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A textbook of Educational Psychology
(Two Volume Set)

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PREFACE

This book is based on the assumption that educational psychology is an applied psychology, comprises many different facts of the educative process from the practical and applicational points of view. Readers are introduced to concepts, theoretical formulations and many new fields of study concerned with educational psychology that are assumed to have implications for education.

The publication is an introduction to *Educational Psychology*. Introductory textbooks are often regarded as being dry and dull and as lacking in style. We have made an attempt to overcome such defects by providing an organisation that allows the students to grasp the ideas contained in different chapters. With a view to encourage the students to reflect over the different points of view, we have tried our best to observe the principle of intellectual honesty, objectivity of judgement and fairplay in presentation. It is hoped that by reading this book, the students will be able to develop a more realistic and more meaningful understanding of the contents contained in it.

Whenever the authors puts their pens to paper, they feel indebted to many individuals. In writing this book, we are indebted to our friends, colleagues and students, who have encouraged us to write this book.

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Educational Psychology— Its Meaning, Nature and Scope

It is highly arbitrary ^{to say} on the part of a farmer to force one soil to yield the product of another, one tree to bear another fruit, for every kind of soil has different characteristic and different trees yield different kinds of fruits. Therefore, the skilled farmer needs to know about the nature of soil, about different kinds of trees, their variety, their characteristics and how to cultivate the land to grow more. So is with the teacher. Teaching skill alone are not sufficient. The teacher must know about children and how they develop. He should also recognise those characteristics that are of significance in helping each child to learn more efficiently. It is the knowledge of psychology, that can equip the teacher with those skills and competencies which are badly necessary for successful guidance of learning, adjustment and the growth of the children on the basis of their differences.

In this age of science and technology, psychology has been considered as one of the youngest, yet one of the most influential sciences. It has influenced education in many different ways and has given a new turn; a psychological turn to the human mind. For a skilful teacher in this day and age, a great deal of knowledge of educational psychology is highly indispensable.

The subject psychology has two aspects pure and applied. Pure psychology formulates techniques for the study of human behaviour, which finds the practical shape in its applied aspects, i.e. branches of applied psychology like clinical psychology, crime psychology, industrial psychology, occupational psychology and educational psychology.

Educational Psychology as a Branch of Applied Psychology

As discussed above educational psychology is nothing but one

of the branches of applied psychology. It is an attempt to apply the knowledge of pure psychology to the field of education. It consists of application of psychological principles and techniques to human behaviour in educational situations. In other words, Educational Psychology is a study of the experience and behaviour of the learner in relation to educational environment. In order to develop a clear understanding of the term educational psychology, it is necessary to understand the meaning of psychology and education separately.

Meaning of Psychology

Curiosity in man has led him to know his surroundings which mainly conclude nature and other fellow men. There is always a desire to 'know' what 'one' is, what is his background, what is it made of, what are the associated factors and in what way can it be useful to one self? Each question will lead to more questions, Psychology forces to answer many of the questions we have about ourselves, other people, and the nature of human life; why do we feel lonely? Why do we forget? How people learn? What makes someone creative? Why do we become angry? What happens when we take drugs? What makes some one help others? and so on.

Psychology had its formal beginning when Wilhelm Wundt established his psychological laboratory in Leipzig Germany in 1879. But in real sense, interest in psychology as a discipline dates back to the work of Plato, Aristotle and other philosophers.

Psychology—The Science of Soul

The Greek philosophers conceived psychology as a science of soul, as early as 400 B.C. In fact, the term psychology literally means the science of soul. Etymologically, it is composed of two Greek words "Psyche" and Logos means soul and science respectively. Goeckel named it as *psychologia*. Soul is a being which dwells on the body and with the end of life it leaves the body. Soul is a metaphysical idea. It can neither be perceived on imagined nor its nature and function can be studied by scientific methods of observation, experiment etc. Therefore, definition of psychology as the science of soul has been discarded by the modern psychologists.

Psychology—The Science of Mind

Some regard psychology as the science of mind. Historically the French philosophers like Descartes (1596-1650) and the Britisher philosophers like Locke considered psychology as the science of mind. Descartes tried to understand body mind relationship in terms of their interaction, the study of nervous system, and interest of references as innate actions etc.

Similarly Locke tried to study how simple and complex ideas are formed and how they are organised in the mind. Contemporary developments in the field of psychology also lead to the understanding of the functions of the nervous system. Relationship, between sensation and the physical properties of stimuli. The simultaneous development of mesmerism and hypnotism also contributed to the understanding of abnormal or unusual psychological activities. But still then, psychology did not gain the status of an independent discipline. It continued to be regarded as part of philosophy. It continued also to be regarded as the science of mind—mind being synonymous for brain to the psychologists and association of ideas for the British philosophers.

The definition of psychology as the science of mind is not acceptable at present. Mind is an ambiguous a concept as the soul. It is not at all possible to carry on scientific observation and experimentation on mind. This definition also does not include the overt behaviours of man and animal which are also important subject matter of psychology. Therefore, the definition of psychology as the science of mind has been discarded.

Psychology—The Science of Consciousness

Psychology has also been defined as the science of consciousness. Historically such a definition has been propounded by the Leipzig school of psychologists led by Wilhelm Wundt (1832-1920). Wundt defined psychology as the science of immediate experience with consciousness being the main subject matter.

Wundt is regarded as the founder of modern psychology as he first launched the programme of making it scientific. He published in 1879 at Leipzig the first psychological laboratory of the world for experimentation. He tried to investigate consciousness by introspection—a method which required verbal report of the subject about how mental status during various conditions of sensory stimulation. He postulated that conscious experience can be reduced in to elements and the primary

aim of psychology is the analysis of conscious experience into its elements.

But the definition of psychology as the science of consciousness is not acceptable. That is because mental life does not consist only of consciousness. There are unconscious and subconscious mental processes which influence our behaviour in various ways without our knowledge. Such arguments were advocated by Freud, the founder of the school of psycho-analysis on Vienna during the life time of Wundt himself. He along with Brener tried to explain human psychology from his study of abnormal individuals. He discarded the conventional Wundtian concept of psychology as the study of consciousness. Through his analysis of dream, of physical and mental symptoms of hysteria and others forms of neurotic disorders and of psychopathology of every day life such as slip of tongue, slip of pen, tip of the tongue phenomenon, mislaying of subjects etc. he proved that both the unconscious and the subconscious constitute most of the mental phenomena. Like the top of an iceberg, the conscious experience is visible and accessible to us. But like the hidden part of the iceberg, which constitutes at major part, the unconscious and subconscious experiences constitute the major part of mental life. Thus Wundt's definition of psychology as the science of consciousness is a limited definition and hence is not acceptable to how such processes are combined into complex mental phenomena. The question 'why' of conscious experience is explained by Titchener with the help of nervous system. He said that the conscious experience parallels the processes in the nervous system and the brain and one is not the cause of the other.

But such a definition of the subject matter of psychology is not acceptable to all. That is because experience is what one feels internally during any activity. But psychology should deal with both the inward and outward activities. Further if psychology is the study of conscious experiences then what about those of the children, animals, mentally deficient and the deranged. Since they can not introspect properly to report the same, their mental phenomena can not be included in the subject matter of psychology. Hence this definition of Titchener is incomplete.

✧ Psychology – The Science of Experience

Titchner (1867-1927), the leader of the structuralists defines psychology as the science of conscious experience which is dependent upon the experiencing person, Titchner was an English-born psychologist

who took his training on the University of Leipzig of Wundt and later settled in America. His primary goal was to establish psychology as a science of firmly as the natural science like physics and chemistry.

He took a monistic view and argues that all sciences have the same subject matter i.e. some aspect of human experience. But the subject matter of psychology is human experience from the special point of view of experience as dependent upon the experiencing person. To give an example the physicist and the psychologist may be investigating about sound. But whole the former investigates the phenomena as such, the latter is interested as to how it is perceived by the observer. The mind is nothing but the sum total of the conscious experiences as perceived by a person. The subject matter of psychology is the study of such conscious experience which constitutes mind. The method of study of conscious experience is through the introspection of a trained observer.

Titchner further analysed the broad questions of the subject matter of psychology. Those are the 'what', 'how' and 'why' of experience. The question 'what' is to be studied by retrospective analysis of mental processes i.e. sensation, affection and images 'how' refers.

✧ Psychology—Study of Behaviour

Watson (1878-1958), an American brought about a revolution in psychology called behaviourism. In his papers like "psychology as the behaviourists view it" (1913), 'image and affection of behaviour' (1931) and book 'Behaviour an Introduction to comparative psychology' he propounded a new theory as to definition and subject matter of psychology. He argued that psychology is to be regarded as a science and as a science it is to limit itself to the study and analysis of publicly observable events such as the behaviour of the subject rather than subjective matters like his private mental states. He defined psychology as "the science of behaviour."

✓ Meaning of Science and Behaviour

Science has been defined as "Systematic study of knowledge" concerning the relationship between the cause and effect of a particular phenomenon. In order to collect the scientific data and systematised material, science employs various kinds of methods of enquiry such as observation classification formulation of hypothesis, analysis of evidence etc. It also organises and develops our knowledge of the word, we live on, Psychology too aims at same thing. It uses scientific

methods to study human behaviour. It also helps us to understand control and predict human behaviour.

Behaviour is specific response which can be seen and observed in an active way. Psychology as the science of behaviour also aims at studying the behaviour of the individual and groups. We can study the behaviour of an individual in social milieue. As a social science it studies scientifically the socio-cultural problems of a particular society. Hence it is the science of behaviour.

In an important sense each of us is a psychologist. We all observe human behaviour, attempt to predict it, understand it and on occasion, control it. We not only observe and puzzle over our own behaviour, we also attend to what those about us are doing and why. While these everyday observations clearly overlap the activities of the professional psychologist, we would not call them psychological enquiries because they lack the distinctive features of science.

As discussed above, psychology is the scientific study of behaviour, psychologists and Leymen define behaviour in which the same way. In the past, psychologist have argued over whether internal, subjective mental events—images, memories, thoughts and feelings—are within the domain of psychology. Most now agree that the term behaviour is to be used broadly and includes all responses—overtmotion acts and psychological responses (such as heart-beat and blood pressure) as well as mental events. Thus behaviour includes both external, easily observable actions and events that can be inferred only indirectly from verbal reports or from psychological indications, such as changes in heart rate.

Meaning of Educational Psychology

The term educational Psychology is the combination of two words—education and psychology. So far we clarified the meaning of psychology. Let us now turn our attention to the meaning of education.

Meaning of the Term Education

Education is an activity, which goes on in the society. It attempts to develop the personality of an individual and then prepares him for membership in a society "Man without education would still be living just like an animal. It is education, which transforms man from a 'two legged animal' into human. It helps him to behave like a man and prevents him from behaving like an animal. Any modification brought about in the behaviour of an individual as a result of his interaction

with the environment constitutes learning." Thus modification of behaviour of an individual for healthy social adjustment in the society is education.

Meaning of Educational Psychology

So far, we have discussed the meaning of psychology and education separately. Here we shall discuss the meaning of educational psychology as a separate discipline.

Psychology is the science of behaviour. As an objective study of behaviour, it does not lay down norms for behaviour. It simply explains how under such and such circumstances world an individual characteristically behave. "What is" not "What should be" is the concern of psychology.

Education on the other-hand implies the modification of behaviour of an individual. Before modifying one's behaviour, it is essential to study his behaviour first. To study behaviour, education takes the help of psychology and then tries to modify it. Thus psychology helps education to study human behaviour and educational psychology modifies human behaviour in a socially approved way. Educational psychology as an applied branch of psychology applies psychological principles to modify human behaviour.

Educational psychology as outlined above in a branch of psychology concerned with human learning and development in educational settings. It involves scientific study of techniques that can be used to enhance learning. Studies conducted by the educational psychologists generally deal with the following three important areas.

The Teaching Process : It includes teaching methods, styles, management techniques etc.

The Learner and Learning Process : It includes application of cognitive and developmental psychology, taking into account individual differences and learning styles.

The Environment : It includes social context of the classroom or home environment.

Education and Educational Psychology

Educational psychology is not identical with education. The part cannot be identical with the whole. Educational psychology though a

phase of education, is quite different from it in certain aspects. The following are the main points of difference.

- (1) Education is a comprehensive scheme of life. It is very much concerned with aims, ideals, purposes, values and standards of life which are beyond the scope of educational psychology. The aims and ideas of education are determined by philosophy not by educational psychology.
- (2) Educational psychology is a positive science. It deals with facts as they are. It studies the laws of the child's nature as they are and as they operate. It has nothing to do with what they "ought to be". Thus it is not a normative science. Education is a normative science which has got certain norms and standards. Educational psychology gives the educator only an insight for devising for the best means of achieving norms and standards.
- (3) Education demands the Educator to know the child as well as the subject. The first demand of knowing the child is fulfilled by the science of educational psychology. Educational Psychology helps the teacher in adjusting the process of teaching to the needs and capacities of the child. Thus, Educational psychology puts in to the hands of the teacher the best means of educating. The aims of teaching he has to borrow from another science. Educational psychology tells the teacher how to teach the child with maximum efficiency and greatest effectiveness. Educational Psychology brings a message to the teacher that environment carries great weight on the education of the child. It reveals to him that every child has a psychological nature and all teaching should be adjusted according to that. Thus education is benefited by educational psychology.
- (4) To some, education appears to be only applied psychology. This is not true. Education is one word, but many meanings. Education includes both the means as well as the ends, Educational psychology studies only the means, but the ends are outside its purview.

Relation of Education and Psychology

Modern Psychologists give two extreme views of the relationship between psychology and education. One group of psychologists consider psychology optimistically as a kind of dispensary handling out specific psychological remedies for preventing educational ills, if not a universal panacea. The other group of psychologists give the pessimistic view.

According to this group, psychology had to do with artificial situations in laboratories with cats and rats rather than human beings. Hence it is irrelevant to the educational theory and practice. However, here is an attempt by the another to make an accurate assessment of their relationship.

Psychology, which is very popular subject has two aspects - an academic discipline and technology. The scientific study human behaviour refers to academic discipline. Here only the study and explanation of behaviour is emphasised. On the basis of scientific principles, different types of behaviour is studied, tested and verified.

Application of psychological principles for changing the behaviour of an individual refers to technology. Here psychology has to predict the behaviour, control and influence it. Thus it becomes the applied aspect of psychology. The science of behaviour should be studied to shape the behaviour of an individual according to the need of the society. A successful teacher has to study the behaviour of the child and modify it according to psychological principles. Thus educational psychology is the applied aspect of psychology.

Educational Psychology Versus General Psychology

Sometimes educational psychology is confused with general psychology. Though there is much that is common to both, yet their objectives are very different from one another. The field of general psychology is wider. It deals with every kind of human behaviour and with every kind of problem related to life. All forms of life processes adjustments, activities and experiences of the organism may become the scope of general psychology. General psychology deals with, and explains and interprets the facts of human behaviour and experience in a general way.

Educational psychology deals with the behaviour and experiences which are related to education only. It selects from the whole field of general psychology those facts and principles that are of specific significance to learning and teaching.

Thus, Educational Psychology is just a specialised branch of general psychology and is a science which studies actual events in a scientific way. It studies reasons for the differences in ability to learn quickly or slowly, for failure or success. It studies : (1) how man has always been interested in himself and has always attempted to find

answers to questions concerning the 'why' and 'how's' of experience and conduct, (2) how man has tried to understand his own impulses, feelings, strivings and acts, (3) because of mere curiosity or for more practical reasons, how man has attempted to estimate, the ability and personality characteristics of himself and of other people, (4) how most people have opinions, beliefs and explanations of the motives that impel individuals to work or not to work, to accept some ideas of new knowledge or not to do so. The methods of study of psychology are scientific. They are designed to ensure some degree of reliability, accuracy and dependability.

Educational psychology deals with the behaviour of human beings in educational situations. This means that educational psychology is concerned with the study of human behaviour or human personality, its growth, development under the social guidance, processes of education. Education is possible in human beings. Hence learning is the central core of educational psychology (both internal and external factors condition the organism).

✓ Educational Psychology Defined

As has been discussed so far the scientific study of learning and other human behaviour with relevance to education is the principal concern of educational psychology. Thus, educational psychology may be thought of as a behavioural science with two main referents—human behaviour and education. Here is an attempt to give the meaning of educational psychology in an integrated manner by the help of some important definitions given by the experts in the field.

- (i) **Crow and Crow:** "Educational psychology describes and explains the learning experiences of an individual from birth through old age."
- (ii) **Charles E. Skinner:** "Educational psychology is that branch of psychology which deals with teaching and learning."
- (iii) **Trow:** "Educational psychology is the study of the psychological aspects of educational situations."
- (iv) **Stephen:** "Educational psychology is the systematic study of the educational growth and development of a child."
- (v) **F. A. Peet:** "Educational psychology is the science of education."

(vi) **Walter B. Kolesnik:** "Educational psychology is the study of those facts and principles of psychology which help to explain and improve the process of education."

(vii) **Anderson:** "Educational psychology is a subject to be studied, an area or field of knowledge, a set of application of laws and principles from a wide field of knowledge to a social process a set of tools and techniques, and a field of research. While General psychology is a pure science, Educational psychology is its application in the field of education with the aim of socialising man and modifying his behaviour."

(viii) **Judd:** "Educational psychology is the science which explains the changes that take place in the individuals as they pass through the various stages of development."

What Educational Psychology Is :

✍ **Nature of Educational Psychology:** If we try to examine the meaning and definitions of educational Psychology discussed in this chapter, we can develop a clear idea about the nature of educational psychology. Its nature is scientific as it has been accepted that it is a science of education. The nature of educational psychology can be summarised in the following manner:

- (i) **Educational Psychology is a Positive and not a normative science:** Usually normative sciences like ethics and philosophy decide the aims of education. It is not the function of educational psychology to decide the same. But once it is decided, educational psychology will help us in telling whether aim is attainable or intangible. As a positive science, educational psychology will be concerned with the discovery of techniques by which the educational goals can be attained. Out of scientific study, when psychology will declare that a particular aim is unattainable, philosophers then will rethink and modify the goals of education.
- (ii) **Educational Psychology is a Behavioural Science:** As noted earlier the scientific study of learning and other human behaviour with relevance to education is the principal concern of educational psychology. Thus educational psychology may be thought of as a behavioural science with two main referents—human behaviour and education. In the educative process human beings are the objects of investigation about whom generalisations are developed

and knowledge is sought. The second important referent is education. Educational psychology is concerned with behavioural questions that are related to the objectives and practices of education.

- (iii) *Educational Psychology is an Applied Science:* The "action" of educational Psychology is to be found not in the nature of the subject itself but rather in its application—in the classroom. Teachers deal primarily with groups of children, not with psychological theory on experimental results. Their learning is constantly being applied to a unique set of circumstances. This is why teaching is a profession and not a trade. As every situation in which a physician must apply his knowledge is unique, and as a lawyer selects that from the past which has a unique bearing on the present, so does the teacher take from his stock of knowledge that which is pertinent to the present context.

Educational Psychology is just an application of psychological principles in the field of education and also in changing the behaviour of the individuals. It is to predict behaviour control and influence it. Thus it becomes an applied branch of psychology.

- (iv) *Educational Psychology is Human Experimental Psychology:* Educational psychology is closely related to human experimental psychology, particularly in the study of learning. *educational psychologists* deal with all the psychological aspects of the educational process. In addition to the principles of learning, educational psychologists study such topics as the ways in which educational performance is influenced by individual differences in motivation, personality factors, and social interaction. In their research, they examine such variable as teacher—student interaction, the effects upon learning and morale of class size, type of instruction and grouping by ability. On a larger scale, they may investigate the social organisation of schools and the selection and training of teachers and school psychologists. Because of their interest in individual differences, educational psychologists are often expert in measurement and applied statistics.

- (v) *Educational Psychology is a Social Science:* Social psychologists study humans who interact frequently, if not continually, with each other and live in groups ranging from the family to the

society. Social psychologists are concerned with the effect of the group (whether family, peer, professional, cultural or social) upon the individual and vice-versa. But they are also interested in a wide variety of other personal interactions. For example, the factors that determine interpersonal performance, the formation of attitude, the effect of group upon problem solving, the problem of individual differences in learning, personality factors etc. Though educational psychology studies the individuals from educational point of view, its results are applicable to all individuals, who interact with each other, while living in a group. Thus educational psychology becomes a social science.

- (vi) *Educational Psychology is a Counselling Psychology:* The use the word counselling to refer to the functions of psychologists, whose principal job is to deal with people who are in need of help or advice but not primarily who have emotional difficulties. A branch of psychology closely related to counselling is to be found in the work of the school psychologist. School psychologists often do educational and vocational counselling, but they also give advice and guidance on matters having to do with curriculum planning, teacher training, problems of parents, and the like. Thus educational psychology becomes a counselling psychology.

- (vii) *Educational Psychology is an Educational Science:* General psychology may be considered as the primary behavioural science. The domain of psychology is very broad, ranging from the study of the behaviour of single living cells of animals to the study of the collective behaviour of human beings. The domain of educational psychology is confined to educational problems and the behavioural problems of individuals in educational situations. Educational psychology collects necessary knowledge from general psychology to apply the same in educational setting. For example to discover what makes teaching effective and what makes learning effective, we need the help of several special areas of general psychology. From developmental psychology the teacher learns about human growth from infancy (and even before) to maturity—how physical, intellectual, emotional, and social potentials mature and change as a child grows, what conditions foster healthy growth, what conditions block it. Many changes in teaching method and curriculum have come about as more has been learned about the ways in which children typically develop and how their needs

change. Another focal point of attention has been the special problems of the child who is different" in some way.

The psychology of learning is concerned with how we acquire and change our patterns of behaviour, how this process takes place most efficiently how learning of different kinds can be measured, what conditions help us retain what we learn and use it appropriately in new situations and how learning varies with different levels of ability. Many kinds of learning "content" are involved in school work—from simple muscular responses to highly complex intellectual processes. A teacher's need for studying the psychology of learning is obvious.

It becomes evident that modern psychology offers a great deal of help to educational psychology to apply scientific principles to educational settings and thus educational psychology becomes an educational science.

✓ Educational Psychology is concerned with Human Factor in Learning

The *Encyclopedia of Educational Research*, Seagoe (1960) defined the nature of educational psychology as follows:

Educational psychology is concerned with the human factor in learning. It is a field in which concepts derived from experimental work in psychological laboratories are applied to education, but it is also a field in which experimentation is carried out to test the applicability of such concepts to education and to round out the study of topics of crucial interest to teachers. It is the study of the learning—teaching process in its various ramifications.

Educational Psychology is a Growing Science

Historically, educational psychology begin with William James and Edward Thorndike in the USA in the late 1800s. Since then the field of educational psychology has been influenced by work in related fields such as developmental psychology, educational measurement, cognitive psychology, social psychology, educational measurement, individual differences and most recently computer science. Researchers, who are involved in scientific study of techniques that can be used to enhance the teaching-learning process are contributing many new ideas to be applied in the field of education.

What Educational Psychology is Not

So far we have been talking about what educational psychology

is (nature of educational psychology). Let us now look at some of the popular misconceptions of educational psychology.

(i) *Not the nature of the subject but its application in the classroom is its real Nature:* The nature of educational psychology is no way concerned with the nature of the subject matter itself but with its application in the classroom situation. Knowledge of psychological theory alone cannot help the classroom teachers to deal with the students. Their knowledge in theory should be connected with classroom practice.

(ii) *Educational Psychology is not Mysterious:* Many people imagine that educational psychology is something magical or mysterious and that somehow educational psychologists have a superior or almost superhuman way of looking into the thoughts, feelings and problems of learning of the students. The notion is, in other words, that there is a psychological method on approach, and that anyone who knows how to use this and uses it successfully has an advantage over anyone who lacks it.

(iii) *Educational psychology is no more mysterious:* It has no magic, no mysterious ways of solving educational problems. Whatever principles the educational psychologists are applying, they have learned through observation, through careful reflection upon what they have observed and through the checking of their conclusions with other individual students. Hence educational psychology is neither magical nor mysterious.

(iv) *Educational Psychology is not Commonsense:* Some people go to the opposite extreme and assume that educational psychology is essentially nothing more than common sense. To them, educational psychology is simply what wise people have discovered from their experience, whether they have ever had formal training in the educational psychology or not.

Although all psychology should be consistent with common sense, common sense is not always in accord with scientific fact as represented by psychological findings. Many commonsense "truths" are plausible in the sense that they could be true but just don't happen to be so, commonsense principles are not necessarily wrong but neither are they necessarily correct. Hence commonsense can not be applied to psychological principles in education. It can not serve as a substitute for such principles.

Scope of Educational Psychology

Scope means, the limits of a particular subject in the field of its operation, what is to be included in its study or what subject-matter does it contain comes under its scope. Educational psychology, as discussed so far, deals with the behaviour of the learner in educational situation only. Therefore, it becomes imperative that educational psychology should limit itself within the four walls of the teaching learning process and educational environment. It must try to solve the problems evolving in actual teaching-learning situations and help the individuals involved in this process.

The psychologists who deal with the problems of education are concerned with what to teach, when to teach and how to teach. A famous psychologist, *Lindgren* points out that educational psychology is concerned with understanding the learner, the learning process and the learning situation. The scope of educational psychology may be discussed under the following heads:

- (i) The learner (pupil)
- (ii) The learning process.
- (iii) The learning situation.
- (iv) The learning experience.
- (v) The teacher.

(i) *The Learner* : The term learner applies to students who individually or collectively participate in the educational programmes. These students taken collectively constitute the class. In fact the behaviour of the class is none other than the behaviour of the students. There can be no teaching without there being a learner. Therefore, Sir John Adams once remarked "Teacher teaches John Latin. Teacher must have the knowledge of John, before he teaches Latin. Since the knowledge of John is psychology, teacher must study psychology." The teaching of Latin without the knowledge of John will not be effective. Johnny (the learner) thus becomes the centre of the teaching—learning process.

From psychological point of view Johnny is a child and he should be considered not as a small man but as a man in the making. His needs, ambitions, fears and other emotions are not the same as those of an adult. Treat him therefore as a developing organism which is unique and not as a small model of an adult.

Two learners of the same age differ from one another in a number of ways. When one has a liking for music and dislike for mathematics and science another may have dislike for music and liking for mathematics and science. Hence, while preparing the curriculum for the learners we must take into consideration the individual differences that exist among the learners.

However, intelligent a learner may be he cannot become successful in life if he lacks motivation. Hence motivating the learner is very important in the classroom situation from psychological point of view. Not only motivation but also the developmental characteristics, personality, mental health, individual difference and intelligence etc. of the learner come under the scope of educational psychology.

(ii) *The Learning Process*: Learning is the process by which we acquire and retain attitudes, knowledge, understanding, skills and capabilities that cannot be attributed to inherited behaviour patterns or physical growth. Capacity for learning is related to innate physiological factors. Rate of learning depends on both inherited and environmental factors.

Each type of learning goes by a different name:

- (a) Affective learning has to do with feelings and values and therefore influences our attitudes and personalities.
- (b) Cognitive learning is achieved by mental processes such as reasoning, remembering and recall. It helps in problem solving, developing new ideas and evaluation.
- (c) Psychomotor learning has to do with the development of skills which require efficient coordination between our brains and muscles, as when we read or write or carry out physical skills such as balancing, skipping or juggling.

There are two main ways of learning :

- (a) *Deductive learning*: This describes the process by which a learner is presented with a hypothesis or general principle and applies a number of tests to it to discover whether it is true or not.
- (b) *Inductive learning*: This describes the process which is the reverse of deductive learning. In it, the learner examines related matters to see whether any general conclusion can be drawn.

A number of theories have been put forward to explain how we learn. All of them have conceived of learning as a process that progresses in stages.

- (iii) *The Learning Situation*: It is difficult to imagine any period of our lives situations, when we are not learning something, even though we are not always aware that we are learning. While walking down a street on any ordinary day, we continually modify our behaviour (Learning is commonly refers to the modification of behaviour through experience) in response to environment. Thus learning situation covers all life experiences that modify our behaviour.

From academic point of view learning situation refers to the classroom setting, which is composed of pupils, a teacher and a room. All have unique characteristics. In addition to these features, we also have the behaviour of teachers and pupils. Behaviour includes not only overt physical activity such as talking and doing, but also cognitive processes like cognizing, thinking and evaluating. In the classroom and the school, the teacher is to help bring about desirable changes in pupil behaviour. Through the teacher's interaction with students and the students' interaction with one another, many desired interests, motives, social skills, and many outcomes in the cognitive and the psychomotor domains are acquired more efficiently than if there were no partial interaction.

- (iv) *The Learning Experience*: Although Educational psychology does not connect itself directly with the problem of what to teach or connect itself directly with the problem of what to teach or what learning experiences are to be provided for the learner yet it has the full responsibility of suggesting techniques of acquiring the learning experiences. Once the task of Educational Philosophy to decide the aims and objectives of a piece of instruction at a particular stage is finished the need of educational psychology is felt. At this stage, educational psychology helps in deciding what learning experiences are desirable at what stage of the growth and development of the learner so that these experiences can be acquired with a greater ease and satisfaction. In this area Educational Psychology has the subject matter which deals with the knowledge and principles of psychology which facilitates the selection of the desirable learning experiences for the learner.

- (v) *The Teacher*: It is not enough for a carpenter to be good at sawing planning and polishing wood, because every kind of wood has different characteristics and behaves in different ways under his tools. The skilled carpenter needs to know about trees, their variety, their characteristics and how to make the best use of them. So is with the teacher. Teaching skills alone are not sufficient. He must understand the children as learners. He must try to recognise those characteristics that are of significance in helping each child to learn more effectively.

Any teacher who knows anything about the learners is aware that growing up is more than growing bigger. Children are not little adults nor are adults big babies. It is essential, therefore, that teachers who are closely concerned with children during that period in life when some of the most important developments take place should know as much as possible about the process of growing and developing.

One of the first things we notice when we try to understand the learners is how differently they are: how each develops at his own pace and along his own path of progress. No child is typical; each one is in his own way unique. Yet, like the doctor who must learn to recognise which symptoms are serious and which are trivial among his patients' complaints, so the teacher must learn to distinguish between those variations that are normal and those that may indicate a child in need of special attention.

Understanding the learner from psychological point of view is an attempt to find out as much as possible about a particular learner by spending some time with him and learning about his physical, mental and personality characteristics and relevant facts about the environment in which he is growing up. Recording such child studies is important so that the information can be used in wider studies or, where necessary, for helping a child with problems.

Unlimited Scope of Educational Psychology

In an important sense, it is not desirable to limit the scope of educational psychology to the above five areas only. Educational psychology is a developing and a first growing science. Like any other developing branch of science it multiplies itself every year. New ideas are coming into picture because of the results of new researches and experiments in the field. Society is dynamic in nature. So also education. The new problems in the process of education are coming with a

faster rate and for their solution, educational psychology is trying harder and harder with the result of the development of new concepts, principles and techniques. For example, traditionally developmental psychologists were concerned with the study of the child development, but in recent years adolescence, adulthood and old age have drawn increasing interest. A major concern of developmental psychologists has been the process of socialization—how the immature, a social, and relatively helpless infant is transformed into a functioning member of society. An important part of socialization is the process whereby language is acquired and this is now an area of vigorous research activity. Although developmental psychology has been with us since the very beginning of psychological study, its current popularity clearly is increasing. This example proves that it is unwise to fix the boundary of educational psychology by defining its scope. It will not only harm the progress of educational psychology but also prove as a great obstacle in the progress of education.

The boundaries of educational psychology, therefore, must be left free for its future expansion so as to facilitate the inclusion of all what is created in this field. As a result of which we can solve most of the problems of education and to help the teaching-learning process to meet the demands of new time.

Aims of Educational Psychology

According to Skinner the general aim of Educational Psychology is to provide a body of organised facts and generalisations that will enable the teacher to realise increasingly both cultural and professional objectives. An analysis of the general aim reveals many specific aims. Some of the more important of these specific aims, are results, that may be expected from the study of this subject are the following:

1. To develop a conviction and realisation of the extent that growth can be promoted learning acquired, social behaviour improved and personality adjustments effected. The realisation of this objective will produce an increasing appreciation of what educational psychology contributes to the teacher.
2. To assist in defining and setting up educational objectives and standards in terms of desirable behaviour (conduct, attitudes and so forth) that ought to be the goal of all teaching efforts.
3. To aid in developing an impartial but sympathetic attitude towards children so that their behaviour will be regarded objectively.

EDUCATIONAL PSYCHOLOGY—ITS MEANING, NATURE AND SCOPE

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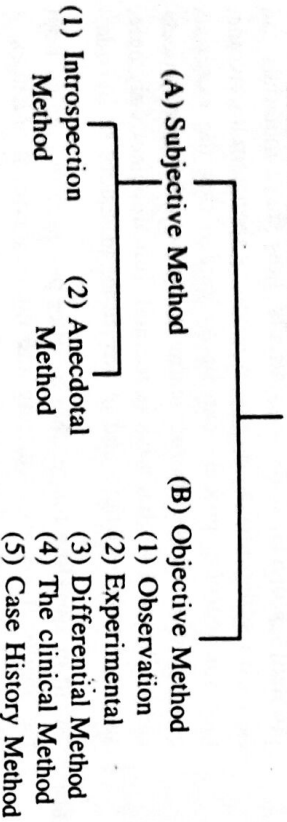
4. To assist in achieving a better understanding of the nature and importance of social relationships and the method of developing in children such modes of social functioning as getting along with others, participation in group efforts and co-operation.
5. To provide a body of facts and principles that can be used in solving the problems of teaching: how the materials of instruction can best be selected and organised in to a graded series of problem—projects, units or contracts, how these materials can be used intelligently as means of attaining the desired outcome, how the learning process can be so guided that the materials and methods will not obstruct learning, and how the entire process can be directed so that what is learned, functions not only here, and now, but anywhere and at any time, in school or outside.
6. To aid in affording the teacher a better perspective judging both the results of his own teaching and the educational practices of others. Educational psychology helps develop a scientific, problem—solving, attitude towards the problems of education.
7. To furnish the teacher with the necessary facts and techniques for analysing behaviour both his own and that of others to the end that normal adjustment may be facilitated and growth in personality effected.
8. To assist in setting up defining and maintaining progressive teaching procedures, guidance programmes and functional programmes of organisation and administration.

Method of Investigation in Educational Psychology

Educational psychology is defined as the study of human behaviour in educational situations. It aims at developing necessary skills and competencies in the prospective teacher to enable him to understand, control and predict the behaviour of learners. To achieve its basic objective educational psychology takes the help of various methods and techniques to collect data on problems of behaviour of the teachers. Some of them are termed as subjective methods and the others as objective methods. A subjective method involves personal element whereas objective method is free from personal bias. In one way or the other all methods are found to possess some subjective and objective elements. Therefore, it is not proper to classify them as subjective and objective.

Since educational psychology is an applied branch of general psychology it uses the research findings and principles developed by psychology in laboratory to improve class room instruction. Human behaviour is dynamic and it cannot be repeated exactly as before. Therefore, in the study of behaviour of children, adolescents and the grown up people, the following methods are commonly used.

Methods of Investigation in Educational Psychology



For the better understanding of these methods, they are described separately in the following. The teacher will himself judge which one of the methods a combination of them is best suited to a particular type of study in a given field of education.

Introspection

Introspection is the oldest method that was known to the early psychologists. Formerly, when psychology was very near to philosophy, the study of mind or consciousness was carried over by introspections. This method continued to be used as a reliable method of investigation in psychology till psychology gained ground as a positive science of behaviour.

Meaning of Introspection

The term introspection is derived from two words "intro" and "specion". 'Intro' means "within" and 'specion' means "looking" or "observing". Thus introspection means "looking within" or "observing within" one self to experience one's own mental state. It is a kind of self observation or self examination. Woodworth calls introspection as "self observation" and Angel defined it as "looking inward".

Introspection Provides Direct Information

One of the important features of introspection is that it provides direct and first-hand information about all that happens in the mind of

a person. Perhaps there is no better way of collecting informations about what goes on in the minds of other people than by turning to one's own mind and observing what goes on there. If we look within, by examining minutely what takes place in our own mind, we can sharpen our knowledge of our own self and get insight in to the mind of the others.

In the modern times this method is apparently considered as unreliable, dubious and risky. In spite of this, it serves the purpose of the teacher in a given situation. For example, a perspective teacher might say, "because I found thus incident in my mind in such and such a situation, therefore the same might be taking place in the minds of my students in similar situations." Hence this method of investigation cannot be abandoned from the teaching learning situation.

Merits of Introspection

- (i) Introspection provides opportunity to the individual to get direct immediate and intuitive knowledge about his mind.
- (ii) An individual actually observes and not speculates his own mental process.
- (iii) This method is simplest and most economical method as it requires no laboratory or finance etc.
- (iv) It is important for exposing the intimate poignancy and intensity of certain experience which cannot as yet be measured or evaluated thoroughly in any other way.
- (v) Self-evaluation and self suggestions help the teachers for the improvement of their teaching.

Limitation of Introspection

- (i) The most serious objection against introspection is that it is most subjective, personal and unscientific. In this method one studies one's own mind. It is not possible to verify the individual's observation as there is no provision of study of one's own mind by others in introspection. Besides this two persons cannot observe the same mental process. Therefore, it is difficult to arrive at universal generalization through the method. The mind in perceiving its own function, their to divide itself into two parts – the subjective and object. The object to observation and the instrument of observation are just one and the same. It affects the exactness and reliability of observational process. For example, an individual,

who is angry or afraid can not exactly see what is going on in his mind and remains unchanged in his emotional state of anger or fear. The conscious in his part will definitely affect his emotional or mental state which is the object of observation.

(i) Another criticism has been that introspection is impossible because the movement we begin to attend to our own mental process they tend to disappear. Our inner experiences are extremely evasive and hot-lived. As soon as we turn to think about our joy, sorrow and anger we find that the experience itself either disappears or changes into an entirely different one.

(ii) Further none, it has been held that the application of this method is a narrow one. Introspection can only be applied satisfactorily, in the case of the adult, normal beings. We can not help the children, abnormal human beings "animals etc., by the help of this method. Children and abnormal persons are usually not capable of turning to themselves and reporting their inner mental process. An educational psychologist might do without a knowledge of abnormal persons to some extent. But a scientific study and proper understanding of child life can never be ignored by him for obvious reasons.

(iv) It has been observed that one's thought, feeling, emotions and desire change in every moment. Therefore, when one concentrate to introspect a particular phase of mental activity that phase passes off. For instance, when one gets angry at something and afterwards, sits down calmly to introspect oneself, that state of anger is sure to passed on and so what one tries to observe is not what is happening at that time with oneself but what has happened sometime before.

(v) The application of this method is Educational Psychology tantamounts to reducing it into a purely subjective branch of knowledge and to excluding it from the realm of the objective sciences. The collection of data in this method is subjective in nature. It is not possible to prove the reliability of data. In reliability it is not at all possible to prove the reliability of data. In reliability it is not at all possible to explore the mental process of an individual.

Because of the defects cited above and a number of other defects in the introspective method, the modern psychologists pay relative by little attention to this method of investigation.

Interview Method

Interview is one of the chief means of collecting data about human behaviour. It is an effective tool in the hands of the psychologists, educationists, physicians and the social workers.

The term interview means "conversation with a purpose". This method helps to know the views and ideas of other persons. It is considered as a systematic method of mutual contact of people. It is a good source of hypotheses as well as a good means of testing hypothesis regarding human motivations and socio-personal interactions. Interview makes possible a face-to-face association and a process of interstimulation between the interviewer and the interviewee.

Interview Defined

The term interview has been defined by different scholars and thinkers in many different ways. Some of the definitions are given below :-

Young: "The interview is a technique of field work which is used to watch. The behaviour of an individual or individuals to record statements, to observe the concrete results of social or group interaction. It is, therefore, a social process which usually involves interaction between two persons".

Hader and Lindman: "Interview consists of dialogue or verbal responses between two persons or between several persons."

P.V. Young: The interview may be regarded a systematic method by which one person enters more or less imaginatively into the inner life of another who is generally a comparative stranger to him".

Goode and Hatt: Neither reliability nor depth can be achieved, however, unless it is kept clearly in mind that interview is fundamentally a process of social interaction".

Characteristic of Interview

The characteristic of interview, which are based on the definitions given above are outlined below :-

- (i) It is a close contact or interaction including dialogue between two or more persons.
- (ii) There is a definite object of interview, such as knowing the views and ideas of others.

(iii) There is face to face contact or primary relationship between the individuals.

(iv) Through this method data is collected for study of social problems.

Types of Interview

Interview may be categorised on the basis of characteristics and qualities. While conducting an interview. The interviewer and the interviewee come in close contact and exchange thoughts. Interview may be classified under the following needs :-

- (1) Clinical interview,
- (2) Selection interview,
- (3) Diagnostic interview, and
- (4) Research interview.

(1) **Clinical Interview:** This is an interview through which attempt is made to know the causes of certain abnormalities. Once the causes have been ascertained, the remedy is sought.

(2) **Selection interview:** This type of interview is done with the object of selecting a person on the basis of certain traits and qualities. The interviewer through interview ascertains the qualities that are required and makes selection.

(3) **Diagnostic interview:** When the object of the interview has been found out the serious causes if some social events or problem, it is called diagnostic interview. This interview is confined to finding out the causes.

(4) **Research interview:** This is in fact a kind of diagnostic interview in which we try to find out the causes of problem. But in this method, a comprehensive study is made of the problem so that the cause will be found out in detail.

Non-directed Interview: This is an uncontrolled interview in which no classification plan is drawn about question to be asked. Through dialogue and conversation, the informant is encouraged to exhibit and express his knowledge and views. The interviewer, in this type of interview collects the information. There is no controlled direction so far as questions are concerned.

Group Interview: A group of persons is interviewed for ascertaining their views, or collecting information from them, it is known as a group interview. Generally this type of interview is carried in group.

Individual Interview: When the interview is confined to an individual or an individual informant, we have individual interview. On this method or type of interview, we collect information from individuals.

Techniques of Interview

As the term implies, interviewing is an intentional process. It is a mutual view of each other. To conduct an interview, we usually follow the following techniques.

(1) **Interview requires preparation in advance:** The interviewer should be properly introduced to the interviewee. Suitable time and place for interview should be fixed. When the study is concerned with a community or a cultural group, the cooperation of the leaders should be secured.

(2) **Purpose of the interview:** After initial introduction with the interviewee, the purpose of interview should be explained. The respondent should know why he is being interviewed. The purpose of study explained to the interviewee lend dignity to the interview. Under such circumstances the interviewee is able to establish report. If report is established frank information with minimum of defensive reactions are obtained.

(3) **Sympathetic listening:** On the part of interviewer sympathetic and respectful listening is of primary importance. According to P.V. Young, "Ability to listen with understanding, respect and curiosity is the gateway to communication. When an interviewee feels that he will not meet with interruptions, denial, contradictions, and other harassments, he is not likely to resist and withhold information. "But mere listening is not sufficient. The listener, at, he same time must be analytic."

(4) **Balanced and timely questions:** Questions during the process of interview, should be balanced and timely. Besides, the questions must be phrased in terms of interviewee's problems. Blunt and direct questions cause antagonism. In order to secure cooperation, the questions should be indirect. Similarly, double questions should be avoided, because they often create confusion.

(5) **Critical points should be avoided:** During the process of interviewing, critical points should always be avoided. When the conversation turn to intimate subjects and emotions are displayed by the respondent, the interviewer should then drop the subject

for the time being. In order to avoid emotional blockage, attention should be diverted to another questions.

- (6) **Closing of interview:** In every interview, there is a natural closing point. Useful results might be obtained if interview breaks off at the time when the interviewee is fresh and proposes another talk. Every information should be secured before the interview is closed. Besides, if an interviewee desires to treat his information confidentially, then utmost care should be taken in respecting his wishes.

✓ Observation Method

With the application of scientific principles to psychology, Sheer speculation of human behaviour was given up altogether. The psychologists tried to follow scientific and objective methods like observation and experimentation for its study. Strictly speaking, there is only one method which is always pursued by sciences.

The word observation has been derived from the Latin word 'observare' which means 'to keep open'. On the face of it, observation seems to be easy and simple. We simply keep our eyes open and we see certain things. But it is not quite so simple as it seems. Observation is much more than seeing something. It also involves a mental process. In all observations there are two elements, the sense-perceptual and the mental. We make observations with the help of senses like seeing, hearing etc., but along with that mind also works. Observation, also involves interpretation of the sense experiences by our minds. When we see Ram, we may be seeing only certain coloured shapes in the strict sense. As a result of various experiences those colours come to mean Ram with all his qualities. The same process of interpretation takes place when we observe a house, a horse, or a star.

Observation may be defined as the careful and systematic watching of facts as they occur in the course of nature. In every act of observation there are two components. The object, or what is observed, and the subject or the observer. It may be that sometimes one may have to observe one's own immediate experience. That would be subjective observation or Introspection. Many of Psychological interest are gathered by the method of subjective observation. On other hand in many investigations, the observer is an entity apart from the thing observed. Observation of this type is objective observation or Extrospection. In recording social data, objective observation is more appropriate as composed with subjective.

All Psychological Phenomena cannot be artificially created in a laboratory. In many situations data is collected by the method of systematic observation of the Phenomena as they occur in nature. It is same as the experimental method in the sense that it measures the effect of independent variables. But it is different from it in the sense that the observer does not manipulate the variables as the experimenter does in the experimental situation. Nature has already done the manipulations. The observer simply systematically examines the affect of the variables by studying the different manifestations of the same phenomenon.

Every mental process expresses itself through outward behaviour. Hence we can infer the mental processes of others by observing the behaviour of others. To acquire knowledge about mind and psychological processes we can observe.

- (a) The looks, gestures, language of groups of peoples.
- (b) The manners, customs, conventions, traditions, prejudices, beliefs of large groups of people.
- (c) The differences of behaviour between groups of people.
- (d) The outward signs of mind (i.e. overt behaviour) of lower animals, children and savages compared to adult citizens.
- (e) The processes of the nervous system, the muscles, senses etc. running parallel to and interacting with the mental processes.
- (f) The outward behaviour of psychotic and neurotic minds and of minds in abnormal conditions generally.

By observing the above, inferences are drawn about mental processes and the impact of various variables upon them. Precisely, therefore, observation is an experiment in an uncontrolled and natural setting. The data obtained from observation are as viable and meaningful and more varied than those obtained by experimental method.

Procedure to be followed in observation

- (i) At the out set a plan must be made and the points of observation are to be written carefully.
- (ii) Behaviour should be observed accurately with specific purpose.
- (iii) Immediately after observation, the observation should be carefully recorded.

- (iv) After recording, the observed facts should be scientifically analysed.
- (v) Lastly, the observation should be interpreted and generalized.

Merits of Observation :-

- (i) Findings of observation are always systematic, reliable, planned and specific.
- (ii) It is economical and flexible.
- (iii) By the help of this method, one can supervise the teaching work and give constructive suggestions for improvement.
- (iv) Observation prepares a solid ground for experimentation.
- (v) It is easy to study the behaviour of human children and animals easily.
- (vi) This method is more objective and valid than introspection.

Limitation of Observation Method

Although observation is considered as an affective method for psychological studies, it is not free from criticism. It suffers from the following drawbacks.

- (i) It is not possible to observe what is happening in the minds of the others. One can reason through their external behaviour. Some times, a person may hide his feelings and emotions and can disguise the evil nature under the cover of artificial sobriety. In such cases of hypocrisy, the method of observation proves a failure to judge a person.
- (ii) Some times, observers may try to project their own feelings, thoughts tendencies etc. in other minds. A pious man apt to think everybody to be pious and a rogue thinks other to be rogue.
- (iii) Observation may also be coloured by prejudices and bias attitude of observers. We show good attitude towards our favourite and affections and suspicion and doubts towards our unfavourites and enemies.
- (iv) It is difficult to get trained observers, who can observe scientifically.
- (v) It is difficult to study the internal behaviour of an individual.

3 Experimental Method :-

Among all the methods of investigation experimental method is considered as highly developed, formalised and most accurate method of studying behaviour. It provides a procedure for testing the validity of hypotheses and predictions.

In this method, emphasis is given on experimentation. Experimentation consists of objective observation of actions performed under pre-arranged or rigidly controlled conditions. Out of these observations certain conclusions are drawn and principles or theories are formed.

Essential Features of Experimental Method

- (i) **Psychology Laboratory:** There must be a well equipped psychological laboratory, where experiments will be conducted.
- (ii) **Experimenter and the Subject:** To conduct psychological experiments this method requires two persons the experimenter and the person or subject whose behaviour is observed.
- (iii) **Controlling the Conditions or Variables:** One of the most important factors in this method is the conditions or variables. It helps us to eliminate irrelevant conditions or variables and isolate relevant ones. Thus we can observe the casual relation between the two phenomena keeping all other conditions almost constant. For example, if we try to study the effect of intelligence on academic achievement by experimental method, we will need to discover the causative relation between the two phenomena (variables) intelligence and academic achievement. One of these variables the effect of which we want to study, will be called independent variable and the other as dependent variable. Thus independent variable stands for the cause and dependent variable is characterized as the effect of that cause. The other conditions like study habits, sex, socio-economic conditions, parental education, home environment, health, past learning, memory etc. which exercise desirable impact upon one's achievement besides his intelligence are termed as intervening variables. In experimentation all such intervening variables are to be controlled i.e. made constant or equalized and the effect of only one independent variable like intelligence in the present case, is studied on one or more dependent variable. For this we try to change and vary the independent variable. It brings concomitant changes

in the dependent variable or variables. These changes are objectively observed and measured and on their basis conclusions are drawn.

Experimental Designs

We can perform experiment with the help of one of the several designs available. These designs help the investigator to control the variables and measure their effect.

(i) **The Control-test Method:** In this method experiment is conducted on a single group. Here we try to differentiate by observing the performance under different conditions. First we observe under normal conditions and then again with one condition changed. In this experimental design there is no need of having two different groups of subjects for the experiment. Only the measures can be taken several times under different conditions.

(ii) **Control-group Method :** This design needs two equated groups, which are made to function under the same conditions, except in the difference in independent variables. These two groups are known as experimental group and control group. They are equated or matched on various traits like age, sex, intelligence and other personality characteristics. There is one to one correspondence in the two equated groups. Now the one group control group is given sugar capsules and tested on some intelligence test. At the same time the experimental group is given drug capsules and tested on the same intelligence test. Then the difference in the intelligence scores of the groups are calculated. In case we find some significant differences, they are attributed to the effect of drug.

(iii) **Rotation Method :** This method presents two or more stimulating situations to the experimental subjects in as many sequences as necessary to control the serial effects of fatigue practice or transfer. For example if we want to determine the relative influence of two specific conditions. A and B (say praise and blame) on a group of subjects we will not measure all the subjects under condition A and under condition B. Condition A might so fatigue or train the subjects that the measures under condition B would not be independent of the fatigue or training effects. We can adopt two alternatives here.

(a) One may obtain half the measures for condition A all the measures for condition B and then the other half of the measures for condition A. We may call this technique ABBA order.

(b) Another alternative is to separate the subjects in to two equated groups, one of which receives treatment 'A' and then 'B' where as the other group receives treatment B and then A. Both sets of A results and both sets of B results may then be combined together and then we are to calculate the difference between the two.

Advantages

Experimental method is the most significant method of obtaining knowledge in the domain of education. Several important educational problems pertaining to the field of learning, teaching, discipline and administration have been and are being better understood through the experimental method.

For example, in order to study the efficiency or otherwise of a method of teaching science to a particular class through audiovisual aids a teacher may select two groups of students from the same class, making one the control and the other the experimental group. He may then proceed with teaching science to the experimental group with the help of audio-visual aids. At the same time he continues teaching the same subject to the control group in the usual way, i.e. without employing any audio visual aids material. At the end of a prescribed period of teaching he might give a test in the subject to both of the groups. If the experimental group does well in the test as compared with the control group he has experimentally proved the efficiency of the teaching method under investigation.

The experimental method is now being very popular in educational psychology. As a result of a countless series of extremely enlightening experiments on educational problems a number of objective and precise techniques of understanding and teaching the children are now available for use in schools. Vision and hearing of children for example, can now be measured under controlled conditions consequent upon experimental investigations in the psychological laboratories a great deal has been discovered about the span of attention, the causes of fatigue and boredom, the teaching and learning of Languages and other special subjects, the rate of remembering and forgetting in varying conditions.

transfer of training, learning of desirable and undesirable habits and attitudes by the students, etc.

A successful education of the child and an efficient administration of a school in modern age needs more and more thorough and frequent application of the experimental method in actual school conditions and life situations.

Obstacles in the Method

In the use of this method, there are some obstacles. Every educational problem can not be subjected to an experimental investigation. Further more great fact and psychological insight is needed to conduct a psychological experiment in a given field of education. Application of the findings of an experiment to an actual classroom situation is still more difficult. Such obstacles can be over come on at least minimised if the experienced school teacher and learned educational psychologist co-operate with each other. It would be ideal if they under took to conduct an experimental investigation in close collaboration with each other. Such an experimental co-operation will be of great mutual help to both of them. The educational psychologist will then be able to conduct the experiment in conditions very much like the real teaching and learning situations. Correspondingly the teacher will experience little difficulty in understanding the nature and purpose of the experiment and in applying the beautiful findings of a specialist in a particular field of education.

Limitations

However there are certain points, where the experimental method has been criticised. They are :

- (i) Experiments are conducted under laboratory conditions. Such artificial situation is different from spontaneous or natural individual.
- (ii) Success of this method lies in controlling of conditions and variables. But it is not always possible to know and control all the intervening variables.
- (iii) It is lengthy, time consuming and a costly method.
- (iv) Results of experiments made by the help of animals may not be applicable to human children.
- (v) It is difficult to control internal mental condition of an individual

(vi) It is difficult to conduct experiments on all problems that are raised in the hydrogenous subject matter of psychology.

(vii) When the subject is uncooperative. It is difficult to conduct this experiment.

Psycho-Analytic Method

The founder of this method is Dr. Sigmund Freud. According to him there are three levels of mental activity. They are, the conscious, preconscious and the unconscious. At the conscious level individual can recall everything easily and behaves with understanding, at the preconscious level, he can recall his experiences with little difficulties, but at the unconscious level, he does not have any control over his own attitudes, desires and feelings. Time and space do not have any control over unconscious.

Id' Ego and Super Ego :

Personality of an individual consists of three aspects - Id Ego and Super Ego. It is the basic biological on animal urge and it is located at the unconscious level, it is guided by pleasure principles. It is not under the control of time and space. Ego is self-feeling through which an individual feels himself different from his environment. Super ego is social and cultural ideas or standards. The Id serves for pleasures, the ego helps to adjust the demands of pleasure seeking and Id with reality. Super ego provides moral ideals.

An individual is motivated to work by his biological energy. This biological energy has two aspects.... constructive and destructive. Constructiveness or life urge is termed Eros and destructiveness or death urge is termed thanatos Eros or life urge works through libido and ego by reality principle. Libido is represented by the Id and is expressed by such phenomena as satisfaction of physical needs. Thanatos or death urge is guided by 'nirvana' principle. It is also represented by Id but expressed by destructive acts. Pleasure seeking behaviour is characteristic of an individual in infancy but later on the individual learns to behave in accordance with reality, the pleasure principle is, therefore, modified.

By the help of this method, we study the behaviour of abnormal individuals and it aims to help them to get rid of the difficulty or trouble, they are experiencing. In this way it serves as a method of

diagnosis and treatment of mental disorders. This method, generally involves the following steps :-

- (1) **Establishing Rapport:** First of all the psycho-analyst tries to establish a reciprocal emotional bond between himself and the patient. It is technically known as rapport. This can be established through sympathetic and co-operative attitude of the psycho-analyst and his insightful judgement of the human nature.
- (2) **Analysis:** After establishing rapport, the patient is asked to relax on a couch in a semi-dark room and the psycho-analyst tries to persuade the patient to talk about his trouble without any reservation on his part. The secret of the success of the psychoanalytic method completely lies in the extent to which this reservation is broken down. This helps in disclosing the root cause of the trouble for the purpose of analysis. Psychoanalysts, generally, make use of the following techniques:-
 - (a) **Free-association technique:** The patient is asked to express freely whatever comes in his mind. From this free expression, the psychoanalyst tries to discover the cause of his maladjustment and abnormal behaviour.
 - (b) **Dream-analysis:** Dream is a continuation of thinking in sleep. The unfulfilled desires are fulfilled through dreams. Therefore dreams can reveal the unconscious mind. By the analysis of the dreams of the patient the causes of repressions, conflicts and maladjustment can be discovered.
 - (c) **Analysis of the daily psychopathology:** The psychoanalyst can also make use of this technique in discovering the causes of maladjustment and mental disorders. It involves the interpretation of the patient's slips of pen, tongue and behaviour, and is quite capable of mirroring his unconscious mind.
- (3) **Synthesis:** After discovering the root causes of the trouble the psychoanalyst tries to help the patient in the task of reconstructing the psyche. The patient is made to accept the reality principle and is helped in the catharsis of the repressed wishes and desires.
- (4) **Breaking of the Rapport:** In the end the attempt is made to break the rapport. The patient is made to stand upon his own feet. He is made to realise that the psycho-analyst is to help him

in solving his behavioural problems and he has to face the reality independently.

In this way psycho-analytic method proves its worth in discovering the children areas of human behaviour. It can reveal the secret of the unconscious mind thus is a helpful instrument in discovering the root causes of the behavioural trouble. The latter aspect of this procedure helps in the readjustment and re-establishment of the mentally and emotionally disturbed personalities.

On the debit side, however, this method possesses the following limitations and drawbacks :-

- (i) It is a time-consuming method. It takes a long time, sometimes two or three years for studying and treating a single cause.
- (ii) Its practical applicability is extremely limited as it requires high expenses.
- (iii) The method cannot work satisfactory with children and people of subnormal intelligence.
- (iv) It is also not applicable in cases of serious mental disorders.
- (v) It requires highly experienced and specially trained psychoanalysts. Therefore, only the experts and specialized persons can make use of this method.

✓ The Case History Method : ✓

In this method the psychologists try to go deep into the past history of the subject in order to find out some of the important events or forces which are responsible for making him what he is. A case study is nothing but a collection of facts about an individual. The data regarding an individual previous history is collected from him and his associates and on the basis of such data conclusions are made. In this method the psychologists have together all the significant influences which operate on an individual. The psychologists have to collect the following informations about the child.

- (i) An over all picture of the child's environment.
- (ii) A record of the child's health and physical, mental, emotional and social development from conception upto data.
- (iii) An appreciation of the child's personality and

- (ii) An understanding of the specific factor (or complaint if any) for which the child is being studied.

The information stated above are collected from official record parents and friends, relatives, result of examinations, interviews reports of the teachers and even own story of the students. These data regarding the child are carefully recorded and interpreted in order to enable the parents, the teacher and the psychological workers to know the child and to help him in the situation.

Merits :

- (1) The case history provides first-hand picture about the child to the psychologists.
- (2) It provides insight in understanding the nature of the child.
- (3) This method is reliable, valid and scientific.
- (4) It studies the normal development of the individual.
- (5) It helps a lot in diagnosis of the case which suffers personal, social and educational abnormalities.
- (6) It is one of the best method for diagnostic studies.

Limitations :

- (1) This method emphasises on the collection of the records. But it is difficult to maintain record of every event of the child's history.
- (2) It is less reliable because the informations are not collected objectively.
- (3) This method requires highly trained and skilled persons otherwise it is difficult to give insight in to the nature of problem.
- (4) It is quite lengthy difficult and time consuming method.)

Clinical Case Study Method :

In course of living the child faces some serious difficulty about making a successful intellectual emotional or social adjustment at school or home. The most important characteristic of this method is that it deals the life history of the whole individual in his total environment. To collect necessary information about the child tests planned interviews and other clinical method are employed. Relivant data are collected through family history attitude towards friends and associates.

educational career, hobbies, leisure time persude, physical condition, intelligence etc. of the individual child and to help him in difficulties.

No doubt this is very thorough and rewarding method as its proper application is almost certain to save a child from developing into a failure in life. The application of this method needs much patience prolonged training and experience in clinical psychology. This method is more useful in the problems of reading disability stammering, antisocial behaviour, emotional disturbance etc.

Limitations :

- (1) This method is more useful in clinical psychology rather than educational psychology.
- (2) This is a lengthy, costly and time consuming method.
- (3) This method needs trained and experienced technical persons which is very difficult to get.

Testing Method :

Carefully devised and standardized tests are available in abundance purporting to measure individual, supititudes, achievements, intelligence and other personality traits. Problems constituting these tests are standardised on a certain group of people, for a certain age range and in a certain language. Intelligence test measure the intellectual ability of an individual in general or in a specific way and the achievement tests throw light on the achievement of subjects on their academic or vocal front.

Aptitude tests will enable a psychologist to evaluate the nature and degree of aptitude of a person for a certain activity or subject or profession personality inventories throw light on the general personality patterns, clustering of traits moods, temperaments, emotionality, inter-personal relationships and other qualities.

It is doubtful whether a single method of psychology is capable of giving an accurate picture of the behaviour of an individual in its entirety. To study the behaviour accurately and objectively, it is imperative to use more than one method in combination with some other method. Like other science laboratories, now a days, we have psychological laboratories where experiments on behaviour are done.

Rating Scale and Questionnaire :

These are common devices of observing and valuating personality traits and dynamics in various settings. Rating an individual possesses

or does not possess certain traits, through his response to the set questions. A rating scale is generally pre-validated. The individual is given a place on the scale on the basis of his response. This indicates the degree to which a person possesses a given trait of behaviour. The study of behavioural traits and degree of their presence or absence in an individual help the teachers to deal with such an individual in a right manner. In a checklist the examiners may be provided with a list of traits or qualities and asked to point out which of the traits or qualities are present in the individuals under testing. Questionnaires are series of printed or written questions which the individual is supposed to answer. On the basis of negative, positive or natural responses, it is determined whether a certain individual possesses certain qualities or not. In spite of the fact that there are numerous difficulties as to the objectivity of this method, the use of questionnaire has been very extensive in the research on personality in almost every field. Doubts have also been expressed as to the reliability of data obtained by the use of this method. However, much depends on how sincerely does the subject respond to the questions and how truthful his answers are. Where the subject is inhibitive and conceals or distorts information especially are relating to his private life. The rating scale loses its efficiency.

Genetic Method :

The genetic method purports to find out the causes of complicated behaviour in its simplest beginnings. It assumes that a full appreciation of such behaviour patterns of an adult requires the study of the simple behaviour patterns in his childhood. It is now widely known that the childhood tendencies do linger on throughout life. Certain complexes are formed in childhood itself and imbalance the behaviour patterns in latter life. Simple behaviour patterns become more complex gradually as the individual grows in years. Growth and development is a very important area of research in physical education especially from the point of view of motor skill learning. When growth and development are not properly synchronised the individual does develop abnormal behaviour. The genetic method has furnished valuable information to the formation of general principles of growth and development right from the zygotic stage to the adulthood. However, it is a very lengthy procedure and requires a very patient and consistent effort on the part of the research worker. Whether or not an individual will become a top class competitor can easily be predicted with certain amount of accuracy on charting out the patterns of his behaviour from birth through

various developmental stages. Perhaps, scientists are able to know the innate potential of the child by studying his genetic code and history of his family.

Relevance of Educational Psychology for the Classroom Teachers in Understanding the Learner :

The Learner :

Teachers in modern schools, whether primary or secondary, are often amazed at children's eagerness to learn, at their creative, problem solving, persistent efforts in self-development and their academic, athletic and artistic accomplishments. Trained teachers, who are curious and scientifically oriented often wonder *why* and *how* children learn as learners and under what conditions they might learn even more effectively. They also wonder why some of their pupil do not learn, why they do not want to learn or why they cannot learn. The answers to these questions is relevance of the knowledge of psychological principles for the teachers. The teachers can obtain positive results, if they can apply psychological principles in the classroom, laboratory, on the play ground in any learning situation.

Teachers and prospective teachers at the secondary stage of education, therefore should try to enhance their understanding of their pupils by studying educational psychology. Thus they can provide proper guidance for effective learning.

Educational psychologists have much to offer the secondary school teachers in understanding the learners, because they have extensive resources at their disposal. In their research, they have access to children of all ages and ability groups in ongoing complete learning situation. They also help the teachers in developing their understanding principles of teaching, especially in the field of learning, in understanding developmental tasks of adolescent, individual difference and mental health. From all these fields the teachers and prospective teachers become successful in understanding the learner.

The Learner's Development :

Modern education is concerned with the development of both the individual and society. It is the duty of the teacher to develop the constructive potentialities of every learner as fully as possible. At the same time he should aim to preserve and enhance the conditions of

constructive living in society. In addition to these, he should turn to the accumulated and continually expanding knowledge which makes up our cultural heritage and he should see that it is rich in curriculum resources. For the all round development of the pupils, the teacher should believe in a subject, child-community-centred education. When the teacher seeks to the development of the learner, he should look to the following aspects.

- (i) The teacher should enable the learners to achieve an inquiring mind, skills for effective communication, knowledge for maintaining, protecting and improving his health and for satisfying intellectual, recreational and aesthetic interests and skills and ethical character.
- (ii) The teacher should enable the learners to achieve comfortable, useful and happy social relationships in their families, with friends and with other people at work and play. The learner should to develop respect for humanity in general.
- (iii) The teacher should enable the learners to attain economic efficiency by becoming an intelligent consumer and by preparing for efficient work performance in a field suited to his talents and interests and to the needs of his society.
- (iv) The teacher should enable the learners to develop civic responsibility, which involves a sense of social justice, an understanding of his society, participation as a citizen, tolerance, interest in conservation and devotion to the ideals of democracy.

In summarizing the role of the teacher in the development of the learners we can say that the teacher should look to the development of a community of individual enjoying an increasingly satisfying constructive way of life. They involves the attainment of intellectual proficiency, occupational competency, effective group participation and leadership.

Besides the above areas, the teacher also gets help from educational psychology for the development of the learners in the following areas as well :

- (i) Physical development, health and body care, including individual health, elementary aspects of public health, safety, physical education, grooming, and understanding of growth.
- (ii) Individual, social and emotional development, including mental health, emotional stability, growth of personality, and self-understanding and evaluation.

- (iii) Ethical behaviour, standards and values including observance of moral and civil laws observance of the customs and mores of the culture and the development of such characteristics as sportsmanship, kindness and helpfulness.
- (iv) Social relations, a category which grows out of the preceding two and is "devoted to the individual as a person in his personal social relations with others with whom he associates in home, community, and place of work".
- (v) The social world, which considers the behaviour of the child in relation to the broader social setting of community, state and nation and includes geography, civics, economics, government and the traditional Indian way of life.
- (vi) The natural environment, as revealed by the physical and biological sciences, which emphasize learning to think scientifically and the use of scientific methods both as scientists and for solving problems in everyday living.
- (vii) Aesthetic development, including both appreciation of the arts and personal participation in art, music, crafts and other creative activities.
- (viii) Communication, including an understanding of the language, effective use of language skills in reading, handwriting, composition usage, spelling, punctuation, speaking and listening.
- (ix) Quantitative relationships, consisting mainly of arithmetic, including understanding our number system, knowledge of how it is widely used in solving quantitative problem in society, and the development of problem solving skills.

Kearning's Report

Within each of these nine board and interrelation areas, objectives are further classified as indicative of four "types of behavioural change".

- (1) **Knowledge and understanding:** Which would include the objective of learning "how to use the table of contents of a book".
- (2) Skills and competencies, under which we would place such objectives as "skill in attacking unfamiliar words".
- (3) Attitudes and interests, under which we would include "enjoyment of a wide variety of reading materials".

(4) Action patterns which "refers to broad generalized ways of behaving" such as ways of responding to problems situations through the union of intelligence with good working habits and scientific methods of thinking. According to Campbell-Stewart, educational psychology helps the teachers in the following way :

(i) *To outline aspects of the learning process* : Teaching methods rest fundamentally upon the psychology of learning. A teacher aims at modifying the experience and responses of his pupils in many ways. He should, therefore, know the conditions of the learning process thoroughly. Psychology helps him by rendering a most systematic and exhaustive analysis of the learning process.

(ii) *To outline the main phases in psychological growth from infancy to maturity*: The infant, the boy, the adolescent and the young man have different outlooks and attitudes. A systematic study into the characteristics of each one of these developmental phases will not only be interesting but also rewarding for a teacher who desires to be successful and effective in the classroom. Detailed information regarding these stages of growth is furnished by psychology.

(iii) *To match subject matter and processes to be learned to labels of development and psychological principles*: A practical outcome of the study of development stages is the equipping of the teacher with the skill to match the class instruction with the mental levels of the learners. Educational psychology also helps in the formation of the guiding principles which are the bases of this correlation of the curriculum and teaching to the psychological growth level of the learner.

(iv) *To give some training in assessing and making allowance for the social matrix beyond the school in which the child and the teacher live*: As the child leaves the school he is exposed to many social influences, a large number of which are only too often adverse, nullifying the healthy socio-cultural effect of the education received at the school. Streets, cinemas, cafes etc. are few instances of the sources of these undesirable influences in the beyond - the school social matrix, in order to assess their pernicious or non-pernicious

and in order to counteract their undesirable influence on the child. Educational psychology aims at training the teacher in adopting suitable remedial measures. Some of these measures are organization of sports and games, conducting of psychological test, guidance of the students and their parents etc.

(v) *To give the teacher insight into his own psychological process and his own role as a teacher* : A teacher should learn to control his own conflicts before he starts teaching. If he doesn't do so the pupils merely serve as more or less suitable materials on which "to ab react, his unconscious and unsolved difficulties". Knowledge of educational psychology helps the teacher to know himself.

Some of our teachers develop an undesirable attitudes towards their students due to poverty, ill-health, insecurity of service, on competence to do the allotted work, emotional tension, inability to get an amicably with colleagues etc. These and host of other unfortunate affect the teaching learning situation adversely.

Our society, on the otherhand is unfavourable towards the teaching profession. Teaching has been accepted as a "failure belt." It is a refuse of the unproductive men and unmarried women. Because of such attitude of the society towards teaching profession our teachers do not feel proud of their profession. If this is re-inforced by an already existing painful tension in the mind, of the teacher his plight becomes all the more miserable because of this additional on her enemy. As a result of which the teacher develops a craze for an "iron discipline" on the class and follow stereo typed methods of teaching that are not only boring but also on effective.

It is educational psychology which helps a teacher to know his own or her nature. He also understands the mechanism of the factors leading to his failure as a teacher. The knowledge of his own self and his profession helps him to improve both as a person as well as teacher.

Educational psychology also helps the teacher about proper management of the classroom to promote learning minimize disruption. If teaches him how to present his lessons to both large and small groups and when to do which. It also teaches him how to predict certain learning patterns students of different ages and from different

backgrounds to comprehend the importance and limitations of the theories employed on teaching strategies and to utilize of many tools and technique that are available to him. Besides studying educational psychology will remind a teacher how challenging teaching can be and how gratifying. It is when a teacher devotes his time and energy for his work.

Role of Educational Psychologists

Educational psychologists incorporate knowledge of the teaching process and the learning of the teaching process, and the learning environment in strategies that are designed to enhance learning. They study topics such as cognitive and developmental psychology, principles of measurement and classroom management techniques to determine how to create an appropriate learning environment. Educational psychologists also conduct-experiments some in classroom and some in laboratories to find their own answers to unresolved questions.