

**In the name of God**

**English for students of Educational Psychology**

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## **What is Psychology?**

Any knowledge discipline is hard to define. Firstly, because it evolves continuously. Secondly, because the range of phenomena it studies cannot be captured by any one definition. This is even more true of psychology. Long time back, students like yourself were told that the term psychology is derived from two Greek words *psyche* meaning soul and *logos* meaning science or study of a subject. Thus psychology was a study of the soul or mind. But since then it has moved away considerably from this focus and established itself as a scientific discipline which deals with processes underlying human experience and behavior. The range of phenomena it studies, some of which we mentioned above, are spread over several levels, viz. individual, dyadic (two person) group, and organizational. They also have biological as well as social bases. Naturally, therefore, the methods required to study them also vary greatly depending on the phenomenon one wants to study. A discipline is defined both in terms of what it studies and how it studies. In fact, more in terms of how or method/s it uses. Keeping this in view, psychology is defined formally as a science which studies mental processes, experiences and behavior in different contexts. In doing so, it uses methods of biological and social sciences to obtain data systematically. It makes sense of these data so that they can be organized as knowledge. Let us try to understand the three terms used in the definition, namely, mental processes, experience, and behavior. When we say experiences are internal to the experiencing person, then we refer to states of consciousness or awareness or mental processes. We use our mental processes when we think or try to solve a problem, to know or remember something. One level at which these mental processes are reflected is the brain activity. As we think or solve a mathematical problem, our brain activities can be observed using different techniques of brain imaging.

However, we cannot say that brain activities and mental processes are the same, although they are interdependent. Mental activities and neural activities are mutually overlapping processes but, they are not identical. Unlike the brain, the mind does not have a physical structure or has a location. Mind emerges and evolves as our interactions and experiences in this world get dynamically organized in the form of a system which is responsible for the occurrence of various mental processes. Brain activities provide important clues as to how our mind functions. But the consciousness of our own experiences and mental processes are much more than the neural or brain activities. Even when we are asleep some mental activities go on. We dream, and receive some information such as a knock on the door while we are asleep. Some psychologists have shown that we also learn and remember in our sleep. Mental processes, such as remembering, learning, knowing, perceiving, feeling are of interest to psychologists. They study these processes to try to understand how the mind works and to help us improve the uses and applications of these mental capacities. Psychologists also study experiences of people. Experiences are subjective in nature. We cannot directly observe or know someone else's experience. Only the experiencing person can be aware or be conscious of her or his experiences. Thus, experiences are embedded in our awareness or consciousness. Psychologists have focused on experiences of pain being experienced by terminally ill patients or of psychological pain felt in bereavement, besides experiences which lead to positive feelings, such as in romantic encounters. There are some esoteric experiences also which attract the attention of psychologists, such as when a Yogi meditates to enter a different level of consciousness and creates a new kind of experience or when a drug addict takes a particular kind of drug to get a high, even though such drugs are extremely harmful. Experiences are influenced by internal and the external conditions of the experiencer. If you are travelling in a crowded bus during a hot summer day, you may not experience the usual discomfort if you are

going for a picnic with some close friends. Thus, the nature of experience can only be understood by analyzing a complex set of internal and external conditions. Behaviors are responses or reactions we make or activities we engage in. When something is hurled at you, your eyes blink in a simple reflex action. You are taking an examination and can feel your heart pounding. You decide to go for a particular movie with a friend. Behaviors may be simple or complex, short or enduring. Some behaviors are overt. They can be outwardly seen or sensed by an observer. Some are internal or covert. When you are in a difficult situation while playing a game of chess you almost feel your hand muscles twitching, trying to experiment with a move. All behaviors, covert or overt, are associated with or triggered by some stimulus in the environment or changes that happen internally. You may see a tiger and run or think that there is a tiger and decide to flee. Some psychologists study behavior as an association between stimulus (S) and response (R). Both stimulus and response can be internal or external.

### **Psychology as a Discipline**

As we have discussed above, psychology studies behavior, experience and mental processes. It seeks to understand and explain how the mind works and how different mental processes result in different behaviors. When we observe others as lay or common persons, our own points of view or our ways of understanding the world influence our interpretations of their behaviors and experiences. Psychologists try to minimize such biases in their explanations of behavior and experience in various ways. Some do so by seeking to make their analysis scientific and objective. Others seek to explain behavior from the point of view of the experiencing persons because they think that subjectivity is a necessary aspect of human experience. In the Indian tradition, self-reflection and analysis of our conscious experiences, is held to be a major source of psychological understanding. Many western psychologists have also begun to emphasize the role of self-reflection and self-knowledge in

understanding human behavior and experience. Regardless of the differences in the way psychologists go about the study of behavior, mental processes and experiences, they seek to understand and explain them in a systematic and verifiable manner.

Psychology, though it is a very old knowledge discipline, is a young science, if one were to take the year of the founding of the first laboratory of psychology in 1879 in Leipzig. However, what kind of science is psychology, still remains a matter of debate, particularly because of the new interfaces of it that have emerged in recent times. Psychology is generally categorized as a social science. But it should not come to you as a surprise that, not only in other countries, but in India also, it is also a subject of study offered in the faculty of science, both at the undergraduate and post-graduate levels.

### **Psychology as a Natural Science**

It has been mentioned earlier that psychology has its roots in philosophy. However, modern psychology has developed because of the application of the scientific method to study psychological phenomenon. Science places a great deal of emphasis on objectivity which can be obtained if there is consensus on the definition of a concept and how it can be measured. Psychology was influenced by Descartes and later on by the developments in physics has grown by following what is called a hypothetic-deductive model. The model suggests that scientific advancement can take place if you have a theory to explain a phenomenon. For example, physicists have what is called a Big-bang theory to explain how the universe came to be formed. Theory is nothing else but a set of statements about how a certain complex phenomenon can be explained with the help of propositions which are interrelated. Based on a theory, scientists deduce or propose a hypothesis, that offers a tentative explanation of how a certain phenomenon takes place. The hypothesis then is tested

and proved true or false based on empirical data that one has gathered. The theory is revised if data gathered point in a different direction than the one suggested by the hypothesis. Using the above approach psychologists have developed theories of learning, memory, attention, perception, motivation and emotion, etc. and have made significant progress. Till date, most of the research in psychology follows this approach. Apart from this, psychologists have also been considerably influenced by the evolutionary approach which is dominant in biological sciences. This approach has also been used to explain diverse kinds of psychological phenomenon such as attachment and aggression to mention just a few.

### **Psychology as a Social Science**

We mentioned above that psychology is recognized more as a social science because it studies the behavior of human beings in their socio-cultural contexts. Humans are not only influenced by their socio-cultural contexts; they also create them. Psychology as a social science discipline focuses on humans as social beings. Consider the following story of Ranjita and Shabnam.

Ranjita and Shabnam were in the same class. Although, they were in the same class, they were just acquainted with each other and their lives were quite different. Ranjita came from a farmer's family. Her grandparents, parents and elder brother worked on their farm. They lived together in their house in the village. Ranjita was a good athlete and was the best long distance runner in the school. She loved meeting people and making friends.

Unlike her, Shabnam lived with her mother in the same village. Her father worked in an office in a town nearby and came home during holidays. Shabnam was a good artist and loved staying home and taking care of her younger brother. She was shy and avoided meeting people.

Last year there was very heavy rain and the river nearby overflowed into the village.

Many houses in the low lying areas were flooded. The villagers got together and organized help and gave shelter to people in distress. Shabnam's house was also flooded and she came to live in Ranjita's house with her mother and brother. Ranjita was happy helping the family and making them feel comfortable in her house. When the flood water receded, Ranjita's mother and grandmother helped Shabnam's mother to set-up their house. The two families became very close. Ranjita and Shabnam also became very good friends.

In this case of Ranjita and Shabnam, both are very different persons. They grew up in different families under complex social and cultural conditions. You can see some regularity in the relationship of their nature, experience and mental processes with their social and physical environment. But at the same time, there are variations in their behaviors and experiences which would be difficult to predict using the known psychological principles. One can understand why and how individuals in communities become quite helpful and self-sacrificing in crisis as was the case with the people in the village of Ranjita and Shabnam. But, even in that case, not every villager was equally helpful and also under similar circumstances not every community is so forthcoming; in fact, sometimes, the opposite is true – people become antisocial under similar circumstances indulging in looting and exploitation when some crisis occurs. This shows that psychology deals with human behavior and experience in the context of their society and culture. Thus, psychology is a social science with focus on the individuals and communities in relation to their sociocultural and physical environment.

## **UNDERSTANDING MIND AND BEHAVIOUR**

You will recall that psychology was once defined as a science of the mind. For many decades, the mind remained a taboo in psychology because it could not be defined in concrete behavioral terms or its location could not be indicated. If the term “mind” has returned to psychology, we should thank neuroscientists like Sperry and

physicists like Penrose, who have given it the respect which it deserved and now has. There are scientists in various disciplines including psychology, who think that a unified theory of the mind is a possibility, although it still is far away.

What is mind? Is it the same as brain? It is true that mind cannot exist without brain, but mind is a separate entity. This can be appreciated on account of several interesting cases that have been documented. Some patients whose occipital lobes, which are responsible for vision, were surgically removed have been found to be responding correctly to location and configuration of visual cues. Similarly, an amateur athlete lost his arm in a motorcycle accident but continued to feel an “arm” and also continued to feel its movements. When offered coffee, his “phantom arm” reached out to the coffee cup and when someone pulled it away, he protested. There are other similar cases documented by neuroscientists. A young man who suffered brain injury in an accident, after he returned home from the hospital, claimed that his parents had been replaced by their “duplicates”. They were imposters. In each of these cases, the person had suffered from damage of some part of the brain but his “mind” had remained intact. It was earlier believed by scientists that there is no relationship between the mind and the body and that they were parallel to each other. Recent studies in affective neuroscience have clearly shown that there is a relationship between mind and behavior. It has been shown that using positive visualization techniques and feeling positive emotions, one can bring about significant changes in bodily processes. Ornish has shown this in a number of studies with his patients. In these studies, a person with blocked arteries was made to visualize that blood was flowing through her/ his blocked arteries. After practicing this over a period of time, significant relief was obtained by these patients as the degree of blockage became significantly less. Use of mental imagery, i.e. images generated by a person in her/his mind, have been used to cure various kinds of phobias (irrational fears of objects and situations). A new discipline called



Psychoneuroimmunology has emerged which emphasizes the role played by the mind in strengthening the immune system.

## **EVOLUTION OF PSYCHOLOGY**

Psychology as a modern discipline, which is influenced to a large extent by Western developments, has a short history. It grew out of ancient philosophy concerned with questions of psychological significance. We mentioned earlier that the formal beginning of modern psychology is traced back to 1879 when the first experimental laboratory was established in Leipzig, Germany by Wilhelm Wundt. Wundt was interested in the study of conscious experience and wanted to analyze the constituents or the building blocks of the mind. Psychologists during Wundt's time analyzed the structure of the mind through introspection and therefore were called structuralists. Introspection was a procedure in which individuals or subjects in psychological experiments were asked to describe in detail, their own mental processes or experiences. However, introspection as a method did not satisfy many other psychologists. It was considered less scientific because the introspective reports could not be verified by outside observers. This led to the development of new perspectives in psychology.

An American psychologist, William James, who had set up a psychological laboratory in Cambridge, Massachusetts soon after the setting up of the Leipzig laboratory, developed what was called a functionalist approach to the study of the human mind. William James believed that instead of focusing on the structure of the mind, psychology should instead study what the mind does and how behavior functions in making people deal with their environment. For example, functionalists focused on how behavior enabled people to satisfy their needs.

According to William James, consciousness as an ongoing stream of mental process interacting with the environment formed the core of psychology. A very influential

educational thinker of the time, John Dewey, used functionalism to argue that human beings seek to function effectively by adapting to their environment.

In the early 20th century, a new perspective called Gestalt psychology emerged in Germany as a reaction to the structuralism of Wundt. It focused on the organization of perceptual experiences. Instead of looking at the components of the mind, the Gestalt psychologists argued that when we look at the world our perceptual experience is more than the sum of the components of the perception.

In other words, what we experience is more than the inputs received from our environment. When, for example, light from a series of flashing bulbs falls on our retina, we actually experience movement of light. When we see a movie, we actually have a series of rapidly moving images of still pictures falling on our retina. Thus, our perceptual experience is more than the elements. Experience is holistic; it is a Gestalt.

Yet another reaction to structuralism came in the form of behaviorism. Around 1910, John Watson rejected the ideas of mind and consciousness as subject matters of psychology. He was greatly influenced by the work of physiologists like Ivan Pavlov on classical conditioning. For Watson, mind is not observable and introspection is subjective because it cannot be verified by another observer. According to him, scientific psychology must focus on what is observable and verifiable. He defined psychology as a study of behavior or responses (to stimuli) which can be measured and studied objectively. Behaviorism of Watson was further developed by many influential psychologists who are known as behaviorists. Most prominent among them was Skinner who applied behaviorism to a wide range of situations and popularized the approach.

Although behaviorists dominated the field of psychology for several decades after Watson, a number of other approaches and views about psychology and its subject matter were developing around the same time. One person who shook the world with

his radical view of human nature was Sigmund Freud. Freud viewed human behavior as a dynamic manifestation of unconscious desires and conflicts. He founded psychoanalysis as a system to understand and cure psychological disorders. While Freudian psychoanalysis viewed human beings as motivated by unconscious desire for gratification of pleasure seeking (and often, sexual) desires, the humanistic perspective in psychology took a more positive view of human nature.

Humanists, such as Carl Rogers and Abraham Maslow, emphasized the free will of human beings and their natural striving to grow and unfold their inner potential. They argued that behaviorism with its emphasis on behavior as determined by environmental conditions undermines human freedom and dignity and takes a mechanistic view of human nature.

These different approaches filled the history of modern psychology and provided multiple perspectives to its development. Each of these perspectives has its own focus and draws our attention to the complexity of psychological processes. There are strengths as well as weaknesses in each approach. Some of these approaches have led to further developments in the discipline. Aspects of Gestalt approach and structuralism were combined and led to the development of the cognitive perspective which focuses on how we know about the world. Cognition is the process of knowing. It involves thinking, understanding, perceiving, memorizing, problem solving and a host of other mental processes by which our knowledge of the world develops, making us able to deal with the environment in specific ways. Some cognitive psychologists view the human mind as an information processing system like the computer. Mind, according to this view is like a computer and it receives, processes, transforms, stores and retrieves information. Modern cognitive psychology views human beings as actively constructing their minds through their exploration into the physical and the social world. This view is sometimes called constructivism. Piaget's view of child development which will be discussed later is

considered a constructivist theory of development of the mind. Another Russian psychologist Vygotsky went even further to suggest that the human mind develops through social and cultural processes in which the mind is viewed as culturally constructed through joint interaction between adults and children. In other words, while for Piaget children actively construct their own minds, Vygotsky took a view that mind is a joint cultural construction and emerges as a result of interaction between children and adults.

## **BRANCHES OF PSYCHOLOGY**

Various fields of specialization in psychology have emerged over the years. Some of these are discussed in this section.

**Cognitive Psychology** investigates mental processes involved in acquisition, storage, manipulation, and transformation of information received from the environment along with its use and communication. The major cognitive processes are attention, perception, memory, reasoning, problem solving, decision-making and language. You will be studying these topics later in this textbook. In order to study these cognitive processes, psychologists conduct experiments in laboratory settings. Some of them also follow an ecological approach, i.e. an approach which focuses on the environmental factors, to study cognitive processes in a natural setting. Cognitive psychologists often collaborate with neuroscientists and computer scientists.

**Biological Psychology** focuses on the relationship between behavior and the physical system, including the brain and the rest of the nervous system, the immune system, and genetics. Biological psychologists often collaborate with neuroscientists, zoologists, and anthropologists.

**Neuropsychology** has emerged as a field of research where psychologists and neuroscientists are working together. Researchers are studying the role of neurotransmitters or chemical substances which are responsible for neural

communication in different areas of the brain and therefore in associated mental functions. They do their research on people with normal functioning brain as well as on people with damaged brain by following advanced technologies like EEG, PET and fMRI, etc. about which you will study later.

**Developmental Psychology** studies the physical, social and psychological changes that occur at different ages and stages over a life-span, from conception to old age. The primary concern of developmental psychologists is how we become what we are. For many years the major emphasis was on child and adolescent development. However today an increasing number of developmental psychologists show strong interest in adult development and ageing. They focus on the biological, socio-cultural and environmental factors that influence psychological characteristics such as intelligence, cognition, emotion, temperament, morality, and social relationship. Developmental psychologists collaborate with anthropologists, educationists, neurologists, social workers, counsellors and almost every branch of knowledge where there is a concern for growth and development of a human being.

**Social Psychology** explores how people are affected by their social environments, how people think about and influence others. Social psychologists are interested in such topics as attitudes, conformity and obedience to authority, interpersonal attraction, helpful behavior, prejudice, aggression, social motivation, inter-group relations and so on.

**Cross-cultural and Cultural Psychology** examines the role of culture in understanding behavior, thought, and emotion. It assumes that human behavior is not only a reflection of human-biological potential but also a product of culture. Therefore, behavior should be studied in its socio-cultural context. As you will be studying in different chapters of this book, culture influences human behavior in many ways and in varying degrees.

**Environmental Psychology** studies the interaction of physical factors such as temperature, humidity, pollution, and natural disasters on human behavior. The influence of physical arrangement of the workplace on health, the emotional state, and interpersonal relations are also investigated. Current topics of research in this field are the extent to which, disposal of waste, population explosion, conservation of energy, efficient use of community resources are associated with and are functions of human behavior.

**Health Psychology** focuses on the role of psychological factors (for example, stress, anxiety) in the development, prevention and treatment of illness. Areas of interest for a health psychologist are stress and coping, the relationship between psychological factors and health, patient-doctor relationship and ways of promoting health enhancing factors.

**Clinical and Counselling Psychology** deals with causes, treatment and prevention of different types of psychological disorders such as anxiety, depression, eating disorders and chronic substance abuse. A related area is counselling, which aims to improve everyday functioning by helping people solve problems in daily living and cope more effectively with challenging situations. The work of clinical psychologists does not differ from that of counselling psychologists although a counselling psychologist sometimes deals with people who have less serious problems. In many instances, counselling psychologists work with students, advising them about personal problems and career planning. Like clinical psychologists, psychiatrists also study the causes, treatment, and prevention of psychological disorders. How are clinical psychologists and psychiatrists different? A clinical psychologist has a degree in psychology, which includes intensive training in treating people with psychological disorders. In contrast, a psychiatrist has a medical degree with years of specialized training in the treatment of psychological disorders. One important distinction is that psychiatrists can

prescribe medications and give electroshock treatments whereas clinical psychologist cannot.

**Industrial/Organizational Psychology** deals with workplace behavior, focusing on both the workers and the organizations that employ them. Industrial/organizational psychologists are concerned with training employees, improving work conditions, and developing criteria for selecting employees. For example, an organizational psychologist might recommend that a company may adopt a new management structure that would increase communication between managers and staff. The background of industrial and organizational psychologists often includes training in cognitive and social psychology.

**Educational Psychology** studies how people of all ages learn. Educational psychologists primarily help develop 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. A related field, school psychology, focuses on designing programs that promote intellectual, social, and emotional development of children, including those with special needs. They try to apply knowledge of psychology in a school setting.

**Sports Psychology** applies psychological principles to improve sports performance by enhancing their motivation. Sports psychology is a relatively new field but is gaining acceptance worldwide.