

Methods of Educational Psychology

INTRODUCTION

Educational Psychology is the scientific study of the behaviour of the learner in relation to his educational environment. Behaviour in all its aspects can be studied scientifically through a single technique or approach known as *observation*. This leads us to the simple conclusion that observation may be regarded as the only method or technique for conducting studies of behaviour. This single technique or approach, however, gives rise to several methods or approaches, depending upon the conditions in which observations have to be recorded, the procedure adopted and tools used. We shall discuss this aspect now.

1. Observation of one's own behaviour by looking within or looking inward may be adopted as one of the approaches. Such an approach is known as the method of *introspection*.
2. Sometimes behavioural events are observed and recorded under natural conditions by some person or persons. Such observation approach is termed as *naturalistic observation* or simply as *observation*.
3. Observation and recording of behavioural events under controlled conditions is known as *experimentation*.
4. When these are conducted outside the laboratories in real-life settings by adopting the survey technique, the method is named as the *normative survey method* or the *field survey method*.
5. In case the observation is made through recording a case history, i.e. reconstruction of an individual's biography, the approach may be termed as the *case study* or *case history method*, and if we use psychoanalysis for interpreting the behaviour of a person through the expression of his unconscious behaviour then the method may be termed as the *psychoanalytic method*.
6. If the case history material and process of psychoanalysis is used for the diagnosis and treatment of the behavioural problems, the method is termed as the *clinical method*.
7. In the situation where physical devices are used to observe and measure psychological experiences, the approach may be termed as the *psycho-physical method*.

The various modes of observations may thus give rise to a number of methods and approaches like introspection, naturalistic observation, experimentation, normative survey or field survey, psychoanalytic, clinical and psychophysical methods. Let us discuss all these approaches that help us to investigate the behaviour of a learner.

INTROSPECTION METHOD

This is the oldest known method for the study of behaviour. In the early days of the evolution of Psychology, behaviour was studied only through a kind of self-examination of inner observation called *introspection*.

The word 'introspection' is made up of two Latin words, *intro* meaning "within" or "inward", and *spiere*, meaning to "look". Hence, introspection means looking within or looking inward. In introspection, then, one is required to get inside one's own mind. It is a sort of self-observation in which one perceives, analyses and reports one's own feelings and, in fact, everything that takes place in one's mind during the course of a mental act. For example, when in a state of anxiety, fear or anger, one may be asked to determine by one's own observation what one sensed, thought or felt at the time of experiencing that emotion.

Merits

Introspection—the observation and reporting of one's own mental processes—is considered important on account of its unique nature. It is a simple and readily available method. One's mental processes are always present and can be introspected at any time. Introspection is, therefore, able to give us a direct and immediate insight into one's own mental processes without involving any extra expenditure of material or apparatus. Moreover, introspection provides adequate knowledge of the inner or covert experiences and thus the inner behaviour of an individual in the form of thought or feeling can be revealed through introspection.

Drawbacks and Limitations

Introspection as a method of studying behaviour, however, suffers from some serious drawbacks and limitations:

1. In introspection one needs to observe or examine one's mental processes carefully in the form of thoughts, feelings and sensations. The state of one's mental processes is continuously changing. Therefore, when one concentrates on introspecting a particular phase of one's mental activity that phase passes off. For example, when one gets angry at something and afterwards sits down to introspect calmly or to self-examine, the state of anger is sure to have passed off and so what one tries to observe is not what is happening at that time with oneself but what had happened some time before.
2. Introspection as a method of serious study lacks in reliability, validity and objectivity for the following reasons:

- (a) The results lack reliable communicability and repeatability because any one investigator can never be sure that what he feels or senses is the same as is experienced by other investigators. If we invite introspection reports on the nature of the sensation of green for example, these reports are bound to differ. Some will insist that green is a unitary sensation, whereas others may say that green is a mixed sensation involving yellow and blue. We have no means for the objective observation of the introspection phenomenon. Moreover, in introspection one studies one's own behaviour or mental process. It is not possible, to verify self-observation as one's own mind cannot be studied by others in introspection.
- (b) It is next to impossible to acquire validity and exactness in self-observation or examination of one's own mental process. The mind in perceiving its own functions tries to divide itself into two halves—the subject and the object. The object of observation and the instrument of observation are of course one and the same. This automatically affects the validity and exactness of the observation process and the perceived results. A man who is angry or afraid cannot observe exactly what is going on in his mind and remain unchanged in his emotional state of anger or fear. The consciousness on his part is sure to affect his mental or emotional state which is the object of observation.
3. The scope of introspection as a method of studying behaviour is rather limited. It can only be applied satisfactorily in the case of adult normal human beings. The behaviour of children, abnormal human beings, animals etc., cannot be studied by this method.

Conclusion

Thus, if we try to evaluate the introspection method, we find that it is based on self-speculation, lacks reliable communicability, replicability and reasonable exactness or precision. It is neither sufficiently scientific, practicable nor simple enough to handle. It cannot therefore be taken as an adequate or sufficient single method for psychological studies. The conclusions arrived at by this method need to be supported by specific scientific findings through some other objective and reliable method.

OBSERVATION METHOD

Observation as a method of studying behaviour consists of the perception of an individual's behaviour under natural conditions by other individuals and the interpretation and analysis of this perceived behaviour by them. It is thus essentially a way of 'perceiving the behaviour as it is'. By this method we can infer the mental processes of others through observation of their external behaviour. In fact, it is an indirect approach to the study of the mental process. If some one frowns, howls, grinds his teeth, closes his fists, by observing the external signs of his behaviour, we can say that he is angry. But to study this behaviour concerning

anger in natural conditions, one has to wait for the event to occur. Similarly, to study the behaviour of students in a crowd or during a strike, and the behaviour of a delinquent or problem child, the psychologist has to wait till the particular behaviour occurs and then use all his resources to observe, record, analyse and interpret the behaviour from what he has perceived under natural conditions.

Merits

The observation method occupies a prominent place in the study of human behaviour. It is natural, flexible and economical. Its results are reliable and can be verified. The natural observation method is particularly suitable for studying the developmental characteristics of individual children's habits, interests and other personality traits. For example, the effects of the absence of one or both parents on a child's development can be determined properly through observation of his development. Similarly, a clinical psychologist may be able to collect the required data about the abnormal behaviour of an individual by observing him under natural conditions of his day to day life.

Drawbacks and Limitations

The observation method cannot be termed as sufficiently objective, reliable and valid for the following reasons:

1. It can prove useful only for collecting data on the observable behaviour of an individual. It is impossible, to observe what is happening in the mind of others, and so reasoning can only be through external behaviour. It is possible that a person may be expert at hiding his feelings and emotions and disguising his evil nature under the cover of artificial sobriety. In such cases the method of observation fails to judge the true nature of the individual concerned.
2. Subjectivity factors on the part of the investigator as well as in the process of observation also affect the results of observation. There may be distortions of observable factors depending upon the observer's degree of care in observation. His interests, values, and prejudices may also distort the contents and results of the observation. He may lay extra emphasis on one part of one's behaviour and may altogether neglect some other very important aspect. The interpretations of the recorded events may also be similarly coloured. One may read one's own thoughts, feelings and tendencies into others' minds. The lacunae resulting from such subjectivity may, however, be corrected to a certain extent by having as many observers as possible for observing the same phenomenon and employing scientific instruments such as a tape recorder, or a video camera etc., for recording the events.
3. Another serious limitation of the observation method is that the behaviour observed is dependent on the time and place and on the individual or group of people involved. It lacks replicability as each natural situation can occur only once.

4. Another important limitation of the observation method lies in its inability to establish a proper cause and effect relationship. If two phenomena, say poverty and delinquent behaviour, invariably occur together, it cannot be established that poverty is the sufficient and necessary cause of delinquent behaviour or vice versa.

EXPERIMENTAL METHOD

The experimental method is considered the most scientific and objective method of studying behaviour. It lays emphasis on performing experiments. The word 'experiment' comes from a Latin word *experimentum* meaning 'a trial' or 'test'. Therefore, in experimentation we try or put to the test the material or phenomenon whose characteristics or consequences which we wish to ascertain. In the sciences, while conducting such experiments in the laboratory or outside in a natural environment we may want to learn the effect of friction on motion, the effect of sunlight on growth of plants, etc. In educational psychology also, we perform such experiments in the psychological laboratory, class-rooms or outside the class-rooms in physical or social settings to study the cause and effect relationship regarding the nature of human behaviour, i.e. the effect of anxiety, drugs or stresses on human behaviour, the effect of intelligence, or participation in co-curricular activities, on the academic performance of students, etc. In performing all such experiments we try to establish certain cause and effect relationships through objective observations of the actions performed and the subsequent changes produced under pre-arranged or rigidly controlled conditions. From these observations certain conclusions are drawn and theories or principles are formulated. The essential features of the experimental method are:

1. Experiments performed in this method essentially require two persons, the experimenter and the subject or the person whose behaviour is to be observed.
2. These experiments are always conducted on living organisms in contrast to experiments in the physical sciences which are generally conducted on inorganic or dead subjects.
3. The key factor in this method is the control of the conditions or variables. By this control we can eliminate irrelevant conditions or variables and isolate the relevant ones. We thus become able to observe the causal relationship between two phenomena, keeping all other conditions almost constant. For example, if we try to study the effect of intelligence on academic achievement by the experimental method, we will need to determine 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 the *independent variable* and the other the *dependent variable*. Thus the independent variable stands for the cause, and the dependent variable is the effect of that cause. Other conditions like study habits, sex, socio-economic conditions, parental education, home environment, health, past learning, memory, etc., which exercise a good impact upon

one's achievement besides one's intelligence are termed *intervening variables*. In experimentation, all such intervening variables are to be controlled, i.e. they are to be made constant or equalized and the effect of only one independent variable, e.g. intelligence in the present case, on one or more dependent variables is studied. For this we try to change and vary the independent variable. This brings about concomitant changes in the dependent variable or variables. These changes are objectively observed and measured on the basis of which certain conclusions are reached.

As already emphasized, in the experimental method experiments can be performed in the psychological laboratory or in the class-rooms or outside the class-rooms under rigidly controlled conditions. Let us discuss how these experiments are performed.

Experiments in the Laboratory Set-up

Just like other physical or natural sciences, experiments can be performed in Psychology or Educational Psychology for studying the behaviour in the actual laboratory set-up. Thorndike's experiments on cats, Pavlov's experiments on dogs, Skinner's experiments on rats and pigeons and similar other experiments to study the behaviour related to learning, transfer of learning, memory, attention, perception etc., are all examples of such laboratory experiments. Let us illustrate the process of conducting these experiments with an example.

Title: Effect of knowledge of results on performance.

Name of the subject: Sex and Age: Education:
Date and Time: Name of the experimenter:

Hypothesis: The knowledge of results acts as an incentive or motivating force for improvement in performance.

Apparatus and material: A sheet of white paper, a ruler and a pencil.

Plan of the study: The study involves the task of drawing a straight line of a certain length, say 12 cm, on a sheet of white paper with the following details:

1. Telling the subject about the measurement of the line he draws after each trial.
2. Not informing or letting him know the results of his performance.

Instructions: The subject will be provided with detailed instructions for conducting the experiment.

TABLE 3.1 Observation Record

Length of line drawn in centimetres without and with the knowledge of results.										
Trial Nos.	1	2	3	4	5	6	7	8	9	10
Without knowledge of results (WKR)	10.1	9.8	10.4	11.3	11.8	12.5	10.4	10.8	11.4	12.7
With knowledge of results (WR)	10.2	11.5	11.8	12.8	12.6	11.9	12.2	12.0	12.2	12.1

TABLE 3.2 Interpretation of Results

Error or difference from actual length in centimetres under two conditions.											
Trial Nos.	1	2	3	4	5	6	7	8	9	10	Total
Difference from actual length (under WKR)	1.9	2.2	1.6	0.9	0.2	0.5	1.6	1.2	0.6	0.7	11.4
Difference from actual length (under WR)	1.8	0.5	0.2	0.8	0.6	0.1	0.2	0.0	0.2	0.1	4.5

It may be seen that the total difference from actual length estimated by the subject under the first condition (without knowledge of results) during the first ten trials is much higher than that estimated under the second condition (with knowledge of results). Whereas it is 11.4 cm in the former case, it is only 4.5 cm in the latter. It can easily be inferred from the above findings that there is a definite improvement in the performance of the subject through feed-back, i.e. the knowledge of results.

Experiments Outside the Laboratory Set-up

In Educational Psychology, experiments can also be conducted without involving the usual psychological laboratory set up. However, for such studies, there is need of some specific experimental designs for controlling the variables and measuring their effects. A few of such designs are:

1. The control test or single-group design. In these designs it is not necessary to have two different individuals or groups of subjects for the experiment. Here a single individual or group of individuals can work as the subject for the experiment. The subject, whether an individual or a group of individuals, is first objectively observed under normal conditions and then under different sets of changed conditions. Conclusions are then drawn by comparing the differences. Suppose we wish to study the effect of the fear stimulus. In the psychological laboratory, all necessary arrangements of instruments and material necessary for the study of the fear responses of the subject in the form of changes in respiration, pulse and heart-beat, blood pressure, functioning of the digestive and other internal systems, facial expression etc., will be made. The initial readings regarding all these functions under normal conditions when there is no fear stimulus present will be taken from the related instruments. The subject will then be exposed to sudden fear stimuli like a snake, a loud noise, darkness etc., and then the changes in the readings as a result of the intensity of fear responses will be recorded from the various instruments. The difference in the second and initial readings will then indicate the different degrees of intensity of the fear which could be aroused on account of the different types of fear stimuli in a particular individual.

As another illustration, we may conduct an experiment to ascertain whether

a group of students can do better in an intelligence test under the influence of a specific drug like benzedrine sulphate, caffeine or *brahmi*.

For this investigation, we will take only one group of some students, preferably of the same age, sex and state of health. The procedure of the experiment will comprise the following steps:

- (a) These students can be given sugar capsules after which they can be put through some intelligence test. This will provide the initial testing under normal conditions.
- (b) Some time later, they can be given drug capsules and tested on the same intelligence test. This will make a test under changed conditions.
- (c) The I.Q. scores under these two situations are noted down and the difference is calculated. If any significant difference is found, it will be attributed to the influence of the drug.

2. Control-group design. The control test or the single group design method has a serious drawback known as the *positive practice effect*. If an individual is subjected to a certain kind of fear stimulus, it will surely affect the responses on his further exposure to fear stimuli. If a group is subjected to a certain drug, then it will automatically carry its effect or influence at the time of the introduction of some other drugs at the later stage. Control group designs help in minimising such a practice effect.

In the control group design two separate groups, known as the experimental group, and the control group, participate in the experiment. They are equated or matched on various traits like age, sex, intelligence and other personality characteristics. There is a one-to-one correspondence in the two equated groups. Now the control group is given sugar capsules and tested on some intelligence test. At the same time, the experimental group is given the drug capsule and tested on the same intelligence test. The differences in the intelligence scores of the groups are then calculated. In case some significant differences are found, they are attributed to the effect of the drug.

3. Multiple-group design. Sometimes, we have to experiment with more than two groups for arriving at the appropriate conclusion. For example, if we want to study the effect of knowledge of English on the speed with which people subsequently learn French, we decide to teach English to a group of students and then see whether they learn French more easily. But more easily than whom? Certainly we will need another group, or groups for comparison. Group A, consisting of students who have learnt the English language is called the experimental group. Group B may function as a control group for comparison, since it did not learn English earlier. If group A learns French faster than Group B, can we attribute the difference in speed to the earlier study of English? Certainly not. It may be that practice on account of learning any subject or language may have the same positive transfer effect. To rule out these possibilities it is essential to add some more control groups like C and D. Now if group A demonstrates a clear superiority over the other three groups, then and only then may we infer that learning English facilitates learning French. For illustration, the

working of a multiple group design for data collection in the present case may be tabulated as shown.

<i>Group</i>	<i>Subject for test held in the month of August</i>	<i>Test held in the month of February</i>
A	English	French
B	No test	French
C	Any subject (say Mathematics)	French
D	Russian	French

4. Designs involving rotation. This experiment involves presenting two or more stimulating situations to the experimental subjects in as many sequences as necessary to control the serial effects of fatigue or practice. For example, if we want to determine the relative influence of two specified conditions A and B (say praise and blame) on a group of subjects, we will not measure all the subjects under condition A and then under condition B. Condition A might cause fatigue or so train the subjects that the measures under condition B would not be independent of the fatigue or training effects. Here two alternatives can be adopted:

- (a) We 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. This technique is sometimes called the A B B A order.
- (b) Another alternative is to separate the subjects into two equated groups, one of which receives treatment A and then B, whereas the other group receives treatment B and then A. Both sets of A results and both sets of B results may then be combined and the difference between them calculated.

Limitations of the Experimental Method

1. The Experimental method advocates the study of behaviour under completely controlled rigid conditions. These conditions demand the creation of artificial situations or environment and the behaviour studied under these conditions may be or is usually different from the spontaneous or natural behaviour. Therefore, the experimental method fails to study behaviour in natural conditions as may be possible through natural observation.
2. The second limitation or difficulty lies in exercising actual control or handling of the independent variable and the intervening variables. It is very difficult to know and control all of the intervening variables. Similarly we cannot always control the independent variable. Therefore, it is not always possible to create the desired conditions in the laboratory and consequently, in the absence of these controlled conditions, the success of this method becomes quite uncertain.
3. In the experimental method we often make use of animals or birds as subjects for experimentation. It is also debatable whether experimental results obtained from such sources are applicable to human beings at all.

4. The scope of the experimental method is limited. All problems of psychology cannot be studied by this method as we cannot perform experiments for all the problems that may come up in the diverse subject matter of psychology.
5. The dynamic nature and unpredictability of human behaviour does not always allow the independent variable to lead to change in the dependent variable. Human behaviour is not a mechanical behaviour. The anger or fear producing stimuli or variables may or may not yield the required responses as desired under experiment and hence it is not possible to get uniform responses or changes in the dependent variables on account of the concomitant changes in the independent variable.
6. The experimental method is a costly and time consuming method. Moreover, the conduct of experiments under this method requires specialized knowledge and skills. In the absence of such specialized abilities, it is not possible to use this method.

DIFFERENTIAL METHOD

The differential method is based on individual differences. Therefore, all the measures applied to the calculation of individual differences are included in this method. The differential method is also named as the normative survey method or the field survey method as the investigator has to go to the field to make his investigations. It is sometimes called the statistical method for the reason that statistical techniques become the major devices for the study of the individual differences. Now, the question that arises is, how do differential methods differ from experimental methods? It may be felt that the difference between the experimental and differential methods is only arbitrary and artificial, since the procedure of finding the effects on dependent variables by the application of the independent variables is the same. This, however, is not true as T.G. Andrews (1958) comments:

Differentiation between experiments and differential methods may appear quite artificial, and it is true that all psychologists will not agree to such an apparently artificial classification scheme. Nevertheless, it should always be made clear that the independent variables resulting from individual differences are never under the investigator's control to the same degree that experimental variables are.

Thus, differential methods differ from the experimental approach in that the investigator cannot intentionally manipulate the variables and each of these is studied as an independent variable. For instance, in studying the relationship of achievement with intelligence, it is not possible to manipulate intelligence. Therefore, we have to take each individual and study his achievement in relation to his intelligence. After that, we can try to arrive at certain conclusions with the help of statistical techniques.

The key concept in using the differential methods is their technique of studying differences within the same individual or between individuals in different groups. Usually for this purpose four types of main approaches or designs are used. These are:

1. Correlation Approach
2. Field Survey Approach
3. Longitudinal Approach
4. Cross-sectional Approach.

In the Correlation Approach, the psychologist takes people as they are and studies what they usually do, without changing the conditions under which they respond to the tests or perform the desired tasks. For example, in the above case of finding the relationship of achievement with intelligence, the intelligence as well as the achievement, say academic achievement of each individual can be found with the help of intelligence as well as achievement tests. The subjects will naturally differ from one another and by using the statistical technique of correlation, the desired relationship can be ascertained.

In the Field Survey Approach, the differences with regard to a particular trait pattern or characteristics among the individuals are discovered by conducting the field survey and taking adequate samples, from the studied population. For example, in 'studying the individual differences with regard to adjustment patterns or job satisfaction among high school teachers working in government and non-government schools', the use of the differential method would require (a) the taking of adequate samples of both categories of teachers, (b) finding out the adjustment or job satisfaction scores of the teachers included in these groups, and (c) analysing the differences, if any, in the pattern of adjustment or job satisfaction.

In the Longitudinal Approach, the differences in an individual or group of some individuals are studied over a long span of time. For example, by learning the pattern of growth and development with regard to physical, mental, emotional, social or moral dimensions of personality, we can study a particular infant or a number of infants as they normally grow and develop through successive ages. However, this type of study would require quite a long span as the researcher has to wait for the normal course of development to occur.

The Cross-sectional Approach is the alternative for studying or discovering the normal trend where instead of studying one or more infants at their successive ages we can take different infants of varying ages for studying them simultaneously to determine the pattern of growth and development at different ages.

In all the above approaches meant to discover differences, the researcher is required to take the help of the statistical methods for analysing his data and interpreting his research findings with regard to the differences among individuals, groups and methods of treatment.

CLINICAL METHOD

Whereas experimental and differential methods are generally used to investigate general behavioural facts, the clinical method is directed towards the study of individual behaviour. The clinical set-up or environment is associated with health care and treatment of the individuals who come for advice and treatment of their physical and mental disorders. Clinical methods also remind us of all those

methods which deal with the task of investigating the root causes of a problem or exceptional behaviour and suggesting as well as providing proper environment and possible treatment.

The concept of a clinical method is included in the concept of clinical psychology which is the art and technology of dealing with the adjustment problems of the individual for purposes of his optimum social adjustment and welfare. The analysis of this definition may help us to observe some of the characteristics of the nature and working of the clinical method:

1. The clinical method is applicable to an individual.
2. The individual has some problems.
3. Methods of both diagnosis and treatment are involved in dealing with these problems.
4. The clinical method is aimed at seeking the maximum adjustment and welfare for the disturbed person.
5. The clinical method is an art as well as a science and technology which means that everybody cannot treat every patient and it takes pleasure in making mankind healthier and better.

Thus, the basic elements in this method of psychological investigation are the diagnosis and treatment of the problem or mental illness of an individual.

Method of Diagnosis

Diagnosis by the clinical method requires a symptomatic account of the overall situation in order to ascertain the root cause of an illness or behavioural problem. For such diagnosis, one has to look into the past events or experiences of the individuals, their impact and reactions, the present environment and adjustment problems, and the total personality make-up, etc. For ascertaining all about these aspects the following techniques are generally employed.

1. Adequate physical check-up. The individual suffering from a behavioural problem must be made to go through a detailed physical check-up to ascertain whether the behaviour exhibited is of a functional or of an organic nature. In case there are no physical causes for the behaviour in question, then and only then should it be diagnosed as a subject for psychological treatment.

2. Making out the case history. For finding the clues or delving into the events from the earlier experiences of the individual which may be responsible for the present behaviour, the psychologist then tries to use the case history technique.

In this technique, information is collected from the memory of the individual, his parents, the members of his family, his relatives, guardians, neighbours, friends, teachers, doctors and from the available records and reports concerning the individual's past. For collecting the relevant information the following sources may be used:

- (a) *Identifying data.* This may contain the name of the individual, his father's name, his residential address, date of birth, caste, religion, nature of exceptional or abnormal behaviour, etc.

- (b) *Environmental background.* This may contain information about the members of the individual's family, his parents, their relationship with each other, and behaviour with the subject (individual) of the study, the educational and socio-economic status of the family, the accidents and incidents which may have occurred in the family, the types of neighbourhood, friends and socio-cultural environment, the type of school education and school or job situation environment etc., he may have passed through.
- (c) *Developmental history.* This may contain the history of the growth and developmental process of the individual in relation to the treatment, behaviour and environmental facilities available from birth onwards, history of his mental and physical health, education and occupation, social and emotional adjustment, sex-life etc.
- (d) *History of exceptional/abnormal behaviour.* This may contain all the relevant information regarding the development of the behaviour in question up to the present stage.

3. The clinical interview. Additional but very important information may be obtained by the investigator by arranging a clinical interview with the individual. For this purpose, he may carefully plan appropriate questions and persuade the individual to give free and frank responses by establishing the necessary rapport. For understanding the inner working of the individual's mind, he may be given the opportunity to talk about himself in this interview session. From these responses, the investigator may draw conclusions for the diagnosis of the root cause of the behaviour.

4. Direct observation of behaviour. Direct observation of the behaviour of the individual by the investigator in the natural set-up, living and working conditions may prove quite useful in knowing the nature and causes of the behaviour. In the case of children, direct observation of the subject at play may provide a useful means of understanding him, his behaviour and his problem.

5. Using tests and measuring devices. Certain testing and measuring devices may also be used to ascertain the interests, abilities, attitudes, aptitudes and the total personality of the individual and relevant information may thus be obtained for understanding the individual and his behaviour.

Method of Treatment

In order to serve the welfare of the individual, diagnosis should be followed by treatment. For the treatment of a behavioural problem, efforts are to be made to bring about a change in the behaviour of the individual by his adjustment with himself and with his environment and thus ultimately restore his normal mental health. This can be usually accomplished in two ways:

1. Modifying the environmental forces
2. Modifying the individual's attitude.

The physical and socio-cultural environment of the individual needs to be modified in such a way that he may not be subjected to further disharmony and maladjustment. Rather, he should be able to get a pleasant and encouraging environment characterized by wholesome and harmonious relationships with other social beings and he should get enough opportunity for the fulfilment of his basic needs. For this purpose the following measures may be adopted:

1. He may be physically removed from one situation and placed in another, like a boarding house, foster home or with guardians and adopted parents.
2. The attitude of the parents, teachers and others toward him may be changed.
3. More adequate recreational facilities, better living conditions, work placement and working conditions may be provided or some suitable measures for the sublimation and catharsis of repressed desires and wishes may be taken.

A complete modification of the individual's philosophy of life is required for bringing about a change in his behaviour. He must be made to harmonise his thinking, feeling and doing. For this purpose, the following measures may be adopted:

1. Guidance and counselling
2. Psychoanalysis
3. Techniques like auto-suggestion hypnosis, psychodrama and role-playing
4. Therapies like psychotherapy, group therapy, play therapy, occupation therapy, attitude therapy etc.

Conclusion

The above discussion regarding the nature and working of the clinical methods may lead us to conclude that clinical methods in all their shapes and forms are always concerned with the diagnoses and treatment of adjustment problems or mental and psychological illness of the individual. It is, however, not necessary that clinical methods should always be used to study or treat the mental illness or abnormal behaviour of an individual. The real purpose of clinical findings is to help in conducting an intensive and thorough study of the behaviour of the individual. Therefore, it does not matter whether we carry out the study of a normal or abnormal behaviour with the help of a clinical set-up. There is no bar to study the behaviour of normal persons or even exceptional individuals like high achievers, creative geniuses, saints, social workers and leaders by employing clinical methods of collecting relevant information through various means. Whether an individual requires treatment or follow-up depends upon the case under clinical study. A clinical study thus does not necessarily require resort to methods of treatment. The treatment can be affected only when the individual under study needs it. Therefore, broadly speaking, clinical methods may be taken as the methods of studying the behaviour of an individual in all possible detail relevant to the purpose of the study.