Intelligence Tests

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The **Psychometric Approach** to intelligence emphasizes people's performance on standardized aptitude tests. **Aptitude Tests** predict people's future ability to acquire skills or knowledge. **Achievement Tests**, on the other hand, measure skills and knowledge that people have already learned.

Types of Tests

Intelligence tests can be given individually or to groups of people. The best-known individual intelligence tests are the Binet-Simon scale, the Stanford-Binet Intelligence Scale, and the Wechsler Adult Intelligence Scale.

The Binet-Simon Scale

Alfred Binet and his colleague Theodore Simon devised this general test of mental ability in 1905, and it was revised in 1908 and 1911. The test yielded scores in terms of mental age. **Mental Age** is the chronological age that typically corresponds to a particular level of performance.

Example: *A ten-year-old child whose score indicates a mental age of twelve performed like a typical twelve-year-old.*

The Stanford-Binet Intelligence Scale

In 1916, **Lewis Terman** and his colleagues at Stanford University created the Stanford-Binet Intelligence Scale by expanding and revising the Binet-Simon scale. The Stanford-Binet yielded scores in terms of intelligence quotients. The **Intelligence Quotient (IQ)** is the mental age divided by the chronological age and multiplied by 100. IQ scores allowed children of different ages to be compared.

Example: *A ten-year-old whose performance resembles that of a typical twelve-year-old has an IQ of 120 (12 divided by 10 times 100).*

There are two problems with the intelligence quotient approach:

1. **The score necessary to be in the top range of a particular age group varies, depending on age.**
2. **The scoring system had no meaning for adults. For example, a fifty-year-old man who scores like a thirty-year-old can't accurately be said to have low intelligence.**

The Stanford-Binet was revised in 1937, 1960, 1973, and 1986.

Wechsler Adult Intelligence Scale

The term *intelligence quotient*, or *IQ*, is also used to describe the score on the Wechsler test. However, the Wechsler test presented scores based on a normal distribution of data rather than the intelligence quotient. The **Normal Distribution** is a symmetrical bell-shaped curve that represents how characteristics like IQ are distributed in a large population. In this scoring system, the mean IQ score is set at 100, and the standard deviation is set at 15. The test is constructed so that about two-thirds of people tested (68 percent) will score within one standard deviation of the mean, or between 85 and 115.

Group Intelligence Tests

Individual intelligence tests can be given only by specially trained psychologists. Such tests are expensive and time-consuming to administer, and so educational institutions often use tests that can be given to a group of people at the same time. Commonly used group intelligence tests include the Otis-Lennon School Ability Test and the Lorge-Thorndike Intelligence Test.

Standardization Samples

Psychologists come up with norms by giving a test to a standardization sample. A **Standardization Sample** is a large group of people that is representative of the entire population of potential test takers.

Reliability

Most intelligence tests have good reliability. **Reliability** is a test's ability to yield the same results when the test is administered at different times to the same group of people. For more on reliability, see page 14.

Validity

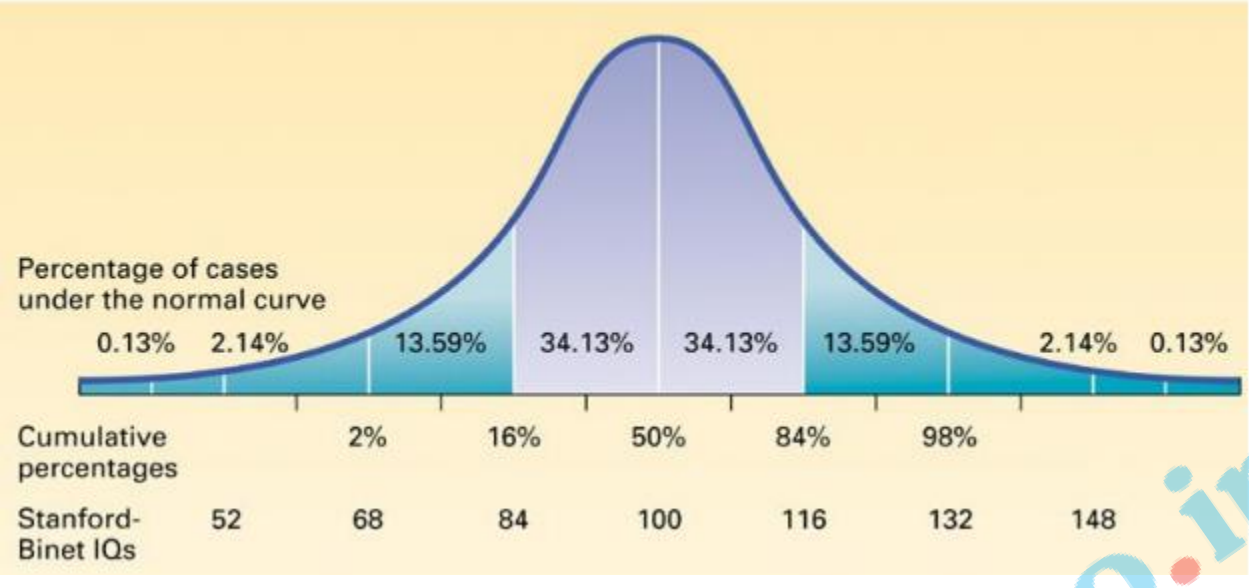
Validity is a test's ability to measure what it is supposed to measure. For more on validity, see page 14. Although intelligence tests cannot be considered good measures of general intelligence or general mental ability, they are reasonably valid indicators of the type of intelligence that enables good academic performance.

Critical Views On Intelligence Testing

Critics of widespread intelligence testing point out that politicians and the public in general misuse and misunderstand intelligence tests. They argue that these tests provide no information about how people go about solving problems. Also, say the critics, these tests do not explain why people with low intelligence scores can function intelligently in real-life situations. Advocates of intelligence testing point out that such tests can identify children who need special help, as well as gifted children who can benefit from opportunities for success.

How do you measure intelligence?

Intelligence Quotient (IQ): Measure of intelligence that takes into account a child's mental and chronological age IQ Score = MA / CA x 100 Mental age (MA): the typical intelligence level found for people at a given chronological age Chronological age (CA): the actual age of the child taking the intelligence test People whose mental age is equal to their chronological age will always have an IQ of 100. If the chronological age exceeds mental age – below-average intelligence (below 100). If the mental age exceed the chronological age – above-average intelligence (above 100).



The normal distribution: most of the population falls in the middle range of scores between 84 and 116.

- Very Superior Intelligence (gifted) - Above 130
- Superior Intelligence - 120 to 129
- High Average Intelligence - 110 to 119
- Average Intelligence - 90 to 109
- Low Average Intelligence - 80 to 89
- Borderline Intellectual Functioning - 71 to 79
- Mild Mental Retardation - 55 to 70
- Moderate Retardation - 40 to 54
- Severe Mental Retardation - 25 to 39
- Profound Mental Retardation - Below 25

Intelligence tests were developed for the practical function of selecting students for admission or placement in schools. Originally these tests were not based on any theory of intelligence. They defined intelligence as the ability to do well in school.