

1. Details of Module and its structure

Module Detail	
Subject Name	Psychology
Course Name	Psychology 03 (Class XII, Semester - 1)
Module Name/Title	Variations in Psychological Attributes - Part 1
Module Id	lepy_10101
Pre-requisites	A basic understanding of Psychology as a subject and methods of enquiry in Psychology
Objectives	After going through this lesson, the learners will be able to understand the following: <ul style="list-style-type: none">• To understand psychological attributes on which people differ• To learn about different methods that are used to assess psychological attributes
Keywords	Individual Differences, Assessment, Psychological Attributes, Intelligence, Personality, Aptitude, Interest and Values, Creativity

2. Development Team

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Introduction

If you observe your friends, classmates or relatives, you will find how they differ from each other in the manner they perceive, learn, and think, as also in their performance on various tasks. Such individual differences can be noticed in every walk of life. That people differ from one another is obvious. In Class XI, you have learnt about psychological principles that are applied to understand human behaviour. We also need to know how people differ, what brings about these differences, and how such differences can be assessed. You will recall how one of the main concerns of modern psychology has been the study of individual differences from the time of Galton. This chapter will introduce you to some of the fundamentals of individual differences.

One of the most popular psychological attributes which has been of interest to psychologists is Intelligence. People differ from each other in their ability to understand complex ideas, adapt to environment, learn from experience, engage in various forms of reasoning, and to overcome obstacles. In this chapter, you will study the nature of intelligence, changing definitions of intelligence, cultural differences in intelligence, range and variations in the intellectual competencies of people, and the nature of special abilities or aptitudes.

No two individuals, not even identical twins, are exactly the same. Besides looking different their behaviour would also vary. Psychologists want to know why and how do these differences come about.

Francis Galton established the principle that all human traits differ over a wide range from small to large, weak to strong, slow to fast; which happens for height, weight and various kinds of psychological attributes including, as we know, the ability to learn, think, perceive, reason etc.

Individual Differences in Human Functioning

Individual variations are common within and across all species. Variability is a fact of nature, and individuals are no exception to this. They vary in terms of physical characteristics, such as heights, weight, strength, hair colour, and so on and so on. They also vary along psychological

dimension. They may be intelligent or dull, dominant or submissive, creative or not so creative, outgoing or withdrawal, etc. The list of variations can be endless. Different traits can exist in varying degrees in an individual. In this sense, each one of us is unique as s/he exemplifies a typical combination of various traits.

The question which you may like to pose is how and why people differ. Thus, in fact, is the subject matter of the study of **individual differences**.

For psychologists, **individual differences** refer to distinctiveness and variations among people's characteristics and behaviour patterns.

Example- Two people may differ in terms of sense of smell, colour vision, and many other traits and abilities.



Figure 1.a- Individual differences

Source:https://cdn.pixabay.com/photo/2016/04/01/12/17/ball-1300645_960_720.png

Many psychologists believe that our behaviour are influenced by our personal traits, some others hold the view that are behaviours are influenced more by situational factors. This latter view is known as **situationism**, which states that situations and circumstances in which one is placed influence one's behaviour.

Example 1- A person who is generally aggressive, may behave in a submissive manner in presence of his or her top Boss.

Example 2- An individual may act in a helpful manner even if he doesn't wish to if he knows people are watching his behaviour.

Sometimes, the situational influences are so powerful that individuals with differing personality traits respond to them in almost the same ways.

The situationist perspective views human behaviour relatively more as a result of influence of external factors.

Assessment of Psychological Attributes

Psychological attributes are involved in very simple phenomena like in time taken to react to a stimulus, i.e. reaction time, and also in highly global concepts like happiness. It is difficult to count and specify the number of psychological attributes that can be assessed.

Psychological testing in its modern form originated more than 100 years ago in laboratory studies of sensory discrimination, motor skills, and reaction time.

Assessment refers to the measurement of psychological attributes of individual and the evaluation, often using multiple methods in terms of search standards of comparison.

Any attribute will be said to exist in a person only if it can be measured using scientific procedures.

The assessment of human characteristics involve observations, interviews, checklists, inventories, projectives, and other psychological tests.

For example, when we say, “Harish is dominant”, we are referring to the degree of dominance in him. This statement is based on our own assessment of dominance in him. Once assessment is done, we can use this information to predict how Harish will probably behave in future.

Our assessment may be *informal* or *formal*.

Formal assessment	Informal assessment
<ul style="list-style-type: none">• Objective, Standardised, and organised.• Psychologists are trained in making formal assessment.	<ul style="list-style-type: none">• Open to subjective interpretations• Varies from case to case and from one assessor to another.

The attribute chosen for assessment depends upon our purpose.

For example:

In order to help a weak student perform well in examinations, we may assess her/his intellectual strengths and weaknesses.

If a person fails to adjust with members of her/his family and neighbourhood, we may consider assessing her/his personality characteristics.

For a poorly motivated person, we may assess her/his interests and preferences.

Psychological assessment uses systematic testing procedures to evaluate abilities, behaviours, and personal qualities of individuals.

Psychological attributes are not linear or unidimensional. They are complex and expressed in terms of dimensions. A line is a mere aggregate of many points. A point occupies no space. But think of a box. It occupies space. It can be described only in terms of its three dimensions, i.e. length, width, and height. Similar is the case with psychological attributes. They are usually multi-dimensional.

Some of the important attributes that are of interest to psychologists are:

Intelligence	Aptitude	Interest	Personality	Values
<ul style="list-style-type: none"> The global capacity to understand the world, think rationally, and use available resources effectively when faced with challenges. Intelligence tests provide a global measure of a person's general cognitive competence including the ability to profit from schooling. Generally, students having low intelligence are not likely to do so well in school-related examinations, but 	<ul style="list-style-type: none"> It refers to an individual's underlying potential for acquiring skills. Aptitude tests are used to predict what an individual will be able to do if given proper environment and training. Example- a person with high language aptitude can be trained to be a good writer. Example of aptitude test- Differential Aptitude Test (DAT) General Aptitude Test 	<ul style="list-style-type: none"> An individual's preference for engaging in one or more specific activities relative to others. Assessment of interest of students helps to decide what subjects or courses they can pursue comfortably and with pleasure. Knowledge of interest helps us in making choices that promote life satisfaction and performance on jobs. Example of interest assessments- Strong Interest Inventory, Jackson Vocational Interest 	<ul style="list-style-type: none"> Relatively enduring characteristics of a person that makes her/him distinct from others. Personality tests try to assess an individual's unique characteristics, whether one is dominant/submissive, moody/emotionally stable, outgoing/withdrawn etc) Personality assessment helps us to explain an individual's behaviour and predict how she or he will behave in future. Example of personality test- 	<ul style="list-style-type: none"> Enduring beliefs about an ideal mode of behaviour. A person having a value sets a standard for guiding her/his actions in life and also for judging others. In value assessment the dominant values of a person like-political, religious, social or economic are determined.

<p>their success in life is not associated only with their intelligence test scores.</p> <ul style="list-style-type: none"> • Example of intelligence test- Wechsler Adult Intelligence Test (WAIS) 	Battery (GATB)	Survey(JVIS)	Myers-Briggs Type Indicator (MBTI)	
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ASSESSMENT METHODS

Psychological tests	Interview	Case study	Observation	Self Report
<ul style="list-style-type: none"> • Objective and standardised measure of an individual’s mental or behavioural characteristic • Objective tests have been developed to measure all the dimensions of psychological attributes example- Intelligence tests, aptitude tests etc. • These 	<ul style="list-style-type: none"> • Seeking information from a person on a one to one basis. Example- counsellor interacts with a client / employer selects employees for his/her organisation. 	<ul style="list-style-type: none"> • In-depth study of the individual in terms of his/her psychological attributes, psychological history in the context of his/her psychosocial and physical environment. • Widely used by clinical psychologists. • Case studies are based on data 	<ul style="list-style-type: none"> • Involves employingssystematic, objective and organised procedures to record behavioural phenomena occurring naturally in real time. Certain phenomena such as mother-child interaction can be easily studied through observation. • The major problem with observational 	<ul style="list-style-type: none"> • A person provides factual information about herself/himself and/or opinions, beliefs etc that s/he holds. • Such information may be obtained by using an interview schedule or a questionnaire, a

tests are widely used for the purpose of clinical diagnosis, guidance, personnel selection, placement and training.		generated by different methods, e.g. interview, observation, questionnaire, psychological tests, etc.	methods are that the observer has little control over the situation and the reports may suffer from subjective interpretations of the observer.	psychological test or a personal diary.
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SPECIAL ABILITIES

Aptitude: Nature and measurement

<i>Intelligence tests</i>	<i>Aptitude tests</i>
Assess general mental ability	Assess special abilities in a particular field of activity.

Aptitude refers to special abilities in a particular field of activity. *It is a combination of characteristics that indicates an individual’s capacity to acquire some specific knowledge or skill after training.*

The knowledge of aptitude can help to predict an individual’s future performance.

Many aptitude tests have been constructed in pursuit to measure the skills required for certain kinds of jobs and occupation. Example: manual dexterity involved in factory jobs.

In order to be successful in a particular field, a person must have both aptitude and interest.

Aptitude tests are available in two forms-

1. **Independent (specialised)** aptitude tests {clerical, mechanical, numerical, and typing aptitude tests}
2. **Multiple (generalised)** aptitude tests- multiple aptitude tests exist in the form of test batteries, which measure aptitude in several separate but homogeneous areas. {Differential aptitude tests DAT, general aptitude tests batteries GATB, and the Armed services Vocational Aptitude batteries ASVAB}

DAT is most commonly used in educational setting. It consists of 8 independent subtests:

1. Verbal reasoning,
2. Numerical reasoning,

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3. Abstract reasoning,
 4. Clerical speed and accuracy,
 5. Mechanical reasoning,
 6. Space relations,
 7. Spelling
 8. Language Usage.

J.M.Ohja has developed an Indian adaptation of DAT. Several other aptitude tests have been developed in India for measuring scientific, scholastic, literary, clerical and teaching aptitude.

Being 'Interest' here

Interest is a preference for a particular activity; aptitude is the potentiality to perform that activity. A person may be interested in a particular job or activity, but may not have the aptitude for it. Similarly, a person may have the potentiality to perform a job, but may not be interested in doing that. In both cases, the outcome will not be satisfactory. A student with high mechanical aptitude and strong interest in engineering is more likely to be a successful mechanical engineer.

CREATIVITY

Q. What is creativity?

Q. Who qualifies to be called creative?

Q. How is creativity expressed?

Definition: Creativity is the ability to produce ideas, objects, or problem solutions that are novel, appropriate and useful.

Creativity is something that is both original and worthwhile. This something could take many forms. It might be a dance piece, a chemical process, a story, poem, painting or even a theory.

There is the general consensus that creative people show creative productivity. New inventions insightful discoveries, artistic works, or other products that are both original and worthwhile. To name a few of creative people would include names like Albert Einstein, C.V.Raman, Tagore, Ramanujan, Leonardo da Vinci, Thomas Edison, Sigmund Freud and many more who have made outstanding contribution in different fields.

In recent years, understanding of creativity has broadened. Creativity is not just limited to the selected few- the artist, the poet or the inventor. Ordinary individuals in simple occupation like

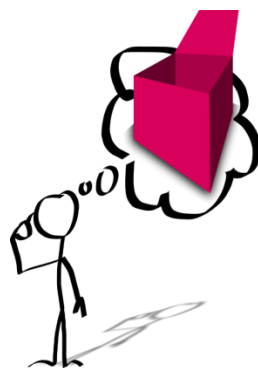
pottery, cooking, carpentry, etc. can also be creative. However, it has been said that we are not working at the same level of creativity as an eminent scientist or a writer. That means that individuals vary in terms of the level and the areas in which they exhibit creativity and that all may not be operating at the same level.

Einstein theory of relativity is a classic example of the highest level of creativity which implies bringing out altogether new ideas, facts, theory, or a product. Another level of creativity is working on what has already been established earlier by way of modifications, by putting things in new perspective or to new use.

Research literature suggests that children begin to develop the imagination during the early years of childhood but they express creativity mostly through physical activities and in non-verbal ways. When language and intellectual functions are fully developed and store of knowledge is adequately available, creativity is expressed through verbal modes too. Those who are outstanding in their creativity may give an indication about the direction in which their creativity lies through their self-chosen activities. In some cases, however, opportunities need to be provided before they can manifest their hidden potential for creativity.

Is there any explanation for variation in potential for creativity?

Yes, as in the case of other mental and physical characteristics, variations can be attributed to the complex interaction of heredity and environment. Creativity is also determined by both these factors. Limits of the creative potential are set by heredity; environmental factors (like motivation, commitment, family support, peer influences, training and opportunities) stimulate the development of creativity. Although no amount of training can transform an average person to the level of Einstein, Shakespeare etc. but it is also true that every individual can raise their creative potential beyond its present level.



Source: https://cdn.pixabay.com/photo/2012/04/13/19/38/thinking-outside-the-box-33399_960_720.png

Tips to enhance creativity:

For fostering creativity, a number of general skills and abilities basic to creative thinking and problem solving have been identified. Some of the strategies and materials that can be used to foster creative thinking in children are:

- 1) Sensitivity training - providing opportunities to think in unique ways
- 2) Observation- making children observe different things around them and making them know about their own observations.
- 3) Classification- categorising objects of different kind in one class.
- 4) Story writing- To give children a beginning of the story and asking them to complete it in their own ways using their imagination
- 5) Multiple uses- asking children to think of different ways of using a common object.
- 6) Key words- thinking, divergent thinking, concepts, algorithm, heuristics.

Creativity and Intelligence**Everyday Connection: Creativity**

Dr. Tom Steitz, the Sterling Professor of Biochemistry and Biophysics at Yale University, has spent his career looking at the structure and specific aspects of RNA (Ribonucleic Acid) their interactions could help produce antibiotics and ward off diseases. As a result of his lifetime of work, he won the Nobel Prize in Chemistry in 2009. He wrote, "Looking back over the development and progress of my career in science, I am reminded how vitally important good mentorship is in the early stages of one's career development and constant face-to-face conversations, debate and discussions with colleagues at all stages of research. Outstanding discoveries, insights and developments do not happen in a vacuum" (Steitz, 2010, para. 39). Based on Steitz's comment, it becomes clear that someone's creativity, although an individual strength, benefits from interactions with others. Think of a time when your creativity was sparked by a conversation with a friend or classmate. How did that person influence you and what problem did you solve using creativity?

Creativity: new and novel ways and ideas of learning and doing things.

Intelligence is the global capacity to understand the world, think rationally effectively, when faced with challenges.

The following are the two viewpoints regarding the relationship of Creativity and intelligence:

1. Intelligence by itself does not ensure creativity. Terman in 1920's found that persons with high IQ were not necessarily creative. Researchers have also found that both high and low level of creativity can be found in highly intelligent children and also children of average intelligence. Thus the same person can be creative as well as intelligent but it is not necessary that intelligent ones must be creative.

2. Relationship between creativity and intelligence is positive. All creative acts require some minimum ability to acquire knowledge and capacity to comprehend, retain (store) and retrieve (recall). For example; creative writers need facility in dealing with language, artists must understand the effect that will be produced by a painting. Hence, a certain level of intelligence is required for creativity.

<u>Creativity Test</u>	<u>Intelligence Tests:</u>
1. They are open ended.	1. They are close-ended.
2. It involves divergent thinking. Permit person to think of different answers to the questions in terms of his/ her experiences.	2. It involves Convergent thinking: Person has to think of the right solution to the problem.
3. There are no specified answers to questions in creativity tests (freedom to use one's imagination).	3. Focus is on abilities such as memory, logical reasoning, accuracy, perceptual ability and Clear thinking
4. Tests have been developed using different stimuli like words, figures, action and sounds.	4. Little scope for spontaneity, originality and imagination.
5. Famous Psychologists who developed creativity tests are: Guilford, Torrance, Khatena, Wallach.	5. Famous Psychologists who developed Intelligence tests are: Binet and Wechsler