

Making Sense of I.Q. Scores

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There is no absolute agreement on how best to define “Intelligence”. Likewise, there are different opinions as to how intelligence is best measured. Even so, the need to make educational and vocational plans for students makes it necessary to measure intelligence, and the results of those measurements are most commonly reported as “I.Q.” scores.

The original concept of an Intelligence Quotient (I.Q.) arose from the observation that children develop increasingly complex skills as they grow up. On the whole, older children are “smarter” than younger children. However, among a group of children who are all the same age, some are “smarter” than others. From these observations arose the concept that certain developmental milestones are associated with certain age groups, but individual children develop at different rates.

Early intelligence tests presented children with challenging activities such as answering questions, solving puzzles, or recognizing abstract patterns. On the whole, older children performed better than younger children. Occasionally, it was noted that an individual child performed significantly better or worse than most other children of the same age. Evaluators might report that an eight year old child performed more like a ten year old, or perhaps, more like a six year old student.

The mathematical relationship between the child’s “mental age” and actual age (“chronological age”) became known as the “Intelligence Quotient” or “I.Q.” score. The evaluator simply divided the mental age by the chronological age and then multiplied the result by 100 ($MA/CA*100=IQ$). Thus, the eight year old child who performed more like a ten year old obtained an IQ score of 125 ($10/8*100=125$). If the same child performed more like a six year old, the resulting IQ score would be 75 ($6/8*100=75$). Any child who performed as well as his peers would earn an IQ score of 100 ($8/8*100=100$).

Modern intelligence tests no longer use a formula to calculate I.Q. scores, but many of the underlying principals remain the same. A perfectly “average” I.Q. score is still 100, but parents should not attach significance to scores that are slightly above or below 100. Every test has a built in margin of error and all scores are really estimates of a child’s “true” intelligence. Generally, an I.Q. score between 90 and 110 is within the “average” range of intelligence. The farther away from 100 a child’s score falls, the more he is somehow “different” from the typical student of the same age.

People who have not been trained in administering and interpreting the results of intelligence tests often make mistakes when trying to make sense of I.Q. scores. A common error is the belief that two children who earned the same I.Q. score are “just as smart” as each other. Even if two children of the same age had the same scores, it is unlikely that they got exactly the same items correct on the I.Q. test. Their specific strengths and weaknesses may be very different despite having the same I.Q. score. A less common error is the perception that if a student’s I.Q.

score is different the second time he is tested, he must have lost or gained some skills (just as a person who weighs less than they did before must have lost or gained weight). Minor variations in I.Q. scores over time are expected. Significant changes in I.Q. scores generally require careful consideration to determine the reason for the change.

Those people who would like to learn more about I.Q. tests and their resulting scores can find many books on the subject in a library or book store. The internet can be a source of both information and “misinformation”. Readers are cautioned that much of the information available on the internet regarding IQ scores presents personal opinion rather than researched based information.