

## CHAPTER I

## INTRODUCTION

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Educational system has always been expected to play a prominent role in shaping the future of any nation. Operating in a society where several other sub-systems are at play, the educational system would influence and in turn be influenced by these. This implies that political, economic and social developments of any nation would seek the cooperation of education. In societies under the impact of science and technological developments, a complexity in living conditions cannot be overlooked. To cope with these complexities, education is expected to develop in man a repertoire of skills and abilities. A sound liberal and professional education is an endeavour in this direction. In this context, higher education assumes an important role to respond to the continuously new demands which are taking place during the rapid transformation of societies with regard to economic, cultural, social and other aspects. In a country rooted in a philosophy of democratic socialism, the effective management of the above stated role, would necessitate that the educational

system, particularly at higher education level, would need to be democratised. Higher education, with such a philosophy shall have to function through certain institutions which would be solely concerned with the fulfilment of specific objectives reflecting the democratic philosophy. These institutions are the universities. The universities have always believed the direct participation in the transformation of society by way of providing the needed leadership. The universities have, therefore, been set up not only to keep the society for which they exist moving but there are many ways by which universities could play a dynamic role in helping in a large measure to deal with emerging problems which characterise the process of change in a developing society. This role may be emphasised, becomes highly a differentiated one, due to the fact that problems in a developing country are unique due to their very nature and therefore, solutions to these problems shall have to be made more intelligently and objectively in the light of conditions prevailing at specific points in time. While participating in this activity, traditionally the universities make continuous and sustained efforts in three major dimensions, viz., teaching, research and

extension work. Accordingly, the objectives towards which the universities in the Indian society would function may be analysed to fall within these dimensions. It is, therefore, considered pertinent at this juncture to enumerate what the Education Commission Report viz., the Kothari Commission (1964-66) has to say regarding the functions of the universities.

- '1. to seek and cultivate new knowledge to engage vigorously and fearlessly in the pursuit of truth and to interpret old knowledge and beliefs in the light of new needs and discoveries;
2. to provide the right kind of leadership in all walks of life, to identify gifted youth and help them to develop their potential to the full by cultivating physical fitness, developing the powers of the mind and cultivating right interests, attitudes and moral and intellectual values ;
3. to provide society with competent men and women trained in agriculture, arts, medicine, science and technology and various other professions who will also be cultivated individuals, imbued with a sense of social purpose ;
4. to strive to promote equality and social justice and to reduce social and cultural differences through diffusion of education, and
5. to foster in the teachers and students and through them in society, generally, the attitudes and values needed for developing the 'good life' in individuals and society.'

On examination of the functions listed above, there is no gainsaying the fact that teaching in universities plays a significant role in fulfilling the said functions. If this

role is significant, the question which arises is : how should teaching play this role ? Obviously, teaching activity in universities has to be an organised efforts, systematically arranged and suitably modified through continuous scientific evaluation procedures. Accordingly, teaching plays its role in the process by reorganization of education with regard to its various subsystems, viz., courses of study ( curriculum ), methods of teaching and evaluation. The synchronisation of courses of study, methods of teaching and evaluation would be to a great extent, governed by the consideration as to whether the evaluation is to be made summatively or formatively. The former would organise these subsystems in such a way as to evaluate performance at the extreme end of the course. Most commonly this type of evaluation is done through an external examination conducted on completion of the course and degrees are awarded. The latter has an in-built system of evaluation of students' performance generating constant and continuous attention to their performance. It measures the quantitative qualification aspect of a student's accomplishment during a particular period. The degrees are then awarded. The two different systems are functioning in different countries with various educational systems.

As stated earlier, organisation of the higher system would be influenced by the type of evaluation procedure decided upon. At present, there are variations with regard to evaluation system in different universities in India; the choices have been made and are being made in view of changing circumstances, nevertheless, with the main objective of making the entire system more and more scientific. It may, therefore, be relevant to study how the system has evolved through its various stages.

#### University Education in India since The British Period

The types of universities that exist today were established during British Period in India. The university education in India was very much influenced, specially during its infancy by the system prevailing in the United Kingdom (U.K.). In the U.K., the University of London offers degrees in Arts, Law and Commerce where the student is assessed through a single final examination. Upto 1857, in the U.K., universities were of the affiliating type but from 1858 onwards they gave up the idea of affiliating type universities. However, in India, in the year 1857 three universities namely Calcutta, Bombay and Madras were established and these were modelled after the affiliating type of the London University. In such a model of a university, the affiliated colleges are; in practice, the real centres of learning. The university itself is not a unit

of teaching but is merely a unit of administration and the sole duty which it assumes is to hold examinations and confer degrees. While these universities continued to function as per this pattern, the first move to introduce variety in the university systems on the Indian scene, came with the emergence of the Allahabad University in the year 1887 modelled after the university pattern then prevailing in Germany. In the meantime by about 1913 in the U.K., the federal type of organization was abandoned in favour of unitary, teaching and residential universities. The same idea was reflected in some of the Indian higher learning institutions at that time; nevertheless many of the Indian universities that began later accepted the model of the three presidency universities - Bombay, Calcutta and Madras.

It may be mentioned here, that the affiliating universities had a special feature namely, that the teaching was done in affiliated colleges and the examinations were conducted by the universities. So the Indian universities have not made a conscious choice in respect of the examinations. These affiliating universities affected the teaching, learning and evaluation procedures within their jurisdiction. A few illustrations to this effect are enumerated as below :

- (i) The success of a candidate was assessed on the basis of the final external examination after two years either at the graduate or post-graduate level.

- (ii) The teachers who taught the students had no say in the evaluation with regard to the capabilities of a student as the examinations were external.
- (iii) The syllabus and text-books were prescribed by the universities for all the affiliating colleges under their jurisdiction. The examination papers were set on the basis of the syllabi and the text-books. The concerned teacher had no direct participation in the formulation of the syllabi. The system was not flexible.
- (iv) Teaching was examination-centred and preparing the students for their success in examinations was the sole aim of teaching.
- (v) Students could afford to neglect their studies for a pretty long time as there was no continuous evaluation. They concentrated on their studies at the fag end of the final year before the examinations.
- (vi) The standard of teaching showed high variation from college to college reflecting mainly the extent to which these colleges were equipped.
- (vii) The student had no active participation in the teaching learning activities.
- (viii) With the final examination in focus and absence of formative evaluation, teacher-student contact was limited.
- (ix) Cognitive aspects of pupil development were the main consideration and affective attributes were neglected.

- (x) This system of examination was most unreliable and inadequate and characterised by wide discrepancy between examining bodies.

The urgency of reforms particularly with regard to the examination system were felt since the time of Lord Curzon, but no concrete steps were made. The major attempt to rectify the defects began with the dawn of the era of examination reforms in the 20th century. The attempts were accelerated during the post independence period when the expansion of university education was rapid. The Report of the University Education Commission (1948) suggested some important progressive directions for the university education. The Commission (1948) remarked that the examination system was the main weakness of the university education in the country. In the year 1957, the All-India Council for Secondary Education sponsored seminars with the guidance of the expert, Dr. Benjamin S. Bloom of Chicago University, who recommended the setting up of a Central Examination Unit attached to the National Institute of Education in order to coordinate projects concerned with examination reforms. Subsequent years witnessed a few endeavours made in the direction of examination reforms. These are : The All-India Agricultural Education Conference held at Bangalore in 1969; Examination Reform in central universities by the University Grants Commission in



1969 ; Inter-University Board in India and Ceylon's Examination Reform Seminar in 1970; A plan of Action by the University Grants Commission in the years 1971, 1973 and 1976; and Madurai Workshop on Examination Reforms in 1974 were suggested. The Education Commission (1964-66) has stressed specially the need to improve teaching and evaluation methods to introduce an element of flexibility in the selection of courses, and freedom of choices, to reduce the present tendency of memorisation. The Education Commission has recommended as follows :

- '1. The combination of subjects permissible for the first degree should be more elastic than at present, both in the arts and in the sciences. It should not be linked too rigidly to the subjects studied at school.
2. There should be general, special and honours courses at the undergraduate stage. Universities which have better facilities should only provide for special courses or for general (honours) courses. Affiliated colleges should have an option to provide either the general courses - both at the pass and honours level - or the special courses, minimum enrolment being prescribed for the general (honours) and special courses to economise on costs.
3. It is an urgent need to introduce flexibility and innovation in the organisation of the courses for the Master's degree. The curricula should be framed as to provide a general broad-based course or intensive training in one or two special fields.' ( Page 592 ).

### Semester System

The idea generated by the Education Commission (1964-66) received due attention by the University Grants Commission (U.G.C.). The U.G.C. appointed a committee of few experts to give their ideas regarding the semester system. The U.G.C., on the basis of the opinions of these experts, published a brochure entitled as Principles and Mechanics of the Semester System (1971) for the sake of guiding the universities which are desirous to adopt the semester system. It was felt by the experts that the introduction of the semester system, if carried out in a coordinated and systematic manner, was likely to initiate a process of modernization and improvement in both teaching and learning process, apart from bringing about the much needed reform and flexibility in course content and techniques of evaluation.

The Dictionary speaks about the term semester as -

'half of the academic year usually 16 to 18 weeks'

(Dictionary of Education)

'A period of term of six months, especially in German Universities and some U.S. colleges, the college half year' (Shorter Oxford Dictionary)

'either of the two terms, of about eighteen weeks each, which usually make up a school or college year'. (Webster's New World Dictionary).

It is clear from the above definitions that the term semester signifies the division of the academic year into two parts called semester with the designing of the courses separately for each semester.

The semester system is an innovation for India but it is practised in some of the progressive countries like U.S.A., U.S.S.R., Japan, Germany etc. A brief discussion of the semester system in these countries follows.

#### Semester System in U.S.A. :

The history of the semester system in the U.S.A. when studied from the literature available indicates the following trend. According to the W.H.Cowley's report ( in the University Calendar, 1964) calendars were in vogue in America since its first college of 1636. Initially the four term pattern was effective at Harvard University for 165 years. Then the three term pattern became predominant during the eighteenth and nineteenth centuries. The term three-term was supplemented by the two-term as the semester system which was derived through the prevailing German educational thought at the point of time. According to the University Calendar report, 1964, the most prevalent academic calendar among American Colleges is the semester pattern. The report also states that 14 percent were on the quarter system and

most of the remaining were under the semester system as per the office of Statistics Information and Research of the American Council of Education. The semester calendar generally consists of two regular terms of about 15 weeks of classes, plans a summer session. The summer session is generally outside the regular academic programme and is composed of sessions of somewhat different clientele, with different and usually limited array of courses offered and taught by only a fraction of the regular staff. In most colleges, the emphasis is on the student's learning of what is taught. It fits in well with text-books, weekly classes and quizzes through hours and final courses. According to the report the prevalent semester calendar has been modified in a number of ways to satisfy the needs and objectives of the people. It is also true that in the U.S.A. the institutions of higher learning follow different academic calendars of the semester system. The definitions of six types of calendars are available from the report on Academic Calendars, 1971, (L.C.Oleson) published by the American Association of Collegiate Registrars, and Admissions Officers are presented in what follows.

(1) Traditional Semester : College year is divided into two equal semesters. The first semester starts from the 10th September and ends about the 25th January; the second semester

starts from January 30th and ends early in June. Semester hours are used for credits.

(2) Early Semester : College year is divided into two semester, usually the first semester is slightly shorter than the second. The first semester starts about August 30th and ends about December 21st; the second semester starts about January 15th and ends about May 20th. Semester hours are used for credits.

(3) Quarter : College year divided into 3 equal parts of about 12 weeks each, with a great variation about the starting and ending. Quarter hours are used for credits.

(4) Trimester : The college year is divided into 3 equal parts of about 16 weeks. The semester hour is used for credits.

(5) 4 - 1 - 4 : The college year is divided into two equal terms of about 16 weeks each plus 4 week term between the two. The 4 - 1 - 4 means 4 months, one month, 4 months. 4 - 1 - 4 also means 4 courses, one course, 4 courses. The unit is used for credits. All courses are of the same credit value; a full load is 4 courses. In the interim only one (1) course is studied.

The United States of America also does not have uniform pattern of courses of the semester system. But every

pattern gives importance to the credits and courses.

Semester System in U.S.S.R. :

It is also found that higher education in Moscow, 'Soviet Union is based on the semester pattern of education. The academic year is divided into two parts. In between the two semesters there is a winter vacation. Examinations are held at the end of each semester. At the commencement of the semesters, the teacher elucidates the topics to be covered for the course, booklets, references etc. student strength in each class is limited. In case of the examination, the first semester examination differs from the second. The first is called as 'Zachoth' where the student is announced as falling in the categories of pass or fail. In the second semester, examination marks are awarded on a five point scale.

Looking at the developments of the semester system in the U.S.A., Soviet Union (U.S.S.R.) and many other countries it is found that the idea has also effected Indian educational system. No doubt the introduction of the semester system in India is a reflection of the influence of the U.S.A. and other countries. Many of the Indian universities have adopted the semester system as a progressive measure in undergraduate and post-graduate classes. It has come as an

educational innovation in the Indian universities. The innovation had its roots in agricultural education. It may be noted here that a major change in agricultural education came in India through the setting up of agricultural universities commencing from 1959. Modelled after the Land Grant Colleges in the U.S.A., these universities have the triple responsibility of carrying out teaching, research and extension education in different branches of agriculture. Most of the agricultural universities adopted in the beginning the trimester system with the operating principle of Land Grant Colleges, but more than half of them have changed over to the semester pattern.

Indian Institutes of Technology also made pioneering efforts in implementing the semester system in India mainly because technological institutes have to depend to a large extent on knowledge and techniques developed in advanced countries. Therefore, with the vital flow of ideas and information from the developed countries, the idea of semester system also influenced these institutions. The three important functions of the technological institutes are - transmission of knowledge, creation of knowledge and utilization of knowledge. The objective of the entire teaching and learning process is to imbibe the right attitudes towards

the fulfilment of professional obligations. Their idea is to develop science courses in engineering with modern approach in curricular development, both in course work and in laboratory instruction. To achieve these objectives the institutes felt semester as the suitable system.

Gradually, the semester system has started getting absorbed into the picture of educational system in India. After the agricultural and technological institutes, a few affiliated and residential universities came forward to introduce the semester system either in part or as a whole. The Meerut University was the first to introduce the semester system on a large scale in 1967. The system was implemented in about 55 affiliated colleges with over 60,000 students. Along with the Meerut University many other universities in the country including Aligarh Muslim University, Benaras Hindu University, M.S. University, Madras University, Annamalai University, Jawaharlal Nehru University etc. have adopted the semester system. Bulletin of Higher Education 1979 by the U.G.C. mentioned that semester system is in vogue in 40 universities, five deemed to be institutions and all agricultural and technological institutions. Many universities in the country have introduced the semester system at under-graduate and post-graduate levels to bring some changes in the structure of higher education. The introduction of the semester system in several



institutions of higher learning has given a new pattern to the educational structure.

Most of the agricultural and technological universities have introduced the semester system with almost all the features for example, flexibility in courses, continuous internal evaluation, credit courses, interdisciplinary courses and grade system of evaluation. The primary task is to study the special features of the semester system, which the Indian universities follow. In brief, some special features of the semester system of a few universities are discussed in the following pages.

#### Semester System in Indian Universities

The Agricultural universities adopted the semester / trimester pattern of American universities. The Agricultural universities are functioning with the 'Package of Practices' namely (a) division of each academic year into two semesters (each of 20 weeks of 100 working days) or three trimesters (each of 14 weeks duration as of 70 working days).

(b) flexible credit course system, (c) internal assessment, (d) continuous evaluation (e) awarding letter grades.

The Indian Institutes of Technology and other technological institutes have introduced the semester system keeping in mind their own objectives. The core programme is

of an interdisciplinary nature, organization of the courses, continuous internal evaluation, grading with points which are characteristics of the semester system in the technological institutes. From the literature available it may be inferred that, in total, semester system is functioning in the technological institutes quite successfully.

The picture of the semester system as functioning in an affiliating university comes from the Meerut university. The university has approximately 55 colleges scattered in five districts of the Meerut division. The Meerut University, Institute of Advanced Study ( Post graduate courses in the campus) and all the affiliated colleges are having semester system from 1967. But very recently all the affiliated colleges reverted to the old pattern. Institute of Advance Study for Post-graduate classes in the Meerut University Campus is still continuing under the semester system. For the affiliated colleges under the semester system, the university had 34 examination centres to examine the scripts. There were 50% internal assessment and 50% external examinations for all the colleges under the Meerut University including the Institute of Advanced Study. But there were no credit courses. It did not follow the grade systems. As there was no credit system, so the hours for home study of the pupils could not be

decided. No doubt from many angles semester system was better but holidays, shortage of staff, finance and the operation process became major difficulties for the affiliated colleges in the Meerut University.

The Madras University has also introduced the semester system with its approximately 40 affiliated colleges. The university has adopted credit, internal assessment and letter grading.

The Madurai University has also introduced the semester system. It is also an affiliating university with 80 arts and science colleges. The semester system has been introduced in 72 colleges at the under-graduate level. The Madurai University favoured for the internal assessment with written tests, seminars, quizzes, assignments and field works etc. External evaluation also has a place in the semester system under the Madurai University.

These affiliating universities though running with the semester system have some difficulties and problems. For example, the understanding among all the colleges on the different aspects of the system including the clarity among the staff members on the management of the semester system. The problems and difficulties differ from university to university with different types of organizations. The M.S.

University, Annamalai University, Jawaharlal Nehru University etc. are residential type of universities. These residential universities are free from the difficulties which the non-residential universities have to face. On the other hand many other universities have introduced the semester system only in a few departments or faculties on an experimental basis. Again in some universities two different systems are in operation. In a single university, the departments are free to select either the annual examination system or the semester system. For example, in the M.S. University of Baroda only five faculties have adopted the semester system namely, Social Work, Home Science, Education and Psychology, Engineering and Technology and Law. Each faculty differs from the other in the organization and implementation of the system. The first two faculties adopted the semester system from their very inception alongwith internal assessment and grade system. The faculty of Engineering and Technology has the semester system but it does not follow the grade system. The Faculty of Education has grade, credit and internal assessment in its semester pattern.

From the preceeding discussion, it is clear that the semester system is functioning in a variety of ways in

different universities in this country. The variations may, perhaps, be attributed to the existing needs and facilities available in each university. For example, the table in the next page shows semester system as it functions in few universities in India.

In the light of these differences it seems to be rather unscientific to merely study the semester system in isolation and determine its extent of effectiveness. To make a conscious decision whether the shift from the traditional annual system to the semester system, it may be necessary to examine in detail not only the semester system as it operates currently but the associated aspects of the new system too. Accordingly an attempt has been made to examine the associated aspects of the semester system.

#### Associated Aspects of the Semester System

The semester system has earlier been defined as a period of half an academic year, the period of instruction being divided into two parts. It is a self contained unit, complete in itself, with a well-defined purpose. Semester continues with the restructuring of the courses, self-study of the students, flexibility in the teaching and learning and to cope with these aspects, the semester has

**TABLE A**  
**DATA REGARDING SEMESTER SYSTEM AS FUNCTIONING IN A FEW SELECTED**  
**INDIAN UNIVERSITIES (SOURCES- SYLLABUSES & OTHER DOCUMENTS)**

SR NO.	NAME OF THE UNIVERSITIES	C O U R S E S						E V A L U A T I O N							WORKING DAYS IN EACH SEMESTER					
		THE ACADEMIC YEAR IS DIVIDED IN TO TWO PARTS	FLEXIBILITY	CREDIT-COURSES	MORE CHOISES FOR COURSES	FREEDOM OF THE TEACHERS IN FRAMING THE COURSES	INTER-DISCIPLIN- ARY COURSES	SUMMER COURSES	ADVISORS	WRITTEN TESTS	ASSIGNMENTS	DISCUSSIONAL SEMINARS	PROJECT WORK	FIELD WORK		LABORATORY PRACTICAL	QW <sub>3</sub>	VIVA-VOCE	GRADE SYSTEM	QUES- TION BANK
1	ASSAM AGRICULTU- RAL UNIVERSITY	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	100 DAYS
2	CENTRAL INSTITUTE OF ENGLISH & FOREIGN LANGUAGE	✓	✓	✓	✓	✓	NA	✓	X	✓	✓	NA	NA	✓	NA	✓	✓	✓	X	18-20 WEEKS
3	GUJARAT AGRICULTU- RAL UNIVERSITY	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	13-20 WEEKS NA
4	HIMACHAL PRADESH UNIVERSITY	✓	X	X	X	X	X	X	X	✓	X	NA	NA	✓	X	X	X	X	X	NOT AVAILABLE NA
5	INDIAN INSTITUTE OF TECHNOLOGY, DELHI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	NA	✓	✓	✓	✓	✓	X	NOT AVAILABLE NA
6	JAMIA MILLIA ISLAMIA UNIVERSITY	✓	✓	✓	✓	✓	X	X	X	✓	✓	X	NA	✓	X	X	✓	✓	X	90 DAYS
7	JAWAHARLAL NEHRU UNIVERSITY	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	90 DAYS
8	M S UNIVERSITY OF BARODA	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	100 DAYS
9	MEERUT UNIVERSITY	✓	X	X	X	X	X	✓	X	✓	✓	✓	✓	✓	NA	✓	✓	X	X	100 DAYS
10	NORTH EASTERN HILL UNIVERSITY	✓	✓	✓	✓	✓	X	X	X	✓	✓	X	✓	✓	✓	✓	✓	✓	X	90 DAYS

NA = NOT AVAILABLE

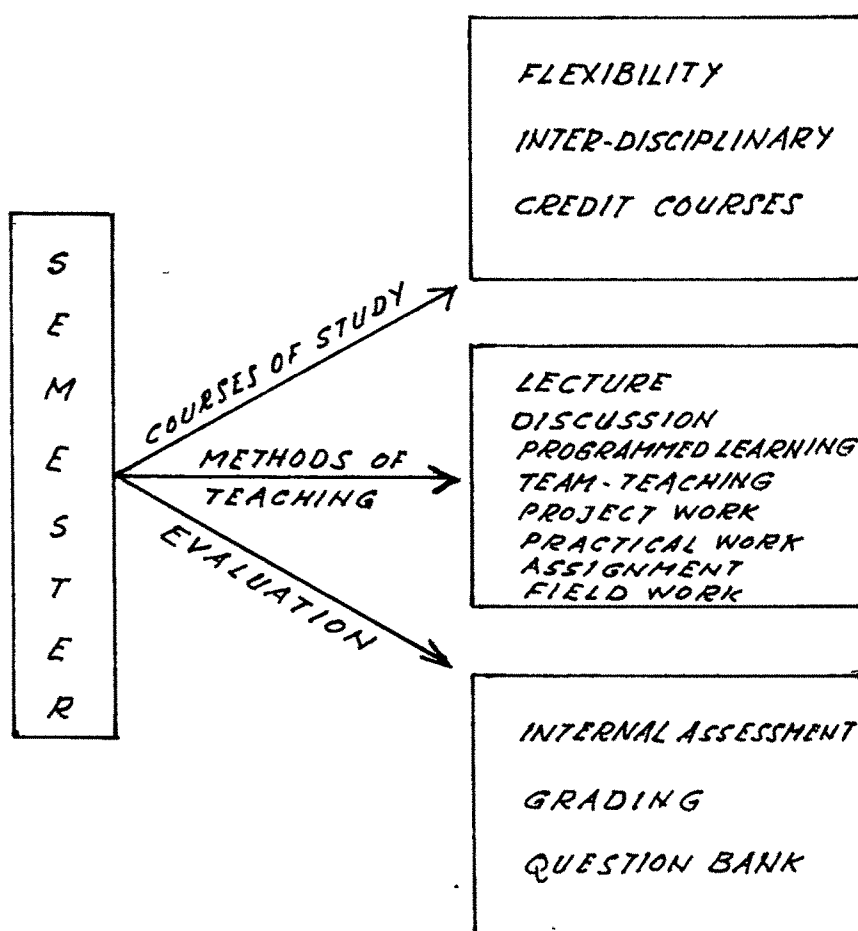
N B : REGARDING METHODS OF TEACHING INFORMATION IS NOT AVAILABLE IN THE SYLLABUSES

come to be associated with the internal assessment and grade system. Once the word pattern, model or system is used, the image of a complex structure consisting of essential and non-essential components is formed. With the semester systems have come to be associated the terms like credit system, grade system, internal assessment, continuous assessment etc. Although the relationship between these and the semester system is accidental yet largely because of their existence in the universities of U.S.A., the Indian Institutes of Technology, and the agricultural universities of India the aforesaid aspects have been taken as an integral or associated part of the semester system. These aspects are the courses of study, methods of teaching and evaluation which are represented in the diagram given on the next page.

Each aspect has been discussed, in brief in pages which follow.

#### Courses of Study

A semester implies a period of half of the academic year, the period of instruction is divided into two parts. With the decision of the academic year, courses are designed to cover each semester - it is not just the single yearly courses divided into two portions.

DIAGRAM - 1ASSOCIATED ASPECTS OF THE SEMESTER SYSTEM



A semester course is a self-contained unit, complete in itself, with a well-defined purpose behind it. The courses are elementary or of advanced level according to the need of the particular class. The whole semester course is a sequence of subject areas with a view to maintaining the idea of continuity within the areas of study with an element of flexibility in the course formulation.

Flexibility : The semester course allows flexibility and scope for planning for the teacher. Departments are also allowed to have the flexibility in formulating the courses by offering a large variety of courses for the required durations of study. The departments can minimise the number of students by offering a large number of courses. The teachers are free to structure the teaching courses according to the objectives of the course. The only constraint to the academic freedom is that the courses are to be completed within a given period of time. Such a freedom with restraint may perhaps promote conscientiousness in the teachers. The core of the semester system is to make the student intensively active with learning experiences during the course of the semester

period with a view to promoting his thinking, learning reflecting in the evaluation of his attainments. As mentioned earlier, the semester courses are considered as self contained. The emphasis is on the reduction of memory related concepts; and to select concepts to develop higher cognitive abilities. There should be opportunity to promote affective attributes, better study habits etc.

Interdisciplinary Courses : As the semester course is flexible in nature it permits the interdisciplinary approach in the formulation of the courses. The restructuring of the courses in a inter-disciplinary way enables the learners to make a selection of courses in such a manner that courses of study are interrelated and can be studied more meaningfully. Besides this, the efforts of the various departments, within a university, may be more systematically coordinated and the professional expertise can be brought to bear an impact in solving common problems through an interdisciplinary approach.

Credit Courses : One of the important aspects of the semester system is the emphasis on the credit courses. Credit system is known as academic book keeping. The special features of the credit system are : the process of continuous evaluation of the students' performance, the absence of a pass or fail on an annual examination basis and the flexibility to allow the students to progress

at an optimum pace suited to individual ability and convenience. Especially in the semester pattern, credit system facilitates students to adjust courses according to their capacity because a brilliant student may take heavier courses than the normal work load. Also depending on the provision made by the institutions students are free to take extra credits or even a minimum number of credits. The quality of a students' performance is measured by the number of credits that the student has completed satisfactorily. Each course has a certain number of credits which describes the weightage.

The semester system adjusts the credit system through the semester credit hours. Here a student earns one credit by attending one fifty minute period of lecture of class instruction, and during two-three hours of home study, field or laboratory practical work - each week throughout the semester. Semester credit hour allows flexibility to the student in terms of entering courses of study through the provision of pre-requisite courses and introductory courses in case of new entrants to the course. In total, credit system permits a student to cover a wider range of subjects; The selection of the courses under this system is done with the help of the

course coordinator according to the needs and abilities of the student. The course coordinator is known as the adviser too. The advisor becomes responsible for conducting the course, coordinating the work with the other members of the faculty, in holding tests and assignments etc. Course coordinator can interfere in the indiscriminate award of high or low marks to the students. With the provision of the credit courses, the flexibility characteristics of the semester system is to a great extent ensured. The credits assigned for the major or minor courses, however, differ from university to university.

#### Methods of Teaching

The semester system in education means a self-contained instructional period, the term instructional period covers the course formulation, teaching and evaluation. In the semester system, the teacher assumes a new role with regard to teaching and evaluation. The teacher can make his teaching effective through the adoption of different techniques. Like any developed educational system semester also emphasises the close link between the objectives of teaching a course and testing the achievement of objectives in the students. In any teaching-learning situation teaching method becomes a particular way of occurrence of

teaching behaviours. In selecting the suitable teaching method, the teacher has to play the expert's role because the whole situation is a complex involving the teacher, pupils, and available resources. Semester system being an innovation in itself remains open to be restructured in terms of modifying its components so as to work effectively. Under the semester system the teachers can play the role of a technician by introducing new methods of teaching which can very often be fitted into the system. Effective teaching with alternative methods can hold the key to the prevention in deterioration of academic standards of colleges and universities. Many alternative methods are available for adoption under the semester system and the selection of suitable teaching methods depends upon the teacher who makes a judicious selection from a wide range of teaching methods so as to maximise the attainment of objectives. There are different teaching methods which can be applicable within the semester system like lecture, discussion, home assignment, field work, project work, programmed learning, team-teaching etc.

No doubt, the above mentioned methods of teaching also go well with other systems of education, but looking at the various demands of the semester system all the above methods

seem to be equally applicable to this system too. The different methods of teaching have important role in the semester system, because the evaluation is internal and the teacher is free from the rigid demands of the external examination. He is also free to assess the performance of students through other devices like continuous assessment, student's performance in seminars, assignments etc. Hence this freedom may motivate a teacher to select alternative teaching methods for the realization of his teaching objectives.

Lecture : Since a long time lecture has been considered as the only vehicle to impart knowledge to the students. The lecture method brings one member of the staff into contact with a large number of students of a class. In spite of the fact that the lecture method has been in vogue in educational institutions since long, the methods to judge its effectiveness have not yet been evolved. To help in the attainment of the aims and objectives of the <sup>system</sup> semester, lecture method can be used with some modifications because the method must be matched with the feature of the system. Its use should be judicious and well planned. A lecture should not be the sole method of teaching but other progressive methods should also be associated with

the lecture method like discussions, programmed learning, team teaching, assignments, project work, etc. etc.

Discussion : Discussion is a broad term under which the tutorial and the seminar are also included. Discussion is a method where groups of students sit together and discuss their academic problems and issues. The teaching by discussion is beneficial only when it can be matched by a corresponding increase in the amount of private study done by the students, which makes them to prepare any essay or written work for criticism and discussion. Semester system emphasises the role of self study by the pupil to develop critical thinking and problem solving. Here discussion helps to clarify the confusions and difficulties which arise out of the instruction. It is true that the discussion method prevails in our institutions but still it needs some care in organisation in order to cope with the characteristic of the semester system.

- (i) Discussion needs a small group of students with teachers.
- (ii) The topic for discussion should be known by the particular group of students.
- (iii) The presentation of the problem should be in a formal controlled manner by the teachers with questions and answers.

- (iv) The discussion should be informal and voluntary by the students.
- (v) The discussion should be in purposeful and structured and the points of discussion should be very clear to the students at the very outset.

Thus, discussion in various forms namely tutorial, seminar can be effectively adopted as instructional techniques under the semester system, Tutorials and seminars though similar in nature have some points of differences.

By tutorial is meant, a discussion period at which not more than four students are present and which is a systematic series of programmes stretching over a suitable period of time by the same teacher. It can be used for instructional purposes. The main aim of the tutorials is to emphasise on the thinking and learning of the individual student.

By seminar is meant, a discussion which may be occasional group meetings, not necessarily in series, or not necessarily defining a particular content. Seminar is always topic centred. A paper is initially presented and the paper constitutes the basis for further open discussion. Seminar has an important place in any educational system.

In the semester system, tutorial and seminar play an important role because these can be used for the continuous



internal evaluation.

Programmed Learning : Programmed learning is a form of teaching where the whole learning process is programmed in a particular sequence of small items of written information. In the terminology of the subject the complete series is called 'programmes' and the items as frames. The entire content with regard to a topic of instruction is presented through frames each of which raises a question to be answered by the learners. Each student has to reply the questions by filling the blanks or direct response to the frame, provision is made to check whether the learner has grasped what has been presented by providing immediate feedback. Programmed learning and discussion if combined, becomes an effective method of learning. Programmed learning may also be used in conjunction with laboratory experiment, demonstration, field trips etc. Although the method has certain difficulties like non-availability of adequate programmes, utilisation of a great period of pupils' study time to work with lengthy programmes, yet it has its own advantages namely, provision of opportunities for individual differences in learning pace, immediate knowledge of results, assurance of logical sequence in the treatment of subject-matter etc. Under the semester system which has

the characteristic of developing independent study habits in learners, programmed instruction offers rich potential.

Team Teaching : The method offers opportunity for more than one teacher to come in contact with the same group of learners either during the same study period or in different study periods. Team teaching, from the point of view of the learners, promotes an understanding of related concepts or subjects of study in an integrated fashion so that the concept becomes more meaningful. From the point of view of the profession, a conducive professional harmony would prevail through team work. Under the semester system, team-teaching has rich potential if similar courses of study are introduced for each semester so that integration of related knowledge takes place and learning is no longer piecemeal.

Project Work : The main emphasis of project work is on learning by doing. Project teaches a student to do something towards a purposeful end resulting in a constructive outcome. It is a planned activity guided by some experts. Project may be individual or group. It contributes to the development of both the cognitive and affective attributes of the students. At present, mostly the agricultural and technological institutes have their own projects for the

students either in the individual or in group form. Under the semester system too, project work may be assigned either for each semester, separately or over a longer span of the semester.

Practical Work : It is a necessity in any discipline to promote the application of theoretical ideas developed in formal instructional situations in the classroom. More commonly it is a built-in aspect in the sciences. It is like this : After the demonstration of certain principles students go for the solving of some problems through practical work sessions. These practicals mostly are laboratory practicals. The teacher is very much associated with the students in experiments and supervision. No system of education can deny the importance of practicals. Therefore, under the semester system also the importance of laboratory practical is no less significant.

Assignments : The semester system encourages the students to apply themselves more assiduously to their studies and work, therefore, the assignments are given to students to get sufficient practice in consistently engaging themselves in constructive academic work. Assignments may involve work to be carried out in class, home, library or laboratory. After awarding marks or grades usually they are

returned to the students and then discussed with the individual students. Assignments too have the potential of developing certain attributes, particularly those of responsibility and self-study skills.

Field-Work : Field work is instruction outside the classroom. It can be arranged at any place according to the concept which is in focus of teaching, for example - rock formation, plants, animals, works of art, public museum, farm etc. can be studied through field work effectively. The field work is a planned teaching advised by the course teacher. To derive maximum benefit through the organisation of field work for academic purposes, the learners should be initially told the purpose of the field-work and relevant guidelines from the point of view of concepts to be developed. The field work should be followed by a discussion wherein relevant points of observation could be discussed.

#### Evaluation

Examination is an integral part of any educational system. It is evolved and designed to assess the achievements of the students under the courses of study that they pursue and thereby provide feedback to both teachers and learners with regard to the attainment of objectives. On the basis of the feedback, appropriate

modifications in the teaching - learning process may be affected. Semester system is a step in the positive direction taken to improve upon the out moded system of examination. The new system of examination under semester system no doubt ensures improvement in the indices of validity and reliability by being more concerned with the components of the total process of evaluation namely, its design, development and management. The traditional system of education involves holding of only annual examination, placing excessive emphasis on a single assessment mainly through essay type questions. This traditional method of examination, as reports indicate, could not serve the purpose of education and has generated quite a good deal of dissatisfaction among the students. The semester system is an attempt to reform examination system alongwith the syllabus. The actual idea of the semester system is to develop the student to the maximum of his potential and to test him thoroughly to indicate his growth and attainments thereof. The semester system measures the students' achievement continuously in a shorter period of time. In other words, formative evaluation is used under semester system wherein the academic year is divided into two semesters. Thus, semester system appears to be an examination dominated system from the point of testing but actually it is a study dominated system because the teaching

and learning are also inter-related. The continuous assessment of the related aspects is a stimulus for more effective organisation of instructional situations to promote study. One of the main themes of the semester system of education is the continuous and constant evaluation of the students through internal evaluation. Some of the aspects of evaluation are discussed in the following paragraphs :

Internal Assessment : The demand of the university teachers is that the students performance should be tested by the teachers who teaches them rather than by an external agency. Since the teacher knows the abilities and skills of his students in a better way through his constant contact in the teaching learning process and he is in a better position to assess his students. Internal system is an answer to this important academic demand. The purpose of the internal assessment is to test the skills and abilities of the students internally which cannot easily be tested through the written examination held at the end of the year. The important characteristics of the American semester system is the internal assessment. There, the teacher is engaged both in teaching and in evaluating the student constantly and simultaneously. In the Indian semester system internal assessment has also become an important aspect. Already many

agricultural, technological and other universities have introduced the semester system with internal assessment. Internal assessment demands structural changes and organisation of the whole courses in order to work in an effective manner. Internal assessment under the semester system is a complex action wherein the ability of students are to be judged from their performance or home study, field work, project work, participation in seminars, tutorials and on tests. In continuous internal assessment, syllabus dominated lectures emphasising memory testing hardly find any place. Semester encourages the students to go into depth of their studies involvement in persistent academic work. Continuous assessment needs the records kept by the teacher. Continuous internal assessment thereby promotes a close relationship between the teachers and the students both while making the assessment and in providing feedback. In this way, the continuously internal assessment brings the teaching, learning and testing to operate in a unified and coordinated manner. In the implementation of the continuous internal assessment, the first step is to plan the entire system of instruction and evaluation, so that instructional experiences involving tests, tutorials, assignment, project, seminar, discussion and quiz etc. are suitably organised and systematically evaluated. Continuous internal assessment is an important step in the semester system and with some programmes it will be highly useful for the

integration of teaching, learning and evaluation. The teachers should be encouraged and helped to prepare and use new tests of their own. It depends on the objectives of instruction. On the other hand, it requires the moral and psychological maturity of the teachers. Internal assessment needs an ideal teacher - student ratio, which is the aim of the semester system. Therefore, the continuous internal assessment goes with the semester system.

Grading System : In order to assess the quality of a student's performance, the system of grading appears to be scientific and uniform for the universities. Grading is in vogue in a number of universities in India in place of the marking which is on a 101 point scale. For a long time, Indian universities have the practice of assigning numerical marks to answer scripts on 101 units of measurement. This 101 is the range from 0 to 100 under the system where a candidate's '60' numerical mark was considered superior to one whose numerical mark was 59. This absolute system of making<sup>r</sup> is based on the fact that a student who is supposed to have learned everything of the prescribed course would be given 100 and who has learned nothing would be given '0'. Others would be given marks between 0 and 100 depending upon their levels of learning. The practice of assigning numerical marks to answer scripts on 101 point scale suffer from certain weaknesses.



First and foremost weakness of these marks is that they are raw scores; there is ample evidence to show that these are wide variations in the marks when they are awarded by different persons or by the same person at different times. Because of these inter individual and intra-individual variations in making, and comparing students performance would be highly erroneous. Such comparisons would have possible if the marks were 'true' which they are not. Comparison of student performance becomes still more unreal when the marks in different subjects are straightway combined. After examining all the defects of the numerical marking system, some educationists and the University Grants Commission felt the need to change the evaluation procedure. The grade system which has the necessary flexibility is an alternative to the marking system.

The University Grants Commission suggested a seven-point scale for grading because this would keep evaluation within the reasonable limits of confidence. The grades may be indicated by the letters O, A, B, C, D, E and F where O is outstanding or excellent, A - very good, B - good, C - average, D - fair, E - poor and F - very poor ( fail ). The achievement of the students are graded by placing each

individual in any one of the categories and his achievement will be denoted by an appropriate letter. Grades can be converted to the grade points. The present system of evaluation concentrates more on the aggregate weightage of marks or points derived through subjective procedures. An overall grade can be awarded, the grades in individual courses may be weighted according to the credit hours of the courses concerned. For example, if the grades are  $g_1, g_2, g_3$ , etc. and credits for courses are  $C_1, C_2, C_3$  etc., the average grade would be :

$$\frac{g_1 C_1 + g_2 C_2 + g_3 C_3}{C_1 + C_2 + C_3}$$

If these grade point average goes well with the semester system, then the institutions can opt for it, mainly because, under the semester system the examination is not an end of studies but only an instrument to teach and check how far the students have attained objectives in their courses of studies. The grading system is supposed to be a more uniform and reliable means for this purpose. It makes the evaluation scientific - if implemented properly. Grading ensures -

- (i) a greater comparability among disciplines and within the disciplines,
- (ii) greater internal coherence in the choice of subjects by the students,
- (iii) greater mobility of students from one university to another university.

Question Bank : The semester system includes improved methods of assessing student performances. It would accommodate all the innovations which may improve the system. A question bank, if included under the semester system, can become an effective tool of assessment. It evaluates the programme in a different way. The idea of question bank is rather new to many Indian universities but in advanced countries like the U.S.A. and the U.S.S.R., organising and establishing 'Question Banks' by the teachers under the supervision of the universities and educational authorities have become part and parcel of the teaching - learning process. The concept of question bank has been evolved to eliminate defects of setting question papers in the present system of university examinations. It is to ensure in maintaining uniformity of standard in the question papers. Question bank means a large collection of scientifically developed questions on different portions of the prescribed syllabus covering all the instructional objectives to be

achieved. The questions are generally set by the teachers concerned. The questions are organised according to units and objectives. Therefore, one has to look at the question bank as an important means of bringing about necessary changes in the syllabus and close correspondence between the syllabus, its objectives and the question papers. There must be a variety of questions / items in the question bank. Questions included in the bank may consist of (i) simple question (ii) completion (iii) short answer (iv) essay (v) problem solving (vi) multiple (vii) matching etc. The appropriateness of the question items depends upon the validity, reliability, relationship with syllabus and teaching objectives, discriminating power and the difficulty value. About the selection of the questions, every university is supposed to have their own moderation board where the questions would be kept under constant review. Moreover, the University Grants Commission suggests to set 25% of the questions from outside the question banks.

The concept of question bank is particularly relevant in the context of internal assessment in the affiliated type of universities to maintain the unity in working patterns of the affiliating colleges. It goes well with the semester system but the setting up of a question bank can successfully

materialise only by the sincere and active cooperation of the learned teachers, university authorities, University Grants Commission and the State government.

It is, thus clear that the semester system, which in the strict terminological sense, merely implies the division of the academic year into two parts, has come to be associated with the flexibility of the courses, credit courses, alternative methods of teaching, continuous internal assessment, grading and question bank.

From the discussion in the chapter it becomes obvious from the experiences of Indian and foreign universities that the semester system has certain advantages which have impelled some of the universities to adopt the pattern. The reason for the adoption of semester system, as an innovation by the Indian universities are many. Some of the reasons for its implementation may be on account of the following factors :

(1) The semester system reduces the evil effects of a single terminal examination by having two or more examinations in each semester. In a year, under the semester system, the frequency of evaluation of the students performance increases.

experience of the developed countries, which have evolved the semester system are also available and pertinent. It appears necessary that a critical study be made to find out the effectiveness of the semester system. The findings will help in understanding the different aspects of the semester system. The authorities and teachers of the universities will be in a position to make a judicious and a conscious choice to opt for a particular system. Hence this study has been undertaken.

The rationale for the study having been established, the methodology to be employed for the problem under consideration was planned and executed.

Details regarding these are presented in subsequent chapters. The scheme of chapterisation in the present report is presented here.

#### Scheme of Chapterisation

In the first chapter the meaning of the semester with its historical background, functioning of the semester system in India, its associated aspects have been thoroughly discussed.

The second chapter presents a review of related literature and studies which have some implications on the present study.

The third chapter discusses the methodology of the present study. The statement of the problem, definition of important terms, objectives of the study, delimitations, sample, tools, analysis and interpretation are included in the methodology chapter.

Chapter four deals with the analysis and interpretation of the data.

Chapter five ends with the summary, <sup>findings</sup> conclusion and suggestions for further researches in the area.

The bibliography is then provided.

In the Appendices, tools of the study, and the formulas used have been included.

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