UNIT 5 FACTORS AFFECTING LEARNING-I

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5.1 INTRODUCTION

Learning, as we know, can be considered as the process by which skills, attitudes, knowledge and concepts are acquired, understood, applied and extended. All human beings, whether grown ups or children engage in the process of learning, either consciously, sub-consciously or subliminally. It is through learning that their competence and ability to function in their environment get enhanced. It is important to understand that while we learn some ideas and concepts through instruction or teaching, we also learn through our feelings and experiences. Feelings and experiences are a tangible part of our lives and these greatly influence what we learn, how we learn and why we learn.

Learning has been considered partly a cognitive process and partly a social and affective one. It qualifies as a cognitive process because it involves the functions of attention, perception, reasoning, analysis, drawing of conclusions, making interpretations and giving meaning to the observed phenomena. All of these are mental processes which relate to the intellectual functions of the individual. Learning is a social and affective process, as the societal and cultural context in which we function and the feelings and experiences which we have, greatly influence our ideas, concepts, images and understanding of the world. These constitute inner subjective interpretations and represent our own unique, personalized constructions of the specific universe of functioning. Our knowledge, ideas, concepts, attitudes, beliefs and the skills which we acquire are a consequence of these combined processes. You may be wondering why we are discussing the concept of learning, since our concern in this unit is with factors affecting learning. We are doing this to enable you to appreciate the fact that the process of learning involves cognition, feeling, experience and a context. Individuals vary greatly with regard to their ability, capacity and interest in learning. You must have noticed such variations among your friends and students. In any family, children of the same parents differ with respect to what they can learn and how well they can learn. For example, a particular child may be very good at acquiring practical skills such as repairing electrical gadgets, shopping for the household etc., while his brother or sister may in contrast be very poor on these, and good at academic tasks, instead. Even for yourself, you may be perplexed why you can do some tasks well, but not...
others given the same competence level. For example, learning the tunes of songs and even their lyrics is often found to be easier than learning a formula or a poem. Do you ever wonder why this is so? You may have observed that for some people, learning driving or swimming or cooking is achieved easily, while for some others it is a nightmare. Why this happens, what could be the underlying reasons and why individuals differ with respect to how and what they learn, are the key questions addressed in the present unit. To find some answers to these questions, we will try to identify and understand the various factors affecting learning.

5.2 OBJECTIVES

After working through this unit, you should be able to:

• identify the significant factors that affect learning;
• understand the classification system of these factors;
• appreciate the intricate relationship between personal and environmental factors;
• define intelligence and its relationship with learning;
• explain the nature of aptitudes and how these influence learning;
• define goals and interests and explain their relationship with learning; and
• understand the concepts of readiness and maturation and the importance of these in the learning process.

5.3 IDENTIFICATION OF SIGNIFICANT FACTORS

Let us now try to understand some of the significant factors affecting learning. There are some personal factors affecting learning that deal with the innate aspects of an individual and are unique to him/her. These are extremely significant as they influence what the individual can learn, how much time, effort and energy he/she is required to put in and how well he/she is likely to learn. The environmental factors are other factors which mediate the learning process. Research has shown that the following are the key factors that affect learning:

• Intelligence
• Aptitude
• Goals
• Interests
• Readiness & Maturation
• Motivation
• Self Concept
• Attitudes & Values
• Level of Aspiration
• Learning style
• Socio cultural determinants

Each of these factors play a significant role in learning. We will now examine them one by one a little later, in terms of what they mean, how they vary across individuals and how they influence the process of learning.
5.4 CLASSIFICATION OF FACTORS

To understand how we categorise the factors affecting learning, let us begin by considering the following examples:

- Ravi is sixteen years old and wants to please his mother by getting good results in his board examinations. He is so eager to please her, that he spends long hours of concentrated time and energy on his studies. He consciously tries to control other sources of distraction in his life and reduces the time spent on watching television, playing games and chatting with his friends.

- Rita Williams wants to be a famous tennis player. To achieve her goal, she practices tennis whenever she can, even though she gets no encouragement from her family. She makes it a point to watch tennis matches and maintain a good rapport with her sports teacher.

- Yuvraj is a good student, but lately he has been scoring very low marks at school. He is not able to concentrate or pay attention and his class work and home assignments reflect a very poor quality. Sources revealed that his parents fight a lot with each other and are about to get divorced.

- Arti and Kavita are two sisters. Arti is very good at art and craft and can sketch just about anything she sees. Kavita has an ear for music. She knows most songs and can sing them even if she has heard them only once. Both of them spend hours together pursuing their respective interest areas.

- Sayeeda is tall, attractive and has a very good figure. She wants to be a model or an air-hostess and nurtures this secretly as her dream. She is too scared to share her wishes with her family, since she belongs to an orthodox family, where girls at best can pursue teaching as a career. When she tries telling her mother what she wants, she is firmly told that she can only do her B.Ed and can go to the coaching classes for these.

The above cited examples illustrate that learning is a universal phenomenon mediated by a number of factors, both personal and environmental in nature. The dictum “everybody learns” is as true as its corollary, i.e., everybody learns in accordance with his/her unique, individualized blend of personal and environmental factors. For example, in case of Ravi, the desire to please his mother, striving to do well in his board exams and managing his life situations appropriately constitute the key factors which influence him. For Rita Williams, it is her intrinsic desire to be a good tennis player which is paramount. She is not deterred by the lack of family support and continues to make efforts to promote her love for tennis on her own and fulfill her desire to be successful.

In case of Yuvraj, in spite of his innate capacity to study and perform well, his lack of achievement can be attributed to the emotional insecurity stemming from his parents’ divorce. As far as Arti and Kavita are concerned, their special interests and talent in art and music respectively, seem to guide their activities.

For Sayeeda, the home environment and family culture and values determine her professional choice. Her own inner interests, desires and wishes are not to be taken into cognizance.

In all the examples cited, you can find evidence of both personal and environmental factors influencing the process of learning. Learning can thus be defined as a function of the interaction of personal and environmental factors.

\[ L = f (EF \times PF) \]

\[ L = \text{learning}; f = \text{function}; EF = \text{environmental factors}; PF = \text{personal factors}. \]
Personal factors are the intra individual factors like motivation, interests, abilities etc which predispose an individual towards learning as in the case of Rita Williams, Arti and Kavita. Environmental factors on the other hand, are those contextual factors which highlight the role of the environment in learning, such as the socio-emotional, societal and cultural factors as seen in the case of Yuvraj and Sayeeda. Although the two factors represent different categories, they operate in a common system. The environmental factors provide the context within which the personal factors, operate. The learner and the learning process can only be completely understood with reference to the interaction of both environmental and personal factors. This may be diagrammatically represented as follows:

![Diagram](image)

**Fig. 5.1: Factors affecting learning**

### 5.4.1 Intelligence

One of the key factors which affects our ability to learn effectively is intelligence. There are wide variations across individuals and cultures as to what actually constitutes intelligence. Let us take a deeper look at what this statement means by engaging in the following analytical task.

Imagine a classroom in which there are ten students, each with a distinctive characteristic highlighting his/her ability. You have been asked to state which one among them you consider to be the most intelligent and why. How will you proceed in your judgement. The profiles of the ten students given to you are as follows:

- Manisha always comes first in class.
- Zubin is an ace chess player.
- Neha is the most popular girl in her class.
- Ashish can remember statistics about cricket from any time period.
- Mumtaz never loses her cool and remains calm and even tempered even in difficult situations.
- Mark gets always called to arbitrate in peer disputes in his class.
- Zarina can organize any event, even at a short notice.
- Niloufer choreographs dances very well.
- Shrikant is a wizard in mental mathematics.
- Ayesha always gives novel and unique answers to routine questions.

In all probability, you will choose to identify some criteria which define intelligence and then, go case by case to consider who is the most intelligent. You will realize herein however lies your major difficulty of how to select the criteria? How to prioritise their importance? How to assign ranking? In all likelihood, you will conclude that
each student is intelligent in some way or the other, because some ability, competence or skill has been demonstrated by each one of them. Furthermore, this ability has optimised their performance or their existence in many ways. Thus two things may clearly strike you. First that there is no universal definition of the term intelligence. You will begin to realize that many possible definitions coexist. Secondly, it will become apparent to you, that irrespective of what intelligence is, it certainly augments learning, achievement and performance. You are thus likely to conclude that learning is greatly facilitated by intelligence.

To understand this you may like to take a brief look at some of the prominent views which attempt to conceptualize intelligence. The earliest among these was the psychometric tradition beginning with the work of Alfred Binet. This tradition is based on statistical analyses of conventional tests of intelligence, requiring students to show basic vocabulary, mathematical ability, reasoning and other skills. In a broad sense, intelligence is understood as a combination of several specific, component abilities. Binet for instance, suggested three main elements of intelligence: (1) direction, which involves knowing what has to be done and how to do it; 2) adaptation or figuring out how to perform a task and (3) criticism, or the ability to critique one’s own thoughts and actions.

British psychologist Charles Spearman suggested that intelligence can be understood in terms of two dimensions or factors. A single general factor (g factor), general mental ability, which would affect all tasks and activities, and specific factors (s factors) which affect performance in a single discrete area of mental ability, such as vocabulary, mathematics, reasoning etc.

The American psychologist Thurstone, however, argued that a single factor was an inadequate index of intelligence and suggested seven inter-related factors which he called primary mental abilities. According to him learning and performance were the outcome of these seven primary mental abilities which, he labeled as: i) Verbal comprehension, ii) Verbal fluency, iii) Inductive reasoning, (iv) Spatial visualization, (v) Number, (vi) Memory, and (vii) Perceptual speed.

Other approaches to intelligence and learning view them as abilities to process information meaningfully (Sternberg) to adapt to the demands of the environment (Piaget), to construct knowledge based on one’s experiences (constructivism), and to be emotionally well adjusted and secure (Goleman). The conceptualization of intelligence, thus in these different frameworks is much broader and recognizes that children as well as adults can be intelligent in many different ways. The most dominant contemporary view in intelligence which has a marked influence on educational practice is the one proposed by Howard Gardener. He has advanced a theory of multiple intelligences in which there are eight distinct and relatively independent intelligences. Each is a separate system of functioning, although the various systems can interact to produce overall intelligent performance. The eight intelligences are:

- Linguistic intelligence
- Logical – mathematical intelligence
- Spatial intelligence
- Musical intelligence
- Bodily – kinesthetic intelligence
- Interpersonal intelligence
- Intrapersonal intelligence
- Naturalist intelligence
The intelligence on which one is high in terms of manifestation will thus determine what one learns, how well one learns, and also influence the various ways in which one seeks engagement. Thus, irrespective of how we define intelligence, in relating it to learning, there is no doubt that it affects what, when and how we learn. Further, in operational terms, it definitely is a capacity or an ability for problem solving, thinking, reasoning, relating to others, dealing with emotions, developing interests, sense of right and wrong and living in consonance with our environment.

### Check Your Progress 1

Note: Write your answers in the space given below.

Gardener’s Theory specifies eight distinct multiple intelligences, whereas Spearman’s theory specifies just one important general ability and unimportant specific abilities.

1) Which theory appeals to you more and why?

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2) Which theory you think has significant implications for the classroom?

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### 5.4.2 Aptitude

- You must have wondered many times why individuals having the same level of intelligence do not necessarily show the same results when put to the same task or activity. Further, you must have heard persons saying when frustrated, “No matter what I do, I can’t get my sums right”, or “I just can’t learn a foreign language”, or “The cake I bake, never rises”, or “I simply can’t memorise the poem.”

It is obvious from the above that no one finds all activities and tasks easy to master and learn. While some persons are good at languages or maths, some others simply can’t cope with them although they are as bright as their counterparts. Similarly, some persons can learn to cook or play musical instruments with ease, while others struggle to get their recipes right or keep to the tunes and notes. This is because individuals vary greatly in their aptitudes or their specific capacities to do a task well or to profit from specific types of training.

For example, if you are especially adept at assembling a new bicycle or fixing household appliances or gardening, you probably have a natural talent or ability for these activities. You obviously have manual and finger dexterity and scientific reasoning. These are your specific abilities. Likewise, if you are good at drawing, painting and music, you probably have an aptitude for beauty, aesthetics and creative expression.

An aptitude is thus best understood as a stable ability of an individual, that is readily available as a resource, which can be applied to specific tasks requiring this ability, thereby enhancing his/her potential for learning. Different jobs require different skills and their corresponding aptitudes. Recognising this, psychologists have developed many tests for assessing specific aptitudes so as to predict how an individual may
perform on a specific skill. One of the most popularly used tests is the Differential Aptitude Test Battery (DATB) which measures aptitudes like **verbal reasoning, abstract reasoning, numerical ability, mechanical reasoning, spatial ability, language ability** and **clerical speed and accuracy**. These tests help to identify an individual’s aptitudes, and to predict what he/she will learn and do with ease.

The knowledge about various types of aptitudes enables us to economise our efforts and maximise learning. For example, by selecting employees who demonstrate an aptitude for a particular kind of job, an employer is likely to benefit from sending them for advanced skill training. Likewise, teachers encourage students having an aptitude for scholastic ability to strive towards excellence and high achievement by providing them beneficial learning opportunities. Thus, an aptitude is a measure of the probable rate of learning, which results in interest and satisfaction. Aptitudes are often used synonymously with talents and specific abilities, which are actually manifested concepts, judged through performance parameters.

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**Check Your Progress 2**

**Note:** Write your answers in the space given below.

1) In a school setting what do you think about the scope of aptitude testing? (Hints: talent identification, nurturing the abilities that optimize performance, career guidance, goal planning etc.)

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2) “In manpower planning and development and in career counseling knowledge about individuals’ aptitudes is a critical input.”, Analyse giving reasons and examples.

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**5.4.3 Goals**

A **goal** is an **outcome or attainment** that an individual sets and strive to accomplish. Goals motivate people to act in order to reduce the discrepancy between ‘what they are’ and ‘what they want to be’. They can be understood with reference to the vision of the future that each individual constructs for himself. Goals have been understood and classified in various ways. They can be **short-term, long-term or personal** or **societal** in nature and **tangible** or **abstract**. Let us now examine each one of these.

Short term goals are those which seem achievable in the near future. They involve less time as, the required time can be specified and it does not seem inordinate and endless. For a graduate, clearing the B.Ed or Journalism entrance examinations is an example of a short term goal. For an overweight adolescent, losing weight by going on a regulatory diet and exercise schedule is an example of a short term goal.

Long term goals are those which are distant and oriented towards the future. A child’s wish to be a doctor or a teacher for example, are long term goals. For the rural girl, being able to pursue education and a suitable career at the end of it, are long term goals.
Immediate goals are those which can be fulfilled quickly. Resorting to crash dieting to lose weight within a week, is an example of an immediate goal. Studying for an exam only to pass it is another example of an immediate goal.

Personal goals deal with the needs and motives of the individual and are self-rewarding. For example, wanting to be a good dancer, a good human being, maintaining good health, etc., are all illustrations of personal goals since they enable an individual to feel good about him/herself. Societal goals are those which are concerned with changes in society, such as wanting better gender equality, sensitivity towards the poor, developing a more broad-minded attitude towards social reforms among the rural folk, etc.

Tangible goals are those which are clearly definable and achievable like wanting to be a doctor, or getting a distinction in the Board examinations. Abstract goals are those which deal with qualitative changes that are difficult to specify and measure quantitatively. For example, wanting to be a good human being, or a contented person are abstract goals, since 'good' and 'contented' are difficult to define or measure precisely.

Goals play a significant role in learning since they give strength and direction to it. When we learn only to meet the immediate goal of passing the examination, our learning is usually temporary and ineffective and we forget it soon after the goal is accomplished. For effective learning to take place, we should be able to relate it to all that we learn. This will enable us to achieve our life goals. When learning is guided or motivated by long term goals, it helps us to reach newer heights and contributes productively and positively to our life. Thus, the types of goals that we set, influence the amount of motivation to achieve them. Further the nature of our goal setting activity has been found to be directly proportionate to improvement in our learning and performance. This is because the goals help to direct our attention to the task at hand, they mobilize our effort, they increase our persistence at the task and they also help us to adopt new strategies when old ones fail to help us.

Educational psychologists like Murphy and Alexander (2000) have written about many goal orientations which help us to understand students' learning and performance. The important ones among these are, learning goals, performance goals and work – avoidance. Learning goals are based on the personal intention to improve abilities and understand a concept, idea or issue, no matter what one's performance is. Thus the mistakes one makes are not important, since the intention is to learn or to improve. Performance goals are based on the personal intention to appear competent or perform well in the eyes of others. Students with performance goals are more concerned about winning, being toppers and outdoing other students. Some students don’t want to learn or look smart or outshine others; they just want to avoid work. These students try to complete assignments and activities as quickly as possible without exerting much effort. These are the work avoidant learners. You can clearly see thus how knowledge about goals is extremely significant in the educational process to understand the student and his/her learning.

Check Your Progress 3

Note: Write your answers in the space given below.

1) Identify any five goals which you had set for yourself in your life. Examine how they influenced your motivation and learning. What inference can you draw from your experience on the nature of relationship between goal planning and learning?

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5.4.4 Interests

You often hear teachers complaining to parents at the Parent Teacher Meetings that their children can do very well in studies, provided they take interest in them. You may have also heard students saying “Hindi is so boring”; “I just can’t do physics – its subject matter doesn’t interest me” or “why should I go for the cricket match when I am not interested in cricket!” Interest is one of the most important factors which mediates learning and which motivates to act. Without interest, as is evident from the examples cited above, there can be no learning. An interest is not the same as preference for some object, event or behaviour over others and which provides engagement and joy and is undertaken voluntarily. Interests are actually deep rooted constructs and are determined by the need structure of an individual. An individual with strong social needs such as belongingness, affiliation and recognition will direct all his/her energies into activities which enable him/her to fulfill these needs such as meeting people, going to clubs, associations, parties, meetings etc. In theoretical terms, an interest may be defined as a learnt or acquired motive stemming from some inherent needs of the individual which drive him/her to act in a way that will sustain or satisfy his inner need structure. This cycle can be explained with the help of the following flow diagram:

![Flow Diagram]

Indians differ greatly in their patterns of interests because their need structures vary. For some persons, social and emotional needs become the guiding forces, for others, aesthetic or higher cognitive needs may be the preponderant factors. Age variations are also visible. Young children have a need for activity, play, adventure etc. and thus they learn much better through a playway approach. This arouses their interest in studies and helps to sustain their involvement in work. For adolescents and older learners, the needs for affiliation and group belongingness are very high and thus they always show an interest in recreational group activities like parties, picnics, social outings etc. Interests are thus determined by both age related and human needs factors. They influence not only what one will learn best, but also serve to explain why learning sometimes flags or becomes inadequate. Interests are usually classified on the basis of the nature of activity involved, for example, spiritual interests, recreational interests, scholarly or academic interests, social interests etc.

Check Your Progress 4

Note: Write your answers in the space given below.

1) Contact a group of learners and ask them to list out their interests. Following this, arrive at a system of classification of the listed interests. Then, take each interest area separately and explain how it is likely to influence learning.

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5.4.5 Readiness to Learn and Maturation

As the term suggests, there is an optimal or most appropriate time for each individual to learn a specific skill or concept with ease and efficiency. This appropriate time comes when one's physical, neural and intellectual aspects of development have advanced enough to enable one to perceive the problem and solve it with relative ease and comfort. For instance, seven month old child cannot walk since it lacks the physical maturation or level of development required to promote walking. Similarly, it is impossible for a five year old to comment on democracy or socialism as he/she is not 'ready' or cognitively adept at understanding these concepts. Maturation can be best interpreted as relatively permanent change in an individual – be it cognitive, emotional or physical, that occurs as a result of biological ageing, regardless of personal experience. Maturation is preprogrammed and occurs regardless of the interactions a child has with the environment. Most expert teachers in schools know that no matter how hard they work or how good they are, they cannot force a student to think or do what he/she is not biologically ready to do. Thus, cognitive 'coming of age', or maturation is another specific aspect of 'readiness to learn'. It implies that a child should have the requisite level of cognitive skills necessary for solving a problem or accomplishing a task set before her.

It is also important for you to understand that there are large individual differences in maturation. Some children for instance walk at nine months, while others at two years. Some children speak a language quite competently at three years, while others may be as late as five years. Puberty comes to some girls at eleven while to others at fourteen. Maturation has to be thus understood as a natural process of unfolding of the development stages, resulting in functionally preparing an individual to acquire mastery over his/her environment.

It must have become clear to you that any attempt to teach things before an adequate level of readiness is acquired by the child is futile. This also serves to explain why non-performance on the part of learners or their inability to grasp a concept, can be attributed to lack of adequate maturation and readiness to learn.

Since maturation determines the readiness for learning, it is critical for curriculum planners and teachers to take note of this. It enables them to decide what to teach, how to teach, when to teach and correspondingly be guide on what to expect from their learners. You will now be able to appreciate why very young children should not be encouraged to write. Similarly, if teenagers are undergoing mood swings, it is because of their developmental pattern - they are not pretending moods or deliberately misbehaving.

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Check Your Progress 5

Analyse reasons for the following:

1) Why cursive hand-writing is started only at approximately 7-8 years of age?

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<tr>
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<th>Question</th>
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<td>2)</td>
<td>Why team games are not played in early childhood?</td>
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<td>3)</td>
<td>Why the order of teaching mathematical functions is addition, subtraction, multiplication, and division?</td>
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<td>4)</td>
<td>Why Algebra, Geometry and third language learning are introduced in the middle school years?</td>
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### 5.5 LET US SUM UP

In this unit you have been acquainted with some of the factors affecting learning. Learning is influenced by a combination of personal or individual centred factors and environmental factors. These interact in various ways and combinations to mediate the learning process. It is very difficult to extricate the personal and environmental factors from each other. Thus any discussion on learning always strives to identify the significant factors which affect it, irrespective of whether these are personal or environmental factors. You have already seen in this unit that among the significant factors affecting learning are intelligence, aptitude, self concept, motivation, interests, goals etc. A detailed discussion of intelligence, aptitudes, interests, goals and readiness and maturation has already been done. You must have understood how each of these factors are conceptualized and understood, their proneness to individual variations and their relationship with learning. The remaining factors will be discussed in the next unit.

### 5.6 UNIT END EXERCISES

1) Interview any two students studying in senior school regarding their performance and achievements in school. Identify the factors which have influenced these and the depth and direction of influence.

2) Analyse the report cards of 10 students. Based on the marks/grades and comments given, try to arrive at the possible factors which have influenced the learning/achievement.

3) In any learning task or activity, performance is contingent on both personal and environmental factors. Discuss.

4) Trace the evolution of the concept of intelligence and describe its relationship with learning.
5) Aptitudes greatly, enhance specific domains of learning. Discuss, substantiating your views with illustrative examples.

6) All curriculum planners must be conversant with the concepts of readiness and maturation. Explain why this is required and discuss the role of readiness and maturation in influencing learning.

5.7 REFERENCES AND SUGGESTED READINGS


