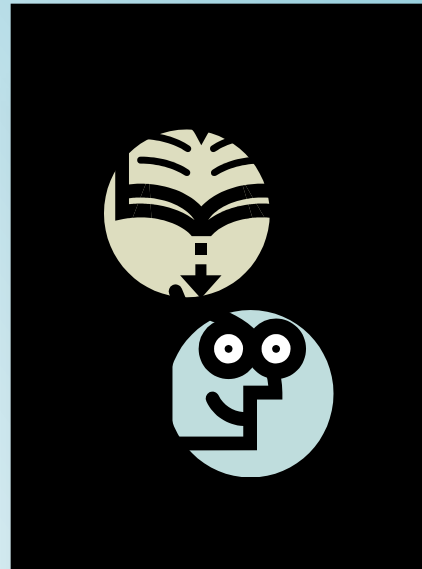


## Lecture Notes



**EXT 121**

**EDUCATIONAL PSYCHOLOGY**



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## Reference books

Following are the books suggested for further readings:

1. Dahama OP and Bhatnagar, OP (1987) Education and Communication for Development. Oxford and IBH Publishing Co. Pvt. Ltd, New Delhi
2. Daivadeenam, P (2002) Educational Psychology in Agriculture. Agrotech Publishing Academy, Udaipur.
3. Ray, GL (2003) Extension Communication and Management. Kalyani Publishers. New Delhi.
4. Woolfolk, A E (1995) Educational Psychology. Allyn and Bacon Publisher, London,

# PSYCHOLOGY: MEANING AND DEFINITIONS

## Psychology

It is the scientific study of behavior and mental process of organism.

## What is psychology?

The term "psychology" is derived from two Greek words – *psyche* (soul) and *logos* (science or study). Thus, literally it means study or science of soul. But now it is no more considered as science of soul. It has moved away from this focus and established itself as a scientific discipline which deals with the various processes and behaviour of organism.

Most of the contemporary psychologists agree on a definition of psychology as the scientific study of behaviour and mental processes of organism. For more definitions of psychology, see Box#1.

There are three key terms in the above definition of psychology which have been clarified below:

**Scientific study** means using techniques such as observation, description, and experimental investigation to collect information and then organising this information.

**Mental processes** refer to private and cognitive process such as attention, perception, remembering (memory), problem-solving, reasoning, decision-making, feelings, thinking, motives etc.

### Box#1: Definitions of Psychology

- Psychology is the science of the activities of individual in relation to the environment (Woodworth).
- Psychology is the positive science of behaviour (Watson).
- Psychology is the science of human behaviour and experience (Cruze).
- Psychology is the science of mental activity of an organism (Guilford).
- According to Charles E. Skinner, psychology deals with the responses to any and every kind of situation that life presents. By responses or behaviour is meant all forms of processes, adjustments, activities, and experiences of the organism.

## Behaviour: $B=f(P, E)$

It is the product of the interaction of individual and her/his perceived environment.

**Behaviour** refers to all the actions or reactions of an organism (person or animal) in response to external or internal stimuli. The behaviour of an individual, in a broad sense, refers to anything the

**Overt (external) behaviour**

It is observable, detectable, and public. Outwardly seen or sensed by observer.

**Covert (internal) behaviour**

It occurs within the organism that is not readily observable or detectable and is private.

individual does. According to Leagans (1961), behaviour refers to what an individual knows (Knowledge), what s/he can do (skill – mental or physical), what s/he thinks (attitude), and what s/he actually does.

Behaviour may be simple or complex, short or enduring. Human behaviour may be ***overt*** (expressed outside) or ***covert*** (expressed inside). While symbolic adoption is an example of covert behaviour, use adoption is an example of overt behaviour. Both overt and covert behaviour can be measured.

People who study psychological phenomena are not necessarily limited to the study of human beings only; they also study the behaviour of animals. They study the behaviour and mental processes of individual not of group/community. Thus, when they are studying groups, the focus is generally on how individuals perform within the group rather than the study of the group as a whole.

## EDUCATIONAL PSYCHOLOGY: MEANING AND DEFINITIONS

### What is education?

In order to know the educational psychology; we have to first understand what is education.

The word education is derived from Latin word *educare* which means to *bring-up*. Education is also derived from another Latin word *educere* which means to *lead out*. Education as *educere* is more acceptable as it means leading an individual from ignorance to knowledge.

#### Education

It is the process of bringing desirable change into the behaviour of human beings.

Education can be defined as the process of imparting or acquiring knowledge and habits through instruction or study. It can also be defined as a process in which human behaviour is modified so as to be in closer agreement with some model or ideal determined by the values of society.

If education is to be effective, it should result in changes in all the behavioural components.

### What is educational psychology?

Educational Psychology is a combination or overlapping of two separate fields of study; psychology and education. It is a distinct discipline with its own theories, research methods, problems and techniques. Educational psychology is distinct from other fields of psychology (see Box#2) due to its focus on understanding the processes of teaching and learning that takes place in formal environments. Educational psychologists study what people think and do as they teach and learn a particular curriculum in a particular environment where education and training are intended to take place. They help in developing instructional methods and materials used to train people in both educational and work settings. They are also concerned with research on issues of relevance for education, counselling and learning problems.

### **Box#2: Specialised Fields of Psychology**

Today psychologists work in many specialised fields which have their own theories and methods. Some of the major fields of psychology are: cognitive psychology, biological psychology, health psychology, developmental psychology, social psychology, educational psychology, clinical psychology, environmental psychology, industrial/ organisational psychology, sports psychology, etc

Educational psychology deals with behaviour of human beings in educational situation (see Box#3 for definitions of educational psychology). This means that educational psychology is concerned with the study of human behaviour or human personality, its growth, development, guidance under the social process of education. Education is possible in human beings; hence, human learning is the central core of educational psychology.

### **Box#3: Definitions of Educational Psychology**

- Educational psychology is that branch of psychology, which deals with teaching and learning. It takes its meaning from education, social process and from psychology, a behavioural science (Skinner).
- Educational Psychology is the discipline concerned with teaching and learning processes; applies the methods and theories of psychology and has its own as well (Woolfolk, 1995).

## SCOPE OF EDUCATIONAL PSYCHOLOGY IN AGRICULTURAL EXTENSION

### Scope

Human learning is the central core of educational psychology.

Educational psychology deals with the behaviour of human beings in educational situations. Its main concern is to identify various psychological factors affecting teaching and learning process. It describes and explains the learning according to scientifically determined principles and facts concerning human behaviour. Educational psychology addresses the questions – “why do some individuals learn more than others” and “what can be done to improve that learning.” Therefore, its subject matter is revolved around teaching and learning process and educational psychologists attempt to discover:

- The extent to which the factors of heredity and environment contribute to learning.
- The nature of the learning process.
- The educational significance of individual differences in rate and limit of learning.
- The inner change that occurs during learning.
- The relation of teaching procedures to learning outcomes.
- The most effective techniques for evaluating progress in learning.
- The relative effect upon an individual of formal learning as compared with incidental or informal learning experiences.
- To value the scientific attitude towards education.
- The psychological impact upon learner’s attitude of sociological conditions.

Agricultural extension is education and its main purpose is to change the behaviour of farmers. Therefore, knowledge of educational psychology is useful to extension agent for understanding the factors affecting the teaching and learning process.



## IMPORTANCE OF EDUCATIONAL PSYCHOLOGY IN AGRICULTURAL EXTENSION

### Importance

- Helps in understanding the learner.
- Helps in organising effective learning situation.

The importance of educational psychology in agricultural extension is immense as both disciplines deal with human behaviour in educational environment. Following are the some of the reasons which explain the importance of educational psychology in agricultural extension.

- Educational psychology helps the extension agent to know the learner, his interest, attitudes, aptitude, level of aspiration, intelligence, interests, individual behaviour in group, etc. which plays a major role in one's learning.
- Its main concern is on teaching and learning. This helps in formulating training programmes for improving the knowledge and skill of extension agent and farmers. It also helps in selection of teaching methods and aids for organising effective learning situations and suggests technique of learning as well as teaching.
- It helps in imparting better education by organising the subject matter of learning experience, preparation of different text books, development of assessment patterns, etc for heterogeneous learners.
- Educational psychology helps in acquainting learner with the mechanism of heredity and environment.
- It also deals with the problem-solving which is very important for extension agent to develop problem-solving skills amongst farmers.
- It helps extension agent to find causes of prejudices, the habit of sticking to old practices of farming and ways of doing things, the doubts and lack of confidence and factors affecting motivation.
- It also helps them to know the emotions and feelings of farmers, how farmers learn new practices.

# INTELLIGENCE: MEANING AND DEFINITIONS

## What is intelligence?

### Intelligence: meaning

- The capacity to learn
- The total knowledge a person has acquired
- The general ability to perform cognitive tasks
- The capacity to learn from experience or the capacity to adapt to one's own environment
- The ability to adapt successfully to new situation and to the environment in general

The concept of intelligence is very important in education but it is quite controversial and often misunderstood. Intelligence is a key construct employed to know how individuals differ from one another. It also provides an understanding of how people adapt their behaviour according to the environment in which they live.

Intelligence is the ability of an individual to cope with his environment. It may be thought out as a composite of organisation or an organisation of activities to learn, to grasp broad and subtle facts especially abstract facts with alertness and accuracy to exercise mental control and to display flexibility in seeking the solutions of problems (see box # 1 for definitions). Intelligence characterises the whole behaviour of an individual and is sum of her/his abilities which are quantitatively differentiable. Intelligence is the product of heredity and environment. The opportunities to learn vary widely, yet the inherited capacity as modified by maturation accounts for a

### Box #1: Definitions of Intelligence

- Intelligence is the ability to judge well, reason well and act well (Binet).
- Intelligence is the global or aggregate capacity of an individual to think rationally, act purposefully, and to deal effectively with her/his environment (Wechsler).
- Intelligence is the capacity to learn and adjust to relatively new and changing conditions (Wagnon).
- Intelligence is the the ability to adapt, to shape and select environment to accomplish one's goals and those of one's society and culture (Sternberg).
- Intelligence is the capacity to do something useful in the society in which we live. Intelligence is the ability to respond successfully to new situations and the capacity to learn from one's past experiences (Gardner).
- Intelligence is the ability or abilities to acquire and use knowledge for solving problems and adapting to the world (Woolfolk).

greater part of the individual variability. In order to understand concept of intelligence, we have to know its theories.

## Uni or one factor theory

Some psychologists believe intelligence is a basic ability that affects performance on all cognitively oriented tasks. An *intelligent* person

### Intelligence: definition

It is the cognitive ability of an individual to learn from experience, to reason well, to remember important information, and to cope with the demands of daily ..

will do well in computing mathematical problems, analysing poetry, taking history essay examinations, and solving riddles.

### Two-factor theory

Spearman suggested that intelligence consisted of a general factor (**g-factor**) and some specific factors (**s-factors**). The g-factor includes mental operations which are primary and common to all performances. In addition to the g-factor, he said that there are also many specific abilities. These are contained in what he called the s-factor. Excellent singers, architects, scientists, and athletes may be high on g-factor, but in addition to this, they have specific abilities which allow them to excel in their respective domains.

### Multiple theory of intelligence

According to Gardner, all human beings possess at least eight intelligences (see Box #2). Thus, intelligence is not a single entity; rather distinct types of intelligences exist. Each type of intelligence is independent one. It means, if a person exhibits one type of intelligence, it does not necessarily indicate being high or low on other types of intelligences. Gardner also put forth that different types of intelligences interact and work together to find a solution to a problem.

#### Box #2: Eight types of intelligence (Gardner)

- **Linguistic** (skills involved in the production and use of language): It is the capacity to use language fluently and flexibly to express one's thinking and understands others.
- **Logical-Mathematical** (skills in scientific thinking and problem solving): It is the ability think logically and critically.
- **Spatial** (skills in forming visual images and patterns): It refers to the abilities involved in forming, using, and transforming mental images.
- **Musical** (sensitivity to musical rhythms and patterns): It is the capacity to produce, create and manipulate musical patterns.
- **Bodily-Kinaesthetic** (using whole or portions of the body flexibly and creatively): This consists of the use of the whole body or portions of it for display or construction of products and problem solving.
- **Naturalistic** (sensitivity to the features of the natural world): This involves complete awareness of our relationship with the natural world.
- **Interpersonal** (sensitivity to subtle aspects of others' behaviours): This is the skill of understanding the motives, feelings and behaviours of other people so as to bond into a comfortable relationship with others.
- **Intrapersonal** (awareness of one's own feelings, motives, and desires): This refers to the knowledge of one's internal strengths and limitations and using that knowledge to effectively relate to others.

## Intelligence as a Process

Sternberg's triarchic theory suggests that intelligent behaviour is the product of applying thinking strategies, handling new problems creatively and quickly, and adapting to contexts by selecting and reshaping our environment. Sternberg believes that intelligence is comprised of three separate, though interrelated abilities: analytical, creative, and practical (see box #3).

### Box #3: Sternberg's view of Intelligence

- **Componential (analytical) Intelligence:** It is the ability to think abstractly, process information and determine what needs to be done. This intelligence has three components, each serving a different function. First is the knowledge acquisition component, which is responsible for learning and acquisition of the ways of doing things. The second is the Meta or a higher order component, which involves planning concerning what to do and how to do. The third is the performance component, which involves actually doing things.
- **Experiential (creative) Intelligence:** It is the ability to formulate new ideas and combine unrelated facts. It is involved in using past experiences creatively to solve novel problems. It is reflected in creative performance. Persons high on this aspect integrate different experiences in an original way to make new discoveries and inventions.
- **Contextual (practical) Intelligence:** It is the ability to adapt to a changing environment and to shape one's world to optimise opportunities. It may be called '*street smartness*' or '*business sense*'.

## Concept of Intelligence Quotient (IQ)

In 1912, William Stern, a German psychologist, devised the concept of Intelligence Quotient (IQ). The IQ is the ratio between the individual's mental age and her/his chronological age. In order to avoid fractions, the ratio is multiplied by 100.

$$IQ = \frac{MA}{CA} \times 100$$

**Mental Age (MA):** It is a measure of a person's intellectual development relative to people of her/his age group. A mental age of 12 means that a student's performance on an intelligence test equals the average performance level of a group of 12 year olds.

**Chronological Age (CA):** It is the biological age or actual age in year from birth. A bright student's MA is more than her/his CA; for a dull student, MA is below the CA.

### **IQ: facts or features**

- IQ value varies at least within a period of three years.
- IQ changes as result of change in environment.
- IQ does not rise all of a sudden, it goes up slowly.
- There is no relationship between the success and IQ.
- There is some relationship between the intelligence of the child and father's occupation.

According to formula, a student with mental age of 10 and chronological age of eight should have IQ of 125. The level of intelligence may be indicated as follows:

<b>S No</b>	<b>Category</b>	<b>Level of IQ</b>
1.	Idiot	0-25
2.	Imbecile	25-50
3.	Moron	50-70
4.	Below Normal	70-90
5.	Normal	90-110
6.	Superior	110-120
7.	Very superior	120-140
8.	Genius	140 and above

## TYPES OR KINDS OF INTELLIGENCE

The concept of general intelligence is too broad to be much practical value. For convenience, therefore, psychologists often distinguish three kinds of intelligence.

### **1. Abstract intelligence**

It is the ability to understand and deal with verbal and mathematical symbols. Out of the three, this is the one that receive greatest weight. Professional people are high in abstract intelligence. For instance, if a farmer knows about iron deficiency in sugarcane, if same mineral deficiency occurs in other crop, he can find it.

### **2. Mechanical intelligence**

It is the ability to understand and deal with things, objects etc and more concerned with the skills of individuals. Industrialists and building traders' are high in this intelligence. For instance, a farmer who is having mechanical skill to perform spraying operation does fast and effectively than those with less mechanical skill.

### **3. Social intelligence**

It is the ability to understand and deal with persons, to apply psychological principles of human relationship. Salesperson, politician, diplomat possess this intelligence.

## FACTORS AFFECTING INTELLIGENCE

### Evidence of heredity

- Identical twins have more similar IQs than fraternal twins.
- Siblings reared together in the same home have more similar IQs than those of adopted children raised together in the same environment.

### Evidence of environment

- Identical twins reared apart have less similar IQs than identical twins reared in the same environment.
- School attendance has an impact on IQ scores.
- Children who are breast fed during the first three to five months of life score higher on IQ tests at age 6 than same-age children who were not breastfed.

There are numerous factors which directly or indirectly affect the intelligence of the individual and which make up the behaviour pattern of the individual. These factors may be of the following forms:

### 1. Heredity and environment

There is a general consensus among psychologists that intelligence is a product of complex interaction of heredity (*nature*) and environment (*nurture*). Heredity can best be viewed as something that sets a range within which an individual's development is actually shaped by the support and opportunities of the environment. For example, if a person has tall parents, it is likely that the individual will also grow to be tall. However, the exact height of the person can be influenced by environmental factors, such as nutrition and disease. Heredity provides the physical body to be developed with certain inherent capabilities, while environment provides for the maturation and training of the organism. Newman (1940) concluded that variation in IQ were determined about 68 per cent by heredity and 32 per cent by environment. This was an average statistical determination.

### 2. Age

A person who is bright or dull in his childhood tends to remain bright or dull throughout his life. The evidence shows that a person achieves his maximum IQ at about 20 years of age and remains relatively stable until around 70 years of age. Some abilities remain constant, while others decline rapidly due to declining physical efficiency.

### 3. Health and physical development

Physical and mental health may be related to one's ability to gain desirable achievements in mental activity. With delicate health, one may not possess enough energy to engage in mental activity to achieve necessary success. Physical defects such as incomplete maturation of brain cells may result in subnormal intelligence.

### 4. Sex



Analysis of performance on scientific items of intelligence test appear to show that there is a slight superiority of boys in questions that involve mathematical material and scientific concepts, and that girls excel in material that deals more directly with humanities.

## **5. Race**

There is no convincing evidence to show how far race is a factor in determining intellectual level.

## **6. Culture**

Culture also influences the intelligence of the individual to some extent. Sternberg's notion of contextual or practical intelligence implies that intelligence is a product of culture. In technologically advanced societies, persons are well-versed in skills of attention, observation, analysis, performance, speed, and achievement orientation due to the adoption of child rearing practices that foster these types of skills. Therefore, the test in this respect should be standardised from one culture to another culture.

## **7. Social and economic conditions**

As the home plays a significant role in the early development years, it can be expected that home conditions can exercise considerable influence on behaviour and attitudes. The activities, interests, and financial status of parents and of other adults in the neighbourhood environment may provide for the child poor, relatively meagre, or an extremely rich series of experiences. Drive and motivation can operate to overcome social and economic handicaps.

Vygotsky also believed that cultures, like individuals, have a life of their own; they grow and change, and in the process specify what will be the end-product of successful intellectual development. According to him, while elementary mental functions (e.g., crying, attending to mother's voice, sensitivity to smells, walking, and running) are universal, the manner in which higher mental functions such as problem solving and thinking operate are largely culture-produced.



## IMPORTANCE OF INTELLIGENCE IN AGRICULTURAL EXTENSION

The concept of intelligence can be used in various fields including agricultural extension. All type of individuals, irrespective of their mental strength can be utilised in some or other aspects. Extension agent can know the type of intelligence a farmer possesses and can be used accordingly. Similarly, the knowledge of some of the factors affecting intelligence of individual can be manipulated by extension agent.

Farmers with higher intellectual capacity can be better utilised by offering broader opportunities and with programmes for their accelerated growth. For example, if a farmer is found to have good teaching abilities then s/he can be used in general extension meetings to educate other farmers.

Thus, an extension agent can increase her/his effectiveness by using techniques for teaching farmers with different levels of intellect for smooth introduction of programmes of change.

## PERSONALITY: MEANING AND DEFINITIONS

The term personality is derived from the Latin word *persona*, which means mask. The mask used by actors in the Roman theatre for changing their facial make-up. After putting on the mask, audience expected the person to perform a role in a particular manner. It did not, however, mean that the person enacting the given role necessarily possessed those qualities.

### Personality: Definition

Personality is the sum total of all that an individual is everything that constitutes a person's physical, mental, emotional, and temperamental make-up.

For a layperson, personality generally refers to the physical or external appearance of an individual. For example, when we find someone 'good-looking', we often assume that the person also has a charming personality. This notion of personality is based on superficial impressions, which may not be correct. When psychologists talk of personality, they mean a dynamic concept describing the growth and development of a person's whole psychological system. Rather than looking at parts of the person, personality looks at some aggregate whole that is greater than the sum of the parts. In psychological terms, **personality** refers to our characteristic ways of responding to individuals and situations (see Box 1: Definitions of personality). People can be described the way in

### Box#1: Definitions of Personality

- Personality is the dynamic organisation within the individual of those psychophysical systems that determine his unique adjustments to his environment (Allport, 1930).
- Woodworth defines personality as the quality of an individual's total behaviour; that is, how he reacts when his activity is considered as a whole. Personality comprises an individual's experience, his knowledge, skill, temperament, attitude, habits, character, and physical traits.
- According to Carver and Scheier (2000), personality is a dynamic organisation, inside the person, of psychophysical systems that create a person's characteristic patterns of behaviour, thoughts, and feelings.
- Personality is the sum total of ways in which individual reacts to and interacts with others. It is most often described in terms of measurable traits that a person exhibits (Robbins, 2001).
- Personality can be defined as a dynamic and organised set of characteristics possessed by a person that uniquely influences his or her cognitions, motivations, and behaviours in various situations (Ryckman, 2004).

which they respond to various situations. Certain catchwords (e.g., shy, sensitive, quiet, concerned, warm, etc.) are often used to describe personalities. These words refer to different components of personality. In this sense, personality refers to unique and relatively stable qualities that characterise an individual's behaviour across different situations over a period of time.

#### **Personality: features**

- It has both physical and psychological components.
- Its expression in terms of behaviour is fairly unique in a given individual.
- Its main features do not easily change with time.
- It is dynamic in the sense that some of its features may change due to internal or external situational demands. Thus, personality is adaptive to situations.

If you watch closely, you will find that people do show variations in their behaviour. One is not always cautious or impulsive, shy or friendly. Personality characterises individuals as they appear in most circumstances. Consistency in behaviour, thought and emotion of an individual across situations and across time periods characterises her/his personality. For example, an honest person is more likely to remain honest irrespective of time or situation. However, situational variations in behaviour do occur as they help individuals in adapting to their environmental circumstances.

Once we are able to characterise someone's personality, we can predict how that person will probably behave in a variety of circumstances. An understanding of personality allows us to deal with people in realistic and acceptable ways.

In essence, personality includes the unique pattern of psychological and behavioural characteristics that distinguishes each of us from everyone else. Personality characteristics are relatively stable and enduring, often developed in childhood, and affect the way we *think, act, feel, and behave*. Individual personality patterns are both *consistent and stable and unique and distinctive*.

## TYPES OF PERSONALITY

### T

Jung classified individual into two psychological types – introvert, extrovert, and ambivert was added later on, as all individuals could not be fitted in only these two types.

#### **Introvert**

An introvert limits his acquaintance to a few. This person is very conservative and suspicious of the motives of others. He is not social and prefers to remain in the background on certain occasions. He avoids embarrassment and public speaking. He is very reserved, self-centred, introspective, absent minded, remains worried and is always day dreaming. He is generally slow and hesitant to take the initiative. Philosophers, poets, and scientists are generally introverts.

#### **Extrovert**

An extrovert is socially adaptable and interested in people. He likes to make friends and very soon creates a circle of friends around him. He prefers working in company with other people, is talkative and fond of talking. He is self assertive and generally takes things lightly. He never feels embarrassed. He has a keen sense of observation and is attentive. Reformers and social workers are generally extroverts.

#### **Ambivert**

Ambivert types are placed in between extrovert and introverts. Their behaviour is balanced. Their psychic energy is partially directed inwards and partly outwards. They are interested in their own thoughts and emotions and also in other persons and their action. Most of us belong to ambivert type.

## FACTORS AFFECTING PERSONALITY

An adult's personality is now generally considered to be made up of hereditary and environmental factors and moderated by situational conditions.

### **Heredity**

It refers to those factors that were determined at conception. Physical stature, facial attractiveness, gender, temperament, muscle composition and reflexes, energy level, and biological rhythms are characteristics that are generally considered to be either completely or substantially influenced by who your parents were that is by their biological, physiological, and inherent psychological makeup. The hereditary approach argues that the ultimate explanation of an individual's personality is the molecular structure of the genes, located in the chromosomes.

Evidence demonstrates that traits such as shyness, fear, and distress are most likely caused by inherited genetic characteristics. It suggests that some personality traits may be built into the same genetic code that affects factors such as height and hair colour.

If personality characteristics were completely dictated by heredity, they would be fixed at birth and no amount of experience could alter them. For example, if you were relaxed and easy going child, it would be result of your genes, and it would not be possible for you to change those characteristics. But personality characteristics are not completely dictated by heredity.

### **Environment**

Environment to which we are exposed plays a substantial role in shaping our personalities. For example, culture establishes the norms, attitudes, and values that are passed along from one generation to next and create consistencies over time. The environmental factors that exert pressures on our personality formation are culture in which we raised, our early conditioning, the norms among our family, friends, social groups, social interaction, etc that we experience.

Both heredity and environmental factors are important determinant of human personality. Heredity sets the parameters or outer limits, but, an individual's full potential will be determined by how well s/he adjusts to the demands and requirements of the environment.

### **Situation**

It influences the effects of heredity and environment on personality. An individual's personality, although generally stable and consistent, does change in different situations. Situations seem to differ substantially in the constraints they impose on behaviour. Some situations (e.g., employment interview) constraints many behaviour; other situations (e.g., a picnic in a public park) constrain relatively few.

## ROLE OF PERSONALITY IN AGRICULTURAL EXTENSION

The knowledge of human personality enables the extension agent to judge and follow the method of guiding by selecting suitable teaching methods. This helps the extension agent to properly plan the educational programme to accomplish the objectives for a desirable change in the farmers. By studying the personality of farmers, extension agent can understand the values and value systems of its clients and can proceed his work accordingly.

By studying the personality of a particular farmer, the extension agent can get a clear idea about his various traits such as sociability. If a person found with this trait, then he can be used as a key communicator to promote developmental activities in a particular village. Similarly, farmers with traits of empathy, sympathy, generosity can be engaged in trustworthy works like seed distribution etc.

## EXTENSION TEACHING: MEANING, DEFINITION AND STEPS

### Teaching

It is the purposeful direction and management of the learning process.

### What is extension teaching?

Extension teaching is a process of creating situations that facilitate the learning process. Creating situation includes providing activities, materials, and guidance needed by the learner. In other words, arranging situation in which the things to be learnt are brought to the attention of the learners, their interest is developed, desire aroused, conviction created, action promoted and satisfaction ensured.

The ultimate purpose of teaching is not merely to inform people but to transform them to bring about the desired change in their behaviour.

### Steps in extension

Extension teaching is a planned and deliberate act on the part of the extension agent. The extension agent has to move step by step in a scientific way to impart training to the clients who are farmers, farm women, and rural youth. The role of the extension agent is that of a facilitator and motivator. Though details of the procedure may vary from situation to situation, there are some steps which are basic to extension teaching. These are presented below as suggested by Wilson and Gallup (1955).

#### Step 1: Getting the ATTENTION of the learner

The first step in extension teaching is to make the people aware of the



Fig: Steps in Extension Teaching



new ideas and practices. The people must first know that a new idea, practice, or object exists. This is the starting point for change. Until the individuals' attention have been focussed on the change that is considered desirable, there is no recognition of a problem to be solved or a want to be satisfied.

Teaching methods may be used at this stage are mass methods like radio, TV, exhibition etc and personal contact by the extension agent, contact through local leaders.

### **Step 2: Stimulating the learner's INTEREST**

Once the people have come to know of the new idea, the next step is to stimulate their interest. This may be done by furnishing them more information about the topic in a way they will be able to understand and use. It is necessary to present one idea at a time, relevant to their needs.

The important teaching methods at this stage are personal contact by extension agent, contact through local leaders, farm publications, radio, TV, etc.

### **Step 3: Arousing the learner's DESIRE for information**

It means unfreezing the existing behaviour and motivating the people for change. At this stage it is necessary to emphasise on the advantage of the new idea or practice.

Visit to demonstrations, farm publications, personal contact by the extension agent, group discussion etc. are important at this stage.

### **Step 4: CONVINCING the learner for action**

It is the stage of strong persuasion so as to convince the people about the applicability of the new idea or practice in their own situation and that it would be beneficial for them. The people are furnished with adequate information about the idea and how it works.

Field day or farmers' day, slide show, personal contact by the extension agent and training are important at this stage.

### **Step 5: Getting ACTION by the learner**

This is the stage of putting the idea or practice into operation. Small scale demonstration with supply of critical inputs may be set up in real life situation of the individuals who come forward. This provides

the opportunity of direct experience on the part of the learners. At this stage it is necessary to collect evidence of change such as change in yield, income, employment etc.

Demonstration, personal contact by the extension agent, supply of critical inputs and ensuring essential services are important at this stage.

**Step 6: Making sure that the learner obtains SATISFACTION from his action**

To produce lasting change, the extension efforts should produce satisfying results. Satisfaction may come from high yield, more income, better health etc. A satisfaction reinforces learning and develops confidence, which generates motivation for further change. To sustain the changed behaviour, it is necessary to furnish new and relevant information about the practice on a continued basis, till change in the practice itself is felt necessary.

Use of mass media, local leaders, and personal contact by the extension agent are important at this stage. Availability of critical inputs and essential services are also to be ensured.

It must be understood that the above six steps in extension teaching often blend in with each other and lose their clear-cut identity. There is similar overlapping in the extension methods used to advance each of the different steps; all methods are not equally effective for different stages in this process; nevertheless, one method may, under certain condition, contribute to several steps.

## Learning

Any relatively permanent change in behaviour or behavioural potential produced by experience.

## What is learning?

All complex behaviours are learned. Learning is a theoretical concept. Hence, it is not directly observable. We can infer that learning has taken place if an individual behaves, reacts as a result of experience in a manner different from the way formally behaved.

Learning has no universally agreed definition (see Box #1). The way one defines it emanates from, as well as influences, the way one theorises learning. Thus there are as many definitions as there are theories of learning. For instance, cognitive theories of learning, which emphasise the thought process and the role of the mind in learning, view it *as the mind's ability to acquire, process, and retain new knowledge and information*. Thus cognitive psychologists studying learning are interested in unobservable mental activities such as thinking, remembering, creating, and solving problems. On the other hand, behavioural psychologists view that the outcome of learning is *change in behaviour and emphasises the effects of external events on the individual*. But experiential theories, which emphasise the role of action and experience in learning, conceptualise it in terms of *competencies generated among learners*.

### Box #1: Definitions of learning

- Learning is a process of progressive behaviour adaptation (Skinner, 1960).
- Learning is a process by which a person becomes changed in his behaviour through self-activity (Leagans, 1961).
- Learning is the process whereby knowledge is created through the transformation of experience (Kolb, 1984).
- Van den Ban & Hawkins (1988) defined learning as the acquiring or improving the ability to perform a behavioural pattern through experience and practice.
- Learning is any relatively permanent change in behaviour that occurs as a result of experience or practice (Weiss, 1990).
- Learning is a relatively permanent change in behaviour that results from practice (Atkinson et al, 1993).
- According to Woolfolk (1995), learning occurs when experience causes a relatively permanent change in an individual's knowledge or behaviour

## Features of learning

### Learning: features

- It involves change.
- The change must be relatively permanent.
- The change must be the result of experience.

- *Learning involves change:* change may be good or bad, desirable or undesirable.
- *The change must be relatively permanent:* temporary changes may be only reflexive and fail to represent any learning. Therefore, the requirement of learning is that it must be relatively permanent, which rules out changes due to drugs, habituation, illness, fatigue, hunger, or temporary adaptations. For example, a person who has gone without food for two days does not learn to be hungry, and a person who is ill does not learn to run more slowly. Of course, learning plays a part in how we respond to hunger or illness.
- *The change must be brought about by experience:* The change may be deliberate or unintentional, for better or for worse. To qualify as learning, this change must be brought about by experience – by the interaction of a person with his or her environment. The experience may be acquired directly through practice or indirectly, through reading or observation. Change due to maturation, such as growing taller or turning grey, do not qualify as learning.

## What is learning experience?

### Learning experience

A learning experience is the mental and /or physical reaction one makes through seeing, hearing, or doing the things to be learned, through which one gains meaning and understanding of the material to be learned.

The important point in the process of teaching learning, regardless of its content, form, or objective, is to enable learners to have an effective learning experience. An effective learning experience is one that results in a maximum of desirable change in behaviour on the part of the learners.

An effective learning experience involves far more than simply being physically present in a learning situation or placing oneself in a position to learn. It is what a learner does in the learning situation that is the all important aspect of learning. Learning, therefore, takes place through the experience which the learner has; i.e., through the reactions s/he makes to the content which is to be learned. Hence, it is what the learner does, not what the instructor does, that is especially important in a learning situation. A learning experience, then, is not the same as merely attending a meeting or a class or a demonstration.

# LEARNING SITUATION

## What is learning situation?

### Learning situation

An effective learning situation is one in which all the essential elements for promoting learning; i.e., teacher, learner, subject matter, teaching materials and physical facilities, relevant to a particular situation, are presented in a dynamic relationship with one another.

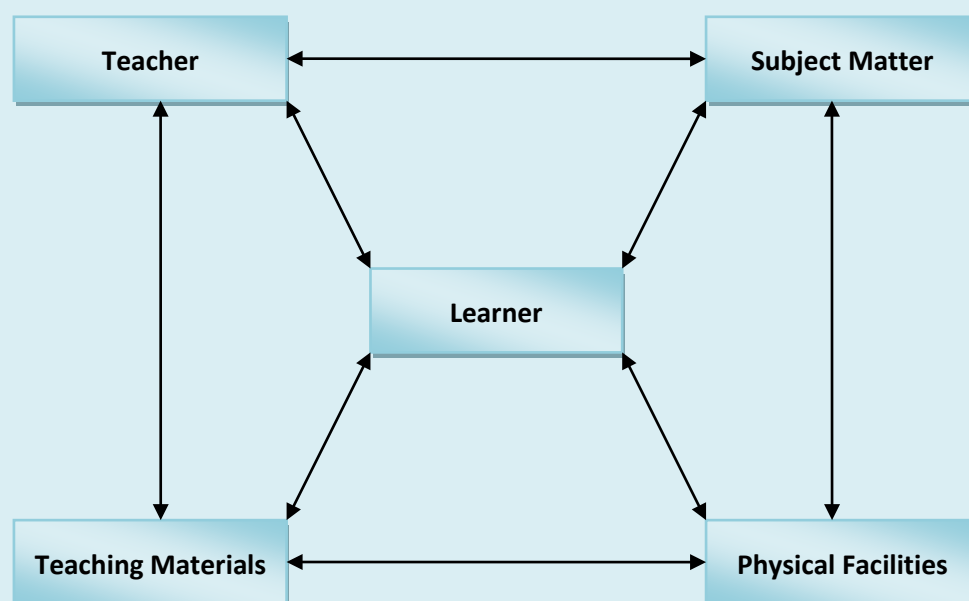
An effective learning experience can only be had in a well-structured and skilfully executed learning situation. The essential role of the extension agent is to create learning situations that stimulate and guide learning activity. A good extension agent is one who can create and manage learning situations in which learners have effective learning experiences.

### Elements of learning situation and their characteristics

Extension teaching requires learning situations that includes five major elements. The five elements necessary to constitute an effective learning situation and important characteristics about each are presented below.

#### 1. Learner

Person who wants and needs to learn is the learner. In an effective learning situation, a learner occupies the most important central position and all efforts are directed towards him/her. Learners should:



Diagrammatic Representation of the Elements of a Learning Situation

- i) be capable of learning
- ii) have interest in the subject
- iii) have need for the information offered, and
- iv) be able to use the information once it is gained.

In the extension education, the farmer, farmwoman, and rural youth comprise the learner. To explain the learning situation, we take an example in which dairy farmers who need to increase milk production are learners.

## **2. Teacher**

S/he is the extension agent who imparts training and motivates the learner. S/he not only knows what to teach, but also knows how to teach. The teacher should:

- i) have a clear cut and purposeful teaching objectives,
- ii) knows the subject-matter and have it well organised,
- iii) be enthusiastic and interested about the learners and the subject-matter,
- iv) be able to communicate and skilful in using teaching aids, and
- v) be able to encourage participation of the people.

## **3. Subject Matter**

It is the content or topic of teaching that is useful to the learner. The subject matter should be:

- i) pertinent to the learner's needs,
- ii) applicable to their real life situations,
- iii) well organised and presented logically and clearly,
- iv) consistent with the overall objectives, and
- v) challenging, satisfying and significant to the learner.

Here, the subject matter is increasing milk production.

## **4. Teaching Materials**

These are appropriate instructional material, equipments and aids. The teaching material should be:

- i) suitable to the subject matter and physical situation,
- ii) adequate in quantity and available in time, and
- iii) skilfully used.

In the present example, teaching materials may be improved breeds of bull or semen and fodder seeds suitable for the area, appropriate medicines, audio-visual aids relevant to the topic etc.

### **5. Physical Facilities**

It means appropriate physical environment in which teaching learning can take place. The physical facilities should be:

- i) compatible with objective,
- ii) representative of the area and situation, and
- iii) adequate and easily accessible.

In the present example, physical facilities may include facilities for AI and administering medicines; suitable land, irrigation etc for fodder cultivation; and a place easily accessible, free from outside distractions, adequate seating arrangements, electricity for projection, etc for conducting training programme.

## PRINCIPLES OF LEARNING

There are some principles of learning which are very much applicable in extension. The principles are generalised guidelines which form the basis for taking action. Following are some of the principles of learning along with their implications in teaching.

### 1. Principle of association

Learning is growth-like and continuous. The kind of learning that takes place is the result of the kind of experience we have. Previous learning always sets the stage for subsequent learning. New learning may be associated with previous successful and satisfying responses. For example, if the farmers have obtained profitable return by the application of nitrogenous fertilizer, they may be motivated to use balanced fertilizers containing phosphate and potash, for still higher return.

#### Implications for teaching

Implications of this principle are:

- Begin at the level of the learner.
- New must be related to the old.
- Adjust the pace to the learner's capacity, one idea at a time.
- Bring the idea to the attention of the learner repeatedly (in a variety of ways) and over a period of time.

### 2. Principle of clarity of objectives

Learning is more effective when it is purposeful. The learning must be useful to the learners. Objectives must be clear and meaningful to the learners. What is to be learnt must be important to a relatively large number of participants in the group and must be attainable.

#### Implications for teaching

- Learning must make sense to the learning.
- Progress must be constantly appraised and redirected.
- Purpose must be kept in sharp focus (objectives must be clear to the learner and teacher).



### **3. Principle of self activity**

Learning is an active process on the part of the learners. The instructor can create a situation and stimulate a person to learn. The door to learning is “locked on the inside” and unless the learner opens the door herself/himself, learning cannot take place. Activities appropriate to the specific learning must be used. For example, conducting demonstration by the farmers in their own fields provides opportunity of self-activity, that is, *learning by doing*. This makes learning effective and permanent.

#### **Implications for teaching**

- Activities appropriate to specific learning situation must be used.
- Learning activities should engage a maximum number of senses.

### **4. Principle of motivation**

To learn, people need to feel the need for learning. When this desire exists, the learner will exert a high level of effort. The learning experience, therefore, should be designed so learners can see how it will help them achieve those goals they have set for themselves.

#### **Implications for teaching**

- Teacher motivation of the student is essential in making learning more challenging.
- Standards demanded of the learner should be suitable to their ability or capacity.
- Appropriate and timely recognition should be given to student achievement.

### **5. Principle of practice**

When learner actually practice what they have read, heard, or seen, they gain confidence and are less likely to make errors or to forget what they have learned. Active involvement through practice, therefore, should be made part of the learning process.

#### **Implications for teaching**

- Course content should be organised into meaningful units.
- Theory should be related to practice.
- Provide activities that stimulate actual use situation.

## **6. Principle of disassociation**

Learning is affected by emotions. The most effective way of eliminating an undesirable response is to set up a desirable substitute that must be more satisfying than the original reaction. For example, when planting a crop in lines gives better yield, the farmer may be advised not to practise broadcasting.

### **Implications for teaching**

- Strive to increase pleasant emotions and decrease unpleasant emotions of students in connection with the learning process.
- Train the expression of emotions in the right direction.

## **7. Principle of readiness**

Learning takes place more effectively when one is ready to learn.

## **8. Principle of set or attitude**

An unfavourable attitude or set retards learning and a favourable attitude accelerates it.

## **9. Principle of reinforcement**

Behaviours that are positively reinforced (rewarded) are encouraged and sustained. When the behaviour is punished, it is temporarily suppressed but is unlikely to be extinguished.

## **10. Principle of transfer of learning**

It does not make much sense to perfect a skill in the classroom and then find that you cannot successfully transfer it to the job. Therefore, learning should be designed to foster transferability.

## **11. Principle of feedback**

Learning is facilitated when the learners are provided with knowledge of progress of learning.

## **12. Principle of abilities**

Learning abilities varies widely among individuals. The level of communication and the level of understandability of the subject matter taught must be in line with the learner's ability.