12.3: Measuring Intelligence

People are surprisingly similar to each other. We all eat, drink, think deep thoughts, plan excursions, and seek our goals. Yet, within these broad similarities are differences, uniqueness among individuals. Some are taller than others. Some are more artistic than others while others appreciate the outdoors more than others. Some even appear to be more intelligent than others. Psychologists have long been intrigued by individual differences, and they have developed an array of tests to try to measure these differences. When they focus their attention on the way people differ in their ability to think, reason, and remember, they raise questions about intelligence. How is intelligence measured? Measuring intelligence generally can be broken into tests of intelligence, and tests of aptitude and/or achievement.

The Stanford-Binet test is the most influential and traditional way of intelligence testing. It was developed in France by Alfred Binet and his collaborator, Theodore Simon. Binet's tests of intelligence measure skills such as judgment, comprehension, and reasoning—the same kinds of skills measured on most intelligence tests today. The Stanford-Binet test traditionally yields an overall score referred to as an intelligence quotient, or IQ. The term IQ, generally describes a score on a test that rates the subject's cognitive ability as compared to the general population. IQ tests use a standardized scale with 100 as the median score and a score between 90 and 110, indicating average intelligence. A score above 130 indicates exceptional intelligence and a score below 70 may indicate an intellectual disability. Like their predecessors, modern tests do take into account the age of a child when determining an IQ score. Children are graded relative to the population at their developmental level.

Aptitude tests are designed to predict what a person can accomplish in the future. An example is the general aptitude test battery, SAT-Scholastic Assessment Test, and ACT American College Test. They measure verbal and mathematical abilities. The idea is the knowledge gained in high school and the abilities associated are a predictor of how well a person will do. Achievement tests measure what a person can do at the time the test is given. Intelligence tests are usually aptitude tests designed to measure a broad range of mental capabilities. School grades are also considered a measure of knowledge gained in the formal education environment.
David Wechsler developed The Wechsler Intelligence Scale in 1939. His reason was the need to have a test to measure adult intelligence. Wechsler tests measure intelligence in adults 16-89, children age 6-16, and preschool and primary grades age 3-7 years of age. The Wechsler Scale is used to measure and help determine cognitive disorders. Often it is given to an adult who has suffered brain trauma, to determine what areas that may be affected, or certain childhood disorders, such as dyslexia. The test has 14 parts that measure verbal skills and performance skills.\(^1\)

The Sternberg Multidimensional Abilities Test measures all three of the types of intelligence he defined in his model. How do his test items differ from those on a conventional test? For one, there is more emphasis on ability to learn than on what has been learned. For example, verbal skill is measured by learning from context, not by vocabulary. For another, the test measures skills for coping with novelty, whereby the examinee must imagine a hypothetical state of the world, such as cats being magnetic, and then reason as though this state of the world were true. For yet another, the test measures practical abilities, such as reasoning about advertisements and political slogans, not just about abstract words or geometric forms.

Sternberg’s test measures provide more information than just the analytical intelligence measured by standard IQ tests on which, in Sternberg’s view, our society has placed far too much emphasis. Sternberg says, “If we want to measure intelligence, we can and should measure it broadly rather than in the narrow ways that have failed to give a true picture of human capacities.”\(^2\)

Reference