UNIT 3: ATTENTION, SPAN OF ATTENTION, SPAN OF APPREHENSION, DIVISION OF ATTENTION

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3.1 LEARNING OBJECTIVES

After going through this unit you will be able to-

- explain the concept of attention
- identify different types of attention
- illustrate different ways of retaining attention
- analyse the practical way of improving the levels of attention in your day to day life.

3.2 INTRODUCTION

This unit introduces you to the meaning of attention, its characteristics, causes and types of attention. Besides, you will also be able to identify the different ways of sustaining attention presented in this unit. You will be able to visualize how attention takes place in the real sense. Here in this unit, three main experiments of attention is conducted with the help of the apparatus they are span of attention, span of apprehension and division of attention.

3.3 MEANING OF ATTENTION

Attention is the cognitive process of selectively concentrating on one aspect of the environment while ignoring other things. Attention has also been referred to as the allocation of processing resources. It is one of the important areas to be studied in the field of education, psychology and neuroscience. Attention is a mental effort or striving to control or regulate the conscious mind. Attention was originally considered as an inborn mental faculty and due importance was given on the cognitive or intellectual aspect of mind in attention. Although at present it is described as a mental effort or striving, this has its effect on our cognitive process is worth mentioning. So McDougal has described attention as a striving which has its impact on the cognitive aspect of mind. It is an active effort of our conscious mind. Through this act consciousness is being controlled, concentrated and regulated to a particular object or idea of thought. Through attention, individual selects a particular object or idea of thought in mind and concentrates or focuses his attention on it. In short attention is an act of concentration consciousness. For providing a proper meaning to the term “attention”, let us look at a few definitions forwarded by eminent authorities on this concept.

According to Ross, “Attention is a process of getting an object of thought clearly before the mind.”

According to McDougal, “Attention is merely conation or striving, considered from the point of view of its effect on cognitive process.”

According to Sharma, R.N, "Attention can be defined as a process which compels the individual to select some particular stimulus according to his interest and attitude out of the multiplicity of stimuli present in the environment".

According to Dumville, "Attention is the concentration of consciousness upon one object rather than upon another."

3.3.1 Characteristics of Attention

The nature and significance of attention may find expression through the following points-

- Attention is a mental activity through which conscious mind is being concentrated at an object or idea of thought.
- It is a fixation of mind through which freedom of consciousness is being regulated or concentrated.
- Attention is a striving activity of mind.
- Attention is essentially a process and not a product.
- It helps in our awareness or consciousness of our environment.
- At one time we can concentrate or focus our consciousness on a particular object only.
- The concentration or focus provided by the process of attention helps us in the clarity of the perception of the perceived object or phenomenon.
- In the chain of the stimulus-response behaviour it works as a good mediator. Properly attended stimulus yields better response. Therefore, for providing an appropriate response one has to pass through the stage of preparedness or alertness (mental as well as physical) set by the process of attention.

- It is not merely a cognitive function but it is essentially determined by emotional and conational factors of interest, attitude and striving.

  The conclusion derived from the above, may thus lead us to think of attention as a process carried out through cognitive abilities and helped by emotional and conational factors to select something out of the various stimuli present in one's environment and then bring it in the centre of one's consciousness in order to perceive it clearly for deriving the desired ends.

3.3.2 Causes or determinants of Attention

What causes one to attend, why do we attend or under what condition attention is paid- are the vital questions to be considered. These questions are very pertinent for a teacher in a classroom while drawing the attention of his/her students. Answers to these questions may be either external or internal, objective or subjective. Their specific nature may be described below-

OBJECTIVE CONDITIONS

Attention is determined largely by the external objects, their situation and conditions. There are significant characteristics of the external objects which can draw our attention quite instinctively. They may be identified below-

- **SIZE:** Size of an object naturally draws our attention. Bold letters in the news headline or newspaper naturally draws attention of the reader.
- **INTENSITY:** Bright object has more intensity of stimulus to draw attention; bright light, loud sounds are thus the objects of attention to anybody.

- **MOBILITY:** The moving objects can easily catch our eyes. The moving pictures in cinema are the objects of anybody's attention compared to that of the still pictures.
- **NOVELTY:** Novelty or newness of the object is of universal appeal to people. New books and new teachers easily draw attention of the school students.
- **CHANGE:** Everybody wants a change of the old situation. A new assignment of job and a new person are more stimulating to anybody for attention.
- **SECRECY:** Secretive or prohibitive objects act negatively in mind to create interest and attention. The movie picture labeled as "for adults" draw more attention to the adolescents.
- **SITUATION:** Situation or location of an object may act advantageously to draw attention. Important news is published in a specific area of the newspaper for this purpose.
- **DISCIPLINE:** Things presented in a disciplined way may easily draw our attention. Systematic and disciplined writing of the students in examination script naturally draws attention of the examiner.
- **CONTRAST:** Contrast of things presented is a condition of attention. A white man among the black, a girl among the boys are the causes of attention due to contrast.
- **RARENESS:** Things very rare to be had may naturally draw anybody's attention. A rare animal kept in the zoo may draw more attention of the viewers.
- **STRANGENESS:** Strange objects can catch the eyes of the spectators. The horror pictures with unusual story can attract attention and interest of the people.

SUBJECTIVE CONDITION

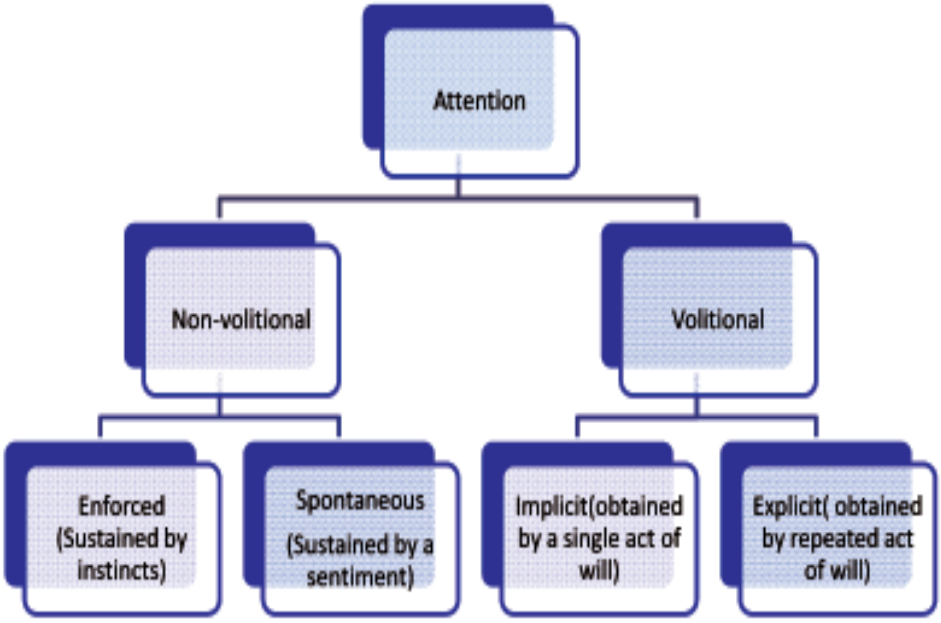
Subjective conditions of attention are inherent in the individuals' own mental makeup. Some of them are inborn and some others are acquired. Their nature and characteristics may be presented as below-

- **INTEREST:** It is the innate and inherent condition of attention. Interest may also be acquired through training. A man interested in the game of chess can concentrate his attention due to this reason.
- **TEMPERAMENT:** Temperament is a mental disposition that determines ones attention. Accordingly a man with a religious bent of mind is more attracted to the religious principles and practices than any other person.
- **INSTINCT:** Inborn instinctive tendencies are the urges of the organism to attend to situation with a typical kind of behaviour. Hunger urges one to attend to food; curiosity makes one to attend to new knowledge.
- **EMOTION:** Feeling an emotion urge one to pay attention and become interested quite passionately. One deeply attends to a letter received from a beloved.
- **SENTIMENTS:** It is the permanent state of emotional experience in mind that urges one to attend to something with interest. Mother attends to every aspect of her child's behaviour out of sentiment.
- **DESIRE:** Psychological needs that give rise to desire in mind makes one to be attentive. Need of examination creates desire in mind of the students to attend the classes.
- **PAST EXPERIENCES:** Previous learning experience received on certain subject or field of work naturally forms an acquired interest in mind to attend. Accordingly, a historian and a scientist attend to books of their own interest when they visit a library.

- **HABIT:** Habit is the result of repetition that takes permanent form in one's thought, feeling and activity. Accordingly, a habitual smoker or a drunkard is more attentive to their own respective objects of interest.

3.3.3 Types of Attention

Various authors have classified attention in a variety of ways but the following classification given by Ross seems to be more agreeable.



- **Non-Volitional or Involuntary Attention:** This type of attention is aroused without the play of will. It is non-volitional in the sense that one's attention is drawn by the stimulating power of the object without any mental readiness. Here, no mental effort or voluntary readiness of mind is needed to attend. Attention is sustained by instinct aroused by the object or sentiment already formed in mind. Mother's attention towards her crying child, attention towards the members of the opposite sex, sudden loud noise, bright colours, etc are examples of non-volitional attention. Non-volitional attention as classified above can be

aroused by our instincts and also by our sentiments. The attention which is aroused by the instincts is called Enforced Non-Volitional attention. And the other sub-type of non-volitional attention aroused by the sentiments is called Spontaneous Non-Volitional attention.

- ❍ Enforced non-volitional attention is quite instinctive in nature. The external object enforces or compels one to pay attention to it. The individual cannot control or regulate his mind here. Primary school children looking outside the classroom when a car passes through the road side is attention of this kind.
- ❍ Spontaneous non-volitional attention is sustained by the acquired interest and sentiment of individual towards something. Here, attention remains passive, but acts spontaneously due to interest already formed in mind.
- O wing to this acquired interest one may listen to classical music quite involuntarily.

➢ **Volitional or Voluntary Attention:** Attention is volitional or voluntary when it calls forth the exercise of will. It demands the conscious effort on our part. Usually in such a type of attention, we have a clear-cut goal before us and for its accomplishment we, with all our efforts, make ourselves attentive. Attention paid at the time of solving an assigned problem of mathematics, answering questions in an examination hall, consulting the railway time-table at the time of embarking on a railway journey are some of the examples of volitional attention. Volitional attention is further sub-divided into two categories- Implicit and Explicit volitional attention.

- ❍ Implicit volitional attention is guided by deep involvement of individual in the subject for which attention grows from within. Wisdom and maturity of knowledge make individual attention implicit. A scholar and a scientist

deeply engaged in their subjects of study may pay attention of this kind.

- Explicit volitional attention is one in which the external situation makes a man attend to something quite willfully. Students paying attention to books when examination comes nearer is an instance of explicit volitional attention. This type of attention is situational in nature. It continues as long as the situation is there.

3.3.4 How can attention be sustained?

Attention is by nature variable and short lived. It undergoes quick changes from one object to the other owing to the fact that attention is a selective activity of mind. For effective use of it, we need to fixed up our mind and give attention for a reasonable length of time. It cannot be left to be unrestrictedly moved from one object to other object quite instinctively. In this regard our efforts should be to sustain our attention according to necessity. In order to do so it is necessary to consider certain psychological devices that may be presented below-

- **Formation of habit:** In order to regulate attention there is the need of formation of habit. Habit formation can bring about control and regulation to sustain attention. Educational environment should also be organized suitably for that.
- **Effect of Discipline:** Disciplinary rules and control at home and in school may bring about regulation on behaviour of individual to sustain attention. Parents and teachers have their respective roles to play here.
- **Formation of ideal environment:** An ideal educational environment with peace and serenity is necessary to sustain attention. Such an environment should be able to make habitual and voluntary self-control and regulation of instinctive tendency of children.
- **Making free from distraction:** All the distracting situations

in learning should be deliberately controlled for sustaining attention. A school should therefore be away from an industry, market places, cinema halls, so on.

- **Dynamic nature of teaching:** Teaching method adopted by the teacher should not be mechanical and stereo-typed. It should be dynamic and enjoyable to students in order to sustain attention.
- **Learning by doing:** Active method of learning is always preferable to the passive method for sustaining attention. Students need to be given individual freedom of self-activity and self-involvement in their learning.
- **Formation of sentiment:** For durable attention in learning, sentiment of the learner may be effectively used. For this purpose teacher should try to form favourable sentiment towards the learning subjects as well as to his own personality.
- **Creating motivation:** Teacher should act as a motivator to students rather than as a lesson maker in the classroom. Learning should not be started so long as mental readiness or desire to learn could not be created in the learner's mind.
- **Development of will-force:** Concentration of mind to sustain attention is very necessary. For this purpose training in the development of the will-force through activities like Yoga culture may be an effective step.



CHECK YOU PROGRESS

Q1. What is attention?

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Q2. Mention four characteristics of attention.

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Q3. Mention any four determinants of attention.

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3.4 CONCEPT OF SPAN OF ATTENTION

While defining attention we have emphasized that in a strict psychological sense, only one object, idea or fact can be the centre of consciousness at one particular moment. Attention has certain limitations so far as the number of objects on immediate presentations is concerned. One cannot attend to too many things when presented at a time. Span or range of attention is the limit to which one can attend to a number of objects on immediate presentation. It is the amount of concentrated time on a task without becoming distracted. It may be defined as what one can perceive in terms of number of objects stimuli on account of a mere glimpse of the environment in which stimulus or object are present.

Historically speaking, it was Sir William Hamilton who, in the year 1859, first experimented on the span of attention. For his experiments, he spread out marbles on the ground before his students and concluded that on an average the span of visual attention is limited to 6-7 marbles i.e., we are unable to see more than 6-7 marbles at a time. However, if these marble pieces are arranged in groups or units, we can attend to a greater number of the marbles. Further experiments were performed by psychologists like Jevons (1871), Glanville and Dallen Back (1929), Woodworth and Shalsberg (1968), etc.

Psychologists have determined such limits by using an apparatus called “Tachistoscope”. It comes from the Greek word ***“Tachistos”*** which means ***“quick”*** and ***“scope”*** which means ***“to see”.*** The apparatus determines the span of visual attention on presentation of a number of dots or figures for fraction of a second. It has been obtained that on an average, man can report correctly the number upto 5 or 6. This span or range of attention is educationally significant so far as limitations of sensory ability of one’s attention is concerned.

For the measurement of the other sensory span of attention, different techniques may be employed. For example, the span of auditory attention may be measured by tapping a number of times and asking the subject how many taps he heard.