and comprehensive evaluation that incorporates both scholastic and non-scholastic aspects of education, spread over the total span of instructional time.

(iv) Effective use of the evaluation process by teachers, students and parents.

(v) Improvement in the conduct of examinations.

(vi) The introduction of concomitant changes in instructional materials and methodology.

(vii) Introduction of the semester system from the secondary stage in a phased manner.

(viii) The use of grades in place of marks.

These goals are relevant both for external examination and evaluation within educational institutions. Evaluation at the institution level will be
streamlined and the predominance of external examinations reduced.

Various education policies and Commissions including the latest modifications in the NPE adopted in 1992 have decried the present examination system and recommended immediate reforms like elimination of chance, continuous evaluation spread over the entire duration of instructional time or less emphasise on memorisation. But the outdated system of examination continue to be followed knowing the drawbacks well. "The system of annual examination should be such that it makes students and teachers serious enough right from the beginning of the academic session. Experimentation with the idea of question banks could be done for many good points it has in its favour. In order to instil confidence in the minds of students regarding the award of marks to them, there should be given the right to appeal. An appellate Board of the University may be set up for the purpose."

"Time has come to be practical and we cannot continue with outmoded examination system and had quality of education available. It has never gone above mediocrity. And one reason for it was that investment in

120. Joshi, H.C. (1982) : The Examination that Failed ;

education was pathetic and in higher education practically nil.\textsuperscript{121}

It can be derived from the history of examination reforms in India, that the newly created problems in the changing environment emerged on reforms in examination system for re-adjustment. But the periodical re-adjustments also proved to have some serious defects resulting total failure in education. Two important criteria of good evaluation are what educationists call reliability and validity. Reliability is directly related to clarity and simplicity of the language of questions, proper discrimination over appropriate range of ability levels and allotment of optimum time. Ambiguity of language used both in individual questions and general instructions to which the written examination may be subjected to is a major source of deficiency in the reliability of examinations. Validity is a prime consideration which reflects the degree to which an evaluation device approaches relevance. The most important factor influencing relevance in the context of evaluation is the coverage of the content and the mental process involved. Oral examination ideally suits the reliability criterion of evaluation in

\textsuperscript{121} Rao, C.N.R. (1933) : Call to overhaul examination system ; Second National Debate on Indian Education System, Bangalore, The Hindustan Times, Nov. 21, 1933.
so far as clarity and simplicity of language of questions are concerned. Availing the scope of flexibility the examiner can probe the depth of a student's understanding better through oral tests." 122

Sharma (1985)123 concluded in his study on scaling of examination scores that -

1. Raw scores can be meaningfully interpreted if they are presented in terms of standard scores.

2. Since academic assessment is always relative, the group mean and group variability must not be ignored, as is being practised today, while displaying the inter-discipline positions of the pupils in the Universities.

3. Other things being equal, the position of the toppers on the standard scale is largely determined by group variability. The higher the group variability, the lower the position on the standard scale and vice-versa.

4. When the raw scores as well as the group variabilities


of two toppers in two disciplines are more or less equal, the positions on the standard scale are significantly altered by a variation in the group means.

5. The toppers with greater difference between their raw score and group-means and with their lower variability would score higher position in comparison to those whose difference between their raw scores and group means in lesser but whose group variability is greater.

The suggestions offered on these findings are -

1. Individual marksheets that a University issues to the examinees should also display the group-means as well as group variability with a view to making the University scores and the relative positions obtained by the examinees better comparable and more meaningful.

2. With a view to making intra as well as inter-University scores on various subjects and in different disciplines comparable, the raw scores in various subjects obtained by the examinees at the terminal University examinations or at the High School Board's examination must be converted into standard scores, and not at all on the basis of percentages. The position earned by an examinee should be invariably displayed indicating thereby the group mean and group variability.

3. For all India admission and selection purposes, this study proposes the introduction of a system of scaling of standard scores in all the Indian Universities,
Boards of Education as well as in all subjects and disciplines so that the same competitions may be evaluated on the same base and along the same standard scale.

Scaling by percentage of examination scores which assumes equal probability hypothesis takes into consideration neither the group variability nor the normal distribution of the obtained scores. Further the percentage differences are not the satisfactory indices of difficulty and discrimination. In view of these shortcomings, in the traditional scaling system by percentage standardisation of marking through the scaling technique has been suggested as one of the measures of examination reform by many investigators.

Reform in Teaching Methods:

During past two decades, the methods and contents of instruction have undergone profound changes and have become new and novel. New methodology of teaching evolved in the changing education system to encourage active perception, active thinking and active acting. Alongwith re-designing and renovation of curriculum, new methods of teaching are being used to optimise learning on the part of the pupils. The objectives of education are to fulfil by appropriate methods of teaching. It is the job of a teacher to utilize the appropriate method for a
specified objective to yield optimum results. "The selection of a method or combination of methods to achieve a given educational objective depends on a number of factors such as the unique features of the method and the availability of resources. The traditional way a teacher lecturing or giving oral lessons to a class of 40 or more children - may be quite ineffective and far more costly when the final product is evaluated against specified standards. Rather than taking ad hoc decision based on precedents or half-hearted adaptations of procedures imported from foreign countries, our education and policy makers need to orient themselves in favour of empirical solution of problems." 124

Use of effective media, aide or technology with the methods of instruction as supplementing each other is an important factor contributing to the development of teaching methodology in the modern time. Vernon (1950)125 reported that the following qualities make educational broadcasts more intelligible.


(a) Limitation of number of teaching points
(b) Clear summaries
(c) Lucidity and liveliness of style
(d) Concreteness of both subject-matter and treatment and
(e) Illustration of principles or abstract points

Qualities which hindered intelligibility were
(a) too speedy delivery (b) flowery or literary metaphors (c) very long sentences (d) difficult vocabulary and (e) complex sentence structure.

In the modern methods of teaching use of teaching aids - visual and audio-visual received much importance. Countries like the U.S.A. have replaced radio by films and television. But, countries like India cannot afford to replace this cheaper medium. The Education Commission (1964-66) has recommended that the majority of either primary and secondary schools should be equipped with low cost radio sets.\textsuperscript{126} Film is one of the most powerful and versatile media as it combines both the oral and visual modes of perception. Dale (1954)\textsuperscript{127}

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enumerated the following advantages of film media.

1. Certain phenomena or processes involving motion, for example, the growth of plants, can be best presented and explained through the media of films.

2. A dark room in which a film is shown creates a certain absorbing atmosphere which enables students to concentrate on what is being presented.

3. A film heightens the realities of a situation since it pinpoints certain situations and avoids distractions. The actual size of an object could be enlarged or reduced as required by the instructional needs of the theme.

4. In films, one can control the time factor by slow-down techniques.

5. Films can bring the distant past and the present into the classroom. History is much more vivid when reproduced in films.

6. Films can be used to present events and processes otherwise likely to escape ordinary perception.

Use of films along with other methods of teaching may yield better results than the traditional textbook fashion of teaching. Anderson and others128 compared

the teaching of high school biology: (a) in the traditional textbook fashion with a minimum of laboratory work (b) using 18 appropriate films to supplement the text materials but no laboratory experience (c) using laboratory experiences, such as dissection and examination of specimens, but with no films and (d) using films plus laboratory methods. The 'd' group (film plus laboratory methods) achieved significantly higher scores than the other three groups.

In another study, Anderson and others\(^\text{129}\) compared the teaching of high school biology: (a) without films (b) by films used at intervals throughout the years and (c) by films bolstered with an emphasis on the principles stressed in each film. They found that the films with principles stressed method was somewhat superior to the film method which in turn was superior to the conventional method.

An advantage of 'self sufficient' televised or filmed lesson is that, its use makes it possible to offer courses of instruction on a wide variety of subjects in small schools where qualified teachers are not available for all subjects.

The television centre of All India Radio is using TV lessons in physics, chemistry, English and Hindi. These lessons are closely integrated with the classroom lessons. In India, the work of programmed instructions in TV has started in 1961.

Educationists and research investigators working on teaching methodology have been searching for new ways of teaching different subjects in the classroom as a common forum of teaching-learning process. Lot of innovations are taking place in the teaching of science, languages, mathematics, history, geography etc. along with curriculum reformation movement. Method of teaching different subjects are also closely related to the field of teacher education, because effective teaching to a great extent depends among other factors, on the manner and method in which a topic is handled by a teacher and the manner in which he or she solves problems that come in the way of handling. This literature also serves as a feedback to training colleges in regard to the method of teaching.

Kaur (1979)\textsuperscript{131} studied on the effectiveness of teaching science with the help of traditional and improvised apparatus. He reported that teaching of science through improvised apparatus helped to train students in scientific method and develop scientific attitude and was found to be economical and better than the traditional apparatus technique. Improvised techniques were found to be more helpful for giving home assignments to the students.

Charles (1979)\textsuperscript{132} observed that, laboratory programme is efficient and far superior to lecture method. A definite change in the behaviour of students by acquiring new knowledge was observed. Acquisition of new knowledge involved comparatively lesser time in laboratory programme than in lecture method.

The effectiveness of different instructional strategies namely, lecture method, demonstration method and group activity method differed from treatment to treatment.

\begin{itemize}
\item \textsuperscript{131} Kaur, A. (1979): A Comparative Study of the teaching of Science with the help of traditional and improvised apparatus; M.Ed. dissertation, Sohanlal College of Education, Ambala, Haryana, p. 43.
\item \textsuperscript{132} Charles, G. (1979): Developing a laboratory programme for teaching non-metals for Secondary School students; M.Ed. dissertation, Laxmi Teachers Training College, Ambur, Tamil Nadu.
\end{itemize}
Re-Adjustment and Re-Orientation:

Re-adjustment and re-orientation of the system of education at all stages have needed in the changing society and environment. In the process of re-adjustment and re-orientation, and opportunity to students to develop new interests and new skills has to be afforded so that each student is helped to make an effective contribution to his own self and to the society in which he lives. As the student enters the H.S. stage a new pattern of relationship between him and the education he receives has developed or is developing fast. Educational reforms for re-adjustment and re-orientation requires and organisation of a well-thought-out guidance programme which will harness all the energies of the youth for a better social order. Some of the specific activities which a guidance programme has to undertake during the secondary school period as envisaged in the NIE series for teachers are - (1) Aiding pupils to orient themselves to


the new purposes of education: Through a series of class talks each student has to be helped to look at secondary schooling as fulfilling of liberal education for all, education for employment for many and education for leadership for the few. They should be clear in their minds as to what education can do for them to enable them to live a happier and more prosperous individual and social life.

(2) Aiding pupils to orient themselves to the need for good planning: Students are often ignorant of the need for planning and the far reaching effects that a good or poor planning can have on the life of an individual. Many a mistake in choosing a course of study can be avoided if students are introduced to a system of wise planning in the final year of the school through a systematic programme of talks and orientational activities.

(3) Aiding pupils to adjust themselves to their education by making wise choices of the subjects of study: When the time comes for making a choice, each pupil has to be helped to make a right choice of subjects. This usually goes by the name of curricular guidance and is one of the main functions of educational guidance at this stage. Only by making a right choice will each child be able to utilize his educational potentialities.
to the maximum possible extent.

The reconstructed secondary education system in India provides for diversified curriculum at the H.S. stage beginning from class IX in the structural pattern recommended by the Secondary Education Commission and from class XI in the re-structural pattern of 12 year H.S. education recommended by the Kothari Commission.

(4) Aiding pupils to make progress in their education by removal of subject difficulties and development of good study skills: The importance of remedial teaching and good study skills for better achievement has been recognised on all hands. But seldom does a school undertake programmes which are aimed at meeting these very important needs of pupils. A good educational guidance programme must include these.

(5) Aiding pupils to build proper motivation for study: This is one of the most important tasks for the school to accomplish though by no means an easy one. Certain guidance activities directed to this end must be included in the instructional programmes of the school. A lot of emphasis has been given by experimental educationists to motivation in the process of learning. Each school has to find out its own ways of motivating children for better learning.
Secondary education being a connecting link between the primary and University education has a vital role to play in many programmes of education for the community. Students must have received their grounding in a system of sound secondary education covering up to H.S. stage. Reforms, re-adjustments, re-orientation and development of secondary education are therefore needed to satisfy the needs of the modern age.

**Trends of Development:**

Two major tendencies have been discernible at the secondary stage since 1950 - (1) a gradual transition of traditional pattern of bookish education into a vocational one and (2) attempts to make secondary education a self-contained stage. A large number of courses have been provided for this stage catering to the needs of vocational technical training encouraged by a tremendous demand for skilled and semi-skilled manpower created in the context of the development and construction activities of the country. The trends of development of secondary education in India since appointment of Secondary Education Commission (1952-53) are very much prominent. The Secondary Education Commission (1952-53) and the successive Commissions on education recommended various bold and far-sighted measures like opening of
H.S. courses in schools, improvement of teaching and school libraries, training of teachers, introduction of vocational courses etc. The Kothari Commission has drawn attention to the importance of work experience, the transition from "the world of school to the world of work" and the development of requisite manpower for the country with practical training in industry as an integral part of education. The role of education and skilled manpower in promoting socio-economic development has long been recognised and documented. The educational development programmes so far evolved and implemented in our country aimed at liquidation of major contemporary problems like, unsuitability of curriculum, student indiscipline, defective mode of examination, and teaching and teacher oriented education. Such problems being directly connected to young students of H.S. stage, major reforms in educational system lies at this stage.