CHAPTER - I

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The paramount importance and centrality of the phenomenon of learning can not be side tracked/written off in this age of information. Language, culture, technology, the organisation of societies, these are all products of the human being's ability to learn. In other words, virtually everything the mature human organism does, or is capable of doing can be linked to learning. Learning has broadly been conceived as a process that results in a relatively permanent change in behaviour as a function of practice/past experience. Several theories have been formulated to explain the intricate underlying processes and character of human learning. However, none of these has been 'successful' in the sense of having wide appeal and theoretical generality. Underwood (1966) has rightly stated, "sufficient to say that the person who originates a theory that works out to almost everyone's satisfaction will be in line for an award in psychology equivalent to the nobel prize".

1.1 Learning Paradigms:

Historically, "associationistic" concepts served as substitutes for more detailed learning theories and research. Most of the learning theorists (Thorndike, Pavlov, Hull, Miller and Dollard, Guthrie, Skinner, Mowrer,
Estes and so on) under this tradition advocated a mechanistic view of the learning process in which a stimulus automatically elicited behaviour. Subjects were thought as physical machines which would display an invariant relation between input (Stimulus) and output (Response) variables. In such schemes, learning tended to be interpreted as a function of what the environment did rather than what the subject already knew or was interested in, or thought and felt about the learning experience or the material to be learned.

Psychologists who espoused a cognitive approach to learning had also been interested in stimulus and response conditions, but they used them to infer conclusions about the internal states of the learner that mediated change in behaviour. In other words, cognitivists also used behaviour as their data base for understanding learning. But in contrast to the S-R theorists, they believed that behaviour was not the central subject matter but simply evidence for the operation of mental processes (Neisser, 1967).

One main aspect of cognitive psychology that is readily understandable to educators and practitioners and directly relevant for understanding the phenomenon of student learning at tertiary level is information-processing. The information processing approach formalises the operation of cognition by examining the succession of
events from the moment of stimulation to the production of response outcome. Many cognitive psychologists have used this framework to conceptualize their key problems: how organisms collect (perception), code (learning), store (memory), interpret (reasoning), and express (language and other behaviour) information. Memory consists of three distinct stages: a sensory register (which holds incoming perceptions only briefly), a short-term storage (which holds a limited amount of information for up to 20 seconds) and a long-term storage (which holds information for an indefinite period). Information can be held in store for longer periods by internal repetition/rehearsal. Different stages of memory can be shown in Fig. 1.

Figure-1: An Information-Processing Model of Memory
[Based on Atkinson and Shiffrin, 1968]

Many studies have examined the factors which determine whether or not particular kinds of information will be stored and whether or not it can be retrieved. The
generalized finding was that the information which is subjected to deep processing is more likely to be remembered at a later point of time.

Craik and Lockhart (1972), the pioneers of levels of processing approach to memory reported that in diverse incidental learning experiments subjects showed better recall and recognition memory for a word that required a deeper level of processing, during the study trial. Thus, having the subject categorized word semantically produced higher delayed recall than having categorized its superficial visual properties. Craik and Lockhart (1972) also showed that the repetition of an item perse did not improve the memory of it so long as the repetition continued at the same depth of processing. They distinguished two forms of rehearsal. Maintenance rehearsal denoted superficial recycling of the material and did not promote long term memory (Woodward et al, 1973; Craik and Watkins, 1973). Conversely, elaborative rehearsal promoted long term memory by connecting the material to be learned into existing associative structures in memory via sentences or images (Craik and Tulving, 1975). These findings have a direct bearing on educational practices.

During the last two decades or so, there has been a paradigm shift resulting in wide recognition of cognitive psychology breaking the hegemony of neo-behaviorism in human
learning (McKeachie, 1976; Lachman et al., 1979; Greeno, 1980; Cloete, 1984). The most salient feature within this paradigm is related to the striking change in researchers' conception of the roles assumed by students in the learning act (Weinstein and Mayer, 1985). Instead of viewing learners as passive recipients, learners/students are seen as active information processors, interpreters and synthesizers etc. Such a view presupposed that learners use a variety of different study or learning strategies to select, encode, store and retrieve information. Implicit in this model has been the notion that students can take more responsibility for their own learning by creating, implementing and monitoring strategies, thoughts and behaviours in general.

Studies report that the degree of awareness of strategies use generally can vary (Derry and Murphy, 1986). Young children often do not know about the kind of strategies they use and experts automatically use better strategies than novices right from the first contact with the problem. McKeachie (1987) recommended that strategies should be consciously taught first in order to automatize their use by practice later on. One aspect of student learning within the information processing paradigm is called strategies of learning or approaches to learning.
1.2 Approaches to Learning

The earlier researches on student learning emphasized either context/content dependent learning strategies or person dependent learning styles. Since Rousseau developed the view that active involvement of the individual was a crucial element in learning, there has been no shortage of educators anxious to stress the importance of the strategies adopted by individual students. Direct empirical evidence concerning the effects of learner's strategies was provided in a number of investigations by Bartlett (1932) and his students and by research of Allport and Postman (1947) in their study of rumours. Some research studies showed that each student learns in ways that are different from his or her peers (Passow, 1964; Taba and Elzey, 1964; Robert and Gagne, 1967; Rosenberg, 1968).

The concept of approaches to learning has been used to refer both to personality characteristics and situation-induced reactions. Individuals are predisposed to adopt one approach in preference to another while certain situations can also encourage or inhibit particular approaches. There have been many studies in which students have given reasons for the way they study. Studies by Becker et al. (1968) and Snyder (1971) presented vivid examples of students in American Universities, talking about their studying and why they believed they worked the way they do. Similarly,
students in British universities (Parlett et al, 1976) described how they defined their own study tasks. It has been argued on the basis of such researches that some of the components of the processes of learning underlie students explanations.

In trying to unravel the processes of student learning in higher education, the researchers have been often confronted with terminological ambiguities and difficulties, because none of the frequently used terms, such as style, strategy, process have been rigorously defined. In fact, there are hardly any universally agreed definitions. Floyd (1976) found little to distinguish between 'learning style'; learning strategy and 'cognitive-style'. However, researchers made distinction by referring style to the relatively stable characteristic predisposed ways; strategy, to the cognitive skills which are used according to the perceived demands of the task; and process, to the degree of variations in the focus of attention or encoding of the learning material(s).

In the context of everyday studying, the ways in which students come to terms with studying have been examined by Marton & Saljo (1976,a). In an experimental situation, students had been asked to introspect about their experience of studying/reading an academic text. Two different types of descriptions emerged from student's reports. Marton and Saljo had described these types as
Deep-level and surface-level processing respectively. These descriptions are found rooted in levels of processing model of memory developed by Craik and Lockhart.

Depth of processing strongly implies meaningfulness in learning material and surface level processing implies picking up the epiphenomena of the content rather than its latent or potential meaning. Marton and Saljo have equated the term 'process' and 'strategy' in the sense that the process of learning is exhibited in what the student does in order to learn something.

The distinctive differences in the processes of learning have been observed by Pask (1976). He made it clear by giving a variety of academic tasks to students that even when understanding was the required outcome, students still adopted different strategies. Some adopted a holistic strategy and others a serialist strategy. He argued that behind specific strategies lie distinct learning styles. Some students show a predisposition to adopt holistic strategy even where a task required serialist process. This relatively consistent style has been described as comprehension learning with an emphasis on broad description building. Students who showed a preference for serialist strategy utilise operation learning and rely on building up meaning from the detail. Students who are consistently able to adopt a strategy appropriate to the
task and to integrate what they learn into their own personal yet valid interpretations, exhibit a versatile style of learning. Versatile style of learning is found to have strong parallels (in terms of outcome) with deep level processing. Svensson (1977) distinguished between holistic and atomistic approaches, parallel to deep-level and surface-level processing. He collected detailed information from a sample of 30 first year education students who took part in a learning experiment and reported about their approaches to study. The differences in cognitive approach provided a functional explanation of the performance in examination. It seemed that a holistic learning process was a necessary prerequisite for the acquisition of a deep level of understanding, whereas an atomistic learning process usually led to surface level of understanding.

By using the learning materials different from the text used in the previous studies (Marton, Saljo, Dahlgren, Svensson), the same two levels of processing (deep and surface) were found when the transcribed interviews were analysed and categorised (Fransssson, 1977). Schmeck et al. (1977) also used levels of processing construct, in line with Marton and Saljo as a way of conceptualizing individual differences in student's learning styles.

Biggs (1978,1979) in Australia evolved a model of the study process domain for university students. The model
is based on the assumption that by the time students reach tertiary level, they have developed reasonably stable motives and strategies for going about their learning. In his Study Process Questionnaire [SPQ], Biggs has distinguished three dimensions of study processes—utilising or reproducing, internalising and achieving respectively. Each of these dimensions has a motivational and a strategical component. Utilizing dimension included instrumental motive and reproducing strategy. Internalizing dimension included intrinsic motive and meaning strategy. Similarly, achieving dimension consisted of achievement motive and organised strategy. Biggs further argued that while the above three dimensions may not fully account for the whole study process domain, they seem to offer parsimonious and theoretically coherent model for conceptualizing the more important ways in which students may feel about and behave towards their own study (Biggs, 1979).

Studies conducted in British universities (Laurillard, 1979 and Ramsden 1979) also confirmed the dichotomies in student learning approaches. Their results were somewhat similar to that of Biggs's, excepting little difference in the use of terminology. Entwistle et al. (1979) used the term 'approach' to describe differences in ways of tackling a learning task or problem. They were of the view that in attempting to measure approaches to
learning, there was a standing assumption that students will exhibit sufficient consistency in intentions and processes across broadly similar academic tasks.

Students adopting the surface approach are found to be predominantly motivated by a concern to complete the course or by a fear of failure. They intend to fulfill assessment requirements by the reproduction of factual material. The process they use to achieve this, is rote learning and the outcome is a superficial level of understanding. Quite contrarily, students adopting a deep approach are motivated by an interest in the subject matter and/or by its vocational relevance. Their intention is to reach at proper understanding. The process they use is operation learning which involves a logical step-by-step approach and comprehension learning in which the focus is on the outline of ideas and the inter-connections. Students exhibiting the strategic approach may be seen to use processes which may quite frequently resemble those used by both the surface and deep learner. The fundamental difference lies in their motivation and intentions. Such students are motivated by the need to achieve high marks/grades and to compete with others or excel others. Their intention is to be successful by whatever means. Entwistle et al. (1979) and Biggs (1979) have reported that student's distinctive approaches or orientations to study can be successfully measured by using inventories.
(Approaches to Studying Inventory, Study Process Questionnaire etc.) that show a good deal of consistency in approaches. Students' approaches to learning may be shown schematically as in Fig. 2.

Fig-2: Schematic Representation of Students' Approaches to Learning [Adapted from Newble and Entwistle, 1986]
Studies (Laurillard, 1979; Ramsden, 1979) have shown that approaches to learning vary to some extent from department to department and from task to task and at times, students also vary their strategies across different types of tasks. At the broadest level it has been shown that approaches to learning vary between disciplines. Studies using the Entwistle's and Biggs's inventories show that science students tend to score higher by using surface approach than arts students while the reverse is the case of deep approach (Ramsden and Entwistle, 1981; Watkins and Hattie, 1981; Biggs and Kirby, 1983). Watkins and Hattie (1982) in a study of student's learning process at tertiary level showed that approaches to learning depended on both contextual and personological factors. They also found in a longitudinal study of university students that the meaning and reproducing orientation scores declined with seniority (Watkins and Hattie, 1983).

Methodologically it seemed necessary to accommodate both consistency and variability in any scheme that seeks to describe the ways in which students approach their learning. Longeot (1983) strongly emphasised the essential complementarity of the contrasting descriptions of processes, which depend crucially on the nature and content of the task and the relatively consistent preferences for particular ways of learning.
The concept of approaches to learning, with appropriate variations in the definition of categories, can be used to describe learning across arts and social sciences (Entwistle and Ramsden, 1983; Van Rossum and Schenk, 1984); and across different types of learning involved in lecture (Hodgson, 1984); essay writing (Hounsell, 1984); and problem-solving (Laurillard, 1984). Close links are reported between approaches to learning and teaching method, task requirements, assessment procedures, dependency and time constraints (Selmes, 1986).

Another theoretical perspective emerging from the organisational studies that seemed to have relevance for educational setting focussed on the content and context factors of motivation. The two-factor theory of Herzberg et al. (1959) indicated that content factors such as need for achievement, recognition, work itself, responsibility, advancement and psychological growth contributed to satisfaction in the learning situation; whereas context factors like working conditions, salary, interpersonal relationships, college policies and practices, economic security, status and personal life contributed to dissatisfaction. Herzberg called content factors as motivators and context factors as hygiene factors.

In a later study, Bayer (1976) investigated the applicability of Herzberg's two-factor theory to study
student's satisfaction. He observed satisfaction to be the function of correspondence between reinforcer system of work environment (context factors) and individual needs (content factors). Results indicated that non-drop outs were more satisfied followed by non-academic drop outs and academic drop outs. Non-drop outs differed from drop outs on recognition and quality of education. The students were however, less satisfied with academic offerings, requirements of university, faculty and staff competence. The context factors contributed more to dissatisfaction. Deepak (1980) examined the effects of content, context and personal factors on academic satisfaction and performance of college students. Factors included under content dimension were personal growth, achievement, recognition, intellectual satisfaction, personal interest and education itself. Context factors included college climate, college policies and practices, interpersonal relationship between teachers and students, status and job opportunities. Demographic characteristics of students, achievement values and personality orientation were identified as personal factors. Results indicated that content, context and personal factors together predicted academic satisfaction ($R^2 = .36$) and student performance ($R^2 = .18$) to a good extent.

The above discussion so far has focused on researches on student learning in formal educational system. Learning visualised as an individual activity and learning
strategies are closely linked with the type of educational system. It is observed that the examination procedure of a particular educational system may in fact, be encouraging those ineffective learning strategies which led the students to rely on the surface structure of language and the regurgitation of facts rather than on ways of understanding important ideas and relationships (Entwistle and Ramsden 1983). Masters (1987) reported that some assessments procedures in schools and colleges, although supposed to assess higher-level learning outcome such as 'comprehension' and 'application', often require little more than the ability to recall a formula and to make appropriate substitution to arrive at a correct answer. Differences in types of educational systems could change the expected relationships of personal, content and contextual variables and approaches to learning with academic performance.

1.3 The Distance Education System: Open Universities

In the context of unprecedented explosion of knowledge, modern education has become a process of learning from real life and from the pulsating dynamic society around us. The education system thus need not be confined to formal structures and institutions. The Education Commission Report (1964-66) pointed out:
"It is necessary to abandon the present policy of placing an almost exclusive reliance on full time education and the two alternative channels of part time and own time education should be developed on a larger scale at every stage and in every sector of education and should be given the same status as full time education".

The UNESCO report (1972) on 'learning to be' recommended that education should be dispersed and acquired through a multiplicity of means. The important thing is not the path an individual has followed, but what he has learned or acquired.

With changes in the concept, methodology and techniques, education is no longer the privilege of an elite or the concomitant of a particular age group. It is reaching out to embrace the whole of society and encompass the entire life span of individual. This dynamic expansion of knowledge has led to the concept of life long learning for the individual and the evolution of institutions of open or distance education. The relationship of distance education to other forms of indirect education may be
shown as in the figure-3.

Figure: 3 Relationship of Distance Education to Other Forms of Indirect Education [Peters, 1973].

There is an extensive overlap between the use of the term 'open education' and 'distance education'. Manwaring (1986) believed open learning to be an umbrella term covering various different methods and approaches such as distance learning, flexi study, learning by appointment, resource-based training, negotiation of curricula and study circles. There are various types of distance learning institutions. Open university is one of them. It has off
campus programmes and is not confined to formal structures. Now, throughout the world over 450 specialized distance learning institutions exist for higher education alone (Smith 1987). These embrace various levels and types of education and have enrollments of millions of students. The Chinese Radio and Television University enrolls over 1,00,000 students.

The concept of open university is somewhat recent in India. The universities of Mysore; Madurai Kamraj and SNDT Women's University in Bombay introduced on the experimental basis the open university learning system in the past few years. The open university learning system of these three universities has been patterned somewhat on the British Open Universtiit system. The first open university of its kind in India however, has been established in 1982. Unlike the above three open universities which function within the framework of their respective universities, the Andhra Pradesh Open University is an autonomous, full-fledged institution designed for distance teaching. Later on, in September, 1985, Indira Gandhi National Open University has been set up by an Act of the Parliament in Delhi. It is a national university (IGNOU), which means that anybody living anywhere in India can become a student at this university. IGNOU is expected to serve as an instrument of democratising education. It has been set up with the following objectives
in view:

(a) To strengthen and diversify the degree, diploma and certificate courses related to the needs of employment and necessary for building the economy of the country on the basis of development of its natural and human resources.

(b) To provide opportunities of higher education to a large segment of the population, the disadvantaged groups in particular, thereby promoting the educational well-being of the community in general.

(c) To encourage the open university and distance education systems in the educational pattern of the country and for determining the standards in such systems.

(d) To promote the acquisition of knowledge in a rapidly developing and changing society and continually offering opportunities for upgrading knowledge and skills.

(e) To provide suitable post-graduate courses of study and promoting research.

(f) To promote national integration and integrated development of the human personality through its policies and programmes.

In 1987, two other open universities have been set up namely: Bihar Open University and Rajasthan Open University respectively. The Challenge of Education (1985)
document pointed out that the open university system augments opportunities for higher education, ensures access, is cost effective and promotes a flexible and innovative system of education.

The features that distinguish an open university from a traditional university are believed to be related to the learning effectiveness of students in two systems in different ways. Cropley and Kahl (1983) focussed on the comparative aspects and stressed different psychological assumptions underlying traditional face to face and open (distance) education system. They also analysed the consequences of these for organisation, motivation, learning, curriculum, evaluation and feedback. A brief summary of their findings may be enumerated here.

Face-to-face education offers:
1. Immediate personal contact between learner and teacher.
2. Teacher can readily adapt to learner's immediate behaviour.
3. Learner's environment is structured.
4. Personal relationships can moderate learning.
5. Direct control of learner by the teacher is possible.
6. Learning materials can be of low didactic standard.
7. Authority-oriented system in which learner experiences have limited degree of freedom.
8. Communication need not be planned to the last detail.
9. Information is provided by a mixture of cues (personal, content, context-related).
10. A high degree of evaluation and feedback from the teacher is possible.
11. Internal motivation, self direction, self evaluation, planning etc. can be low.
12. Willingness and ability of the learner to work without direct supervision may be low.

In contrast, distance education offers:
1. Contact through communication media, print etc.
2. Teacher's adoption to learners' immediate behaviour is delayed.
3. Learner's environment is less structured or semi-structured.
4. Personal relationships are of little importance.
5. Teacher influence is indirect.
6. Learning materials must be of high didactic standard (well organised, clear).
7. Learner experiences more freedom in learning.
8. Communication is usually highly planned.
9. Information is mainly provided by content and organisation.
10. Low degree of evaluation and feedback from the teacher is possible.
11. Internal motivation, self directions, self evaluation,
planning, ability etc. must be high.

12. Willingness of the learner to work without direct supervision must be high.

Overview:

The above discussion reflected the following dominant points:

• That learning consists of learner's awareness of the learning process, content or subject matter and demand characteristics of the context.

• That approaches to learning have some explanatory value in terms of understanding why students react differently to basically the same learning situation.

• That approaches to learning may be related to one's academic performance and thus play an important role in conceptualizing learning effectiveness.

• That approaches to learning are responsive to the learner, content and context related characteristics embedded deeply in a particular education system.

• That institutional variations could be related to differences on learner, content and context dimensions.

• That academic performance could be related to differences in terms of learner, content and context characteristics.
1.4 Need and Relevance of the Study:

The above summary seems to dictate the need and relevance of present study. The relevance of the proposed study emanated from the perspective of student learning in higher education, viz., effective management of human and physical resources or inputs, the induced changes and the relative permanence of these from learner's perspective. The development of personal knowledge and critical thinking are an essential outcome of higher education. The evidence is also lacking in the direction of identifying and measuring various determinants of approaches to learning of students in two different university set up. No systematic study designed to relate the approaches to learning to academic performance of students undergoing management training in two strikingly different university system could be traced in the literature. This research thus proposed to examine the learner, content and context characteristics and their relationships to approaches to learning and academic performance of students in traditional and open universities.

It is hoped that the findings of the study would help in identifying the crucial determinants of approaches to learning adopted by students in two strikingly different education system, and thus help the educators and practitioners to manipulate or modify certain
characteristics of either the course contents or the learning contexts in order to maximize the rate and quality of student learning. Educators can use such knowledge in designing instructional modules, learning packages etc. in creating suitable context of learning, and in carrying out the learning process effectively and so on.

1.5 The Proposed Conceptual Model:

A conceptual model is proposed for use in the present study. The model is based upon the following assumptions:

- That there are certain learner-related characteristics which may influence approaches to learning.
- That there are certain content-related characteristics which may influence approaches to learning.
- That there are certain context-related characteristics which may influence approaches to learning.
- That learner, content and context related characteristics influence approaches to learning on a singular as well as on an interactive basis.
- That learner, content and context related characteristics in their interaction with approaches to learning may influence academic performance.
- That approaches to learning may influence academic performance of students in two different institutions.

This may be shown in Fig. 4.
Figure 4: Schematic Representation of the Conceptual Model Used in the Study