Classification of Types		I.Q. (Intelligence Quotient)
1.	Near genius or genius	140 and above
2.	very Superior	130-139
3.	Superior	120-129
4.	Above Average	110-119
5.	Normal or Average	90-109
6.	Below Average	80-89
7.	Dull or Borderline	70-79
8.	Feebleminded, Moron	50-69
9.	Imbecile	25-49
10.	Idiot	0-24

Illustration2. Distribution of Intelligence in Normal population.

12.3.4. Theories of Intelligence

Already we are familiar with the concept, characteristics and types of intelligence. Now we will discuss the theories of intelligence. Theories of intelligence propounded by psychologists' reflect the components of intelligence. The theories are:

- **The Monarchic Theory**: According to this theory, intelligence is regarded as an adaptiveness which enables a creature to adjust itself to changing environment. This theory has believes in the inborn all round mental efficiency of an individual. This theory has the view that a person who can perform one intellectual task very well, can also perform another task equally well. Dr. Johnson, who believed in such a doctrine, said that if Newton could have turned his mind to poetry, he would have been as great a poet as he was a mathematician.
- **Oligarchic Theory**: Prof. Thomson has developed this theory. According to this theory, intellectual abilities are regarded as belonging to some groups. The main view of the theory is that there is much correlation between the abilities belonging to the same group and there is little correlation between the abilities belonging to other groups. This theory requires the involvement of cognitive (knowledge) abilities which are manifested in groups of abilities.
- **Anarchic Theory:** Prof. Thorndike was the chief exponent of Anarchic theory. According to this theory, mind is highly

ability to think abstractly. It is also the capacity to learn from the past experience and hence, it makes the profitable use of the past.

- Intelligence is not knowledge though acquisition of knowledge depends to a great extent on intelligence and vice-versa.
- Intelligence is not a guarantee against abnormal behaviour, backwardness and delinquency in spite of the fact that it is one of the factors contributing towards achievement, adjustment and character formation of a person.

In short, we may say that intelligence is the power or capacity through which man can identify himself as 'man' that is, a man of 'super-human' ability.It is the capacity through which we can reason, think, comprehend or appreciate, analyse and judge. Even on the controversy on intelligence about its nature as 'acquired or innate', the modern psychologists are of the opinion that intelligence is partly innate but due to repetition or exercise it can be developed. Therefore, we can say that the capacity of intelligence is both innate and acquired.



CHECK YOUR PROGRESS

Q.3. State any five characteristics of Intelligence.

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ACTIVITY 12.1

Do you think that intelligence is innate? What do the modern psychologists say about it?

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12.3.2 Types of Intelligence

After knowing the various characteristics of intelligence and its background, now we have to go through the various types of intelligence. Some psychologists believe that intelligence is not just one capacity. According to them several kinds of intelligence can be distinguished from one another.

Thurstone classifies intelligence in the following ways, which are –

(i) Spatial
(ii) Perceptual ability
(iii) Memory
(iv) Number
(v) Verbal comprehension
(vi) Word-fluency
(vii) Reasoning.

E.L. Thorndike has classified intelligence into three categories which are as follows-

(a) Concrete intelligence
(b) Abstract intelligence
(c) Social intelligence.

Let us analyse Thorndike's classification:

(a) Concrete Intelligence: Concrete intelligence is also known as mechanical intelligence. It is the intelligence that has the relation with concrete materials. It is the ability of an individual to comprehend actual situations and to react to them adequately. The concrete intelligence is evident from various activities in our daily life. This kind of intelligence is measured by performance tests and picture tests in which an individual is asked to manipulate concrete materials.

(b) **Abstract Intelligence**: Abstract intelligence indicates the ability to respond to words, numbers, formulas, diagram and letters etc. This formula is ***conspicuously*** absent in animals. An abstractly intelligent person is able to discover relations among symbols and to solve the various problems with the help of such aids (symbols, formula, diagram, letter etc.)

(c) Social Intelligence: Social intelligence means the ability of an individual to react to social situations of his or her daily life. Social intelligence is possessed by those people who are able to handle



Conspicuous: Very easy to notice

Group Non-Verbal Intelligence Tests: These tests do not necessitate the use of language and are applicable to a group of individuals at a given time. In these tests, material does not contain the test words or numerical figures. It contains pictures, diagrams and geometrical figures etc. printed in the booklet. Army Beta test, Chicago Non-Verbal test, Raven's Progressive Matrices test are some examples of Group Non-verbal Intelligence test.



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Army Beta Test was developed during World War I, in U.S.A. for testing the intelligence of those soldiers who were either illiterate or were not used to English language.

Chicago Non-Verbal Test is most useful for young children aged between 12 to 13 years.

Raven Progressive Matrices Test: This test was developed in the U.K. It is a very popular non-verbal group test of intelligence. This test has been designed to see the relationship between geometric figures or designs in order to evaluate the subject's ability.



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As regards the growth of intelligence and their individual level, certain marked levels have been discovered in the following ways:

1. Low Intelligent group- these includes idiots, **imbeciles, morons.**
2. Feeble minded
3. Normal or Average
4. Superior
5. Very Superior
6. Genius.

The following table illustrates the relationship between I.Q. and degree of brightness. The table is based on the studies by Terman and Merril.



Imbeciles and Morons: a person having a very low level of intelligence, very stupid.

construction movement. Binet-Simon scale arranged 30items, graded for different levels. This scale included item like at age 3- point out the nose, eyes, mouth and eyes. At age 7- Tell what is missing in the unfinished picture. In 1916, Terman revised Binet's scale at Stanford University. This scale is now generally known as 'Stanford Binet'. Terman made some modifications by avoiding certain drawbacks in Binet's test such as that the Binet scale was too low and too difficult at the upper age levels and the instruction which was made is also not clear. Terman as well as Merril through revising the scale, introduced to measure the intelligence of individual, extending from age 2 to 22 years. The task to be performed by the subjects (individuals) in these intelligence tests range from simple manipulation to abstract reasoning. It was Terman who through the scale of 'Stanford Binet' introduced the concept of I.Q.(Intelligence quotient) by correlating the Mental Age with Chronological age. The formula of Intelligence Quotient is :

$$\text{I.Q.} = \frac{\text{M.A.}}{\text{C.A.}} \times 100$$

Individual Performance tests: Individual Performance test is a non-verbal or non-language test of intelligence for testing an individual. In these performance tests, the contents and responses are in the form of performance and language is not used at all. In these tests the items which require responses in terms of motor activities are included. Block building or cube construction, to fit the block in the holes, tracing a maze, picture arrangement or picture completion are some of the activities of Performance individual tests.

The *Pintner Paterson Scale, the Arthur Point Scale, Alexander's Battery of Performance Tests* are some scales for measuring the intelligence of an individual through performance tests.

In India, Dr. Chander Mohan Bhatia developed a battery of performance tests known as '***Bhatia's Battery of Performance Tests".***

Group Verbal Intelligence tests: These tests require the use of language and are applied to a group of individuals at a time. Army Alpha Test (developed in the First World War) and Army General Classification Test (developed in the Second World War) belong to these categories.

people well and also have the ability to make friends easily and understand human relations. Adequate adjustment in social situations is the index of social intelligence.

In fact, although Thorndike has divided intelligence into three categories, yet in real sense, all types are more or less inter-related. Some people may have more abstract intelligence than the mechanical and social intelligence, or some may have more mechanical intelligence than the abstract and social intelligence. Psychologists have found that abilities are positively related. The abstractly intelligent scientist may not be a skilled mechanic, but he or she is likely to be better than the average in mechanical sense and so forth.



CHECK YOUR PROGRESS

Q.4. Point out the classifications as well as types of Intelligence given by Thurstone.

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Q.5. What are the classifications of intelligence explained by E.L. Thorndike?

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12.3.3 Classification of Intelligence Test

Intelligence is measured with tests. An intelligence test is a general measure of current cognitive functioning. It is used to predict academic achievement over a period of time. The tests include items and sub-scales which consist of questions or exercises arranged into groups that increase the level of difficulty.

Intelligence test can be classified into two broad categories, namely-

- Individual test
- Group test.

Individual test means that one individual is tested at a time. It needs highly trained test administrator. On the other hand *group test* means that a group of individual is tested at a time. Group tests are less time consuming.

Another way of classifying the intelligence test is based on the form of the test. Accordingly there are two types of tests:

- **Verbal or Language tests**: These tests make use of language. In these tests, the instruction is given in words (either in written or oral form or both). Individuals are asked to use language as well as paper pencil for giving the responses. The test content of these tests is loaded with verbal material.
- **Non-Verbal and Non-Language Tests**: These tests involve such activities in which the use of language is not necessary. The use of language is eliminated from the test content and response except in giving directions. Non-verbal tests are also called as Performance tests.



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The principal characteristics of performance tests are :

- Test contents of these are in the form of material objects.
- What an individual has to do is indicated by the tester either through oral instructions or signs.
- Individual's response depends upon what he does or performs than by what he says or writes.
- Generally non-verbal or performance tests are individual tests.



CHECK YOUR PROGRESS

Q.6. What are the two broad categories of intelligence test? Mention them briefly.

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The following diagram shows the classification of intelligence tests clearly dividing them mainly into two tests i.e. individual tests and group tests and its sub-sections.

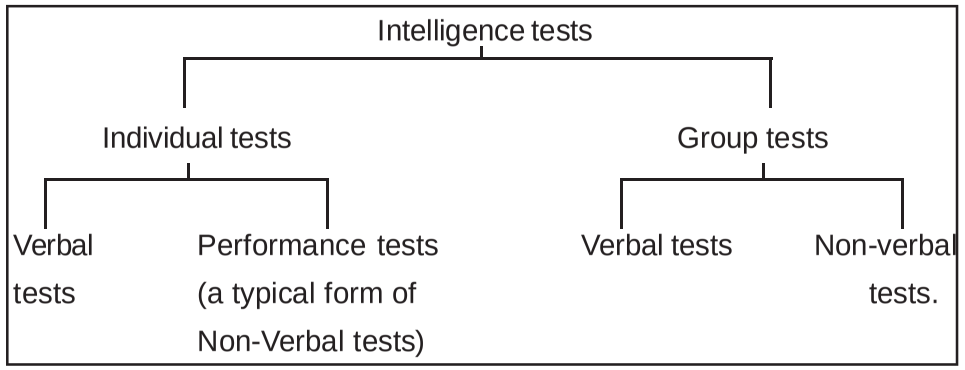


Fig.1. Classification of Intelligence tests.

Let us now briefly discuss these classifications of intelligence tests:

Individual Verbal tests require the involving of language and they are to be administered to an individual at a time. Stanford-Binet Scale is an example of Individual verbal tests. It is the revised form of Binet-Simon scale. It was Terman who revised Binet Simon scale at Stanford University in 1916. Binet-Simon scale as well as the revised form of Stanford-Binet Scale is used for measuring intelligence of an individual. Terman, through this scale, introduced the concept of I.Q.(Intelligence quotient) by correlating the mental Age with Chronological age. In 1937 another revision was carried on with the help of Maud A. Merril. This scale is widely used as an individual intelligence test. The other common Verbal Individual Intelligence test is ***Samanya Budhi Pariksha*** which is used in India for measuring the intelligence.



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In 1904, the French Minister of Public Instruction appointed a commission to formulate methods and to make recommendations for the instruction of feeble-minded children in the public schools in Paris. At that time Alfred Binet was the Director of the Laboratory of Physiological Psychology at Sorboune. Alfred Binet was a French citizen. He was interested in the treatment of abnormal children. He was also a member of that Commission which was formed by the French Minister. Binet prepared the first rough scale of intelligence test in collaboration with Theophile Simon, which was introduced to test the feeble minded children. Actually, Alfred Binet is said to be the father of intelligence test