



Braintrain Solutions – Testing

Cognitive Testing

Cognition - from the word cognition; meaning the mental process or faculty of knowing, including aspects such as awareness, perception, reasoning, and judgment. A very basic definition is comprehension or understanding of.

Diagnostic testing requires the uses of a cognitive test for specific reasons. These reasons include:

- There are certain cognitive abilities required for success in the school setting.
- If these abilities are not in place it is unproductive to introduce content and/or academic information. It may be introduced, but the student won't "get it" even if you do it at a lower level or "louder and slower".

It follows; therefore, that an ability that is identified as not in place (i.e. an undeveloped ability) can be considered a learning disability.

Fortunately, if an identified cognitive learning disability is simply an undeveloped ability, it can be developed through specific training/remediation. *BRAINTRAIN* chooses to use the appropriate age level form of the Structure of Intellect (SOI) Learning Abilities test for its cognitive test. The SOI identifies from 11 to 26 different learning abilities which affect school learning. By identifying which abilities are undeveloped we are able to develop a specific plan of remediation. This direct approach affords us the opportunity to devote time to specific undeveloped abilities and not waste time working on areas that are already developed. This testing also provides us with the information regarding an individual's learning styles. For example, it identifies whether an individual deals better with figural, symbolic or semantic content. Why is this important? For multiple reasons.

Individuals with a strength in figural intelligence deal best with concrete information that one can see, hear and touch directly. The earliest languages were pictographic concrete representations of concepts. Japanese and Chinese children are first introduced to reading with this type of concrete language. Figural thinkers best understand this type of concrete language. The following is also true about concrete thinkers:

- They best understand proportions when you draw them a pie chart
- They can run printing presses
- They are good at photography
- They are good at designing: layouts; building bridges; landscapes; dress patterns, etc.
- They can repair things

Most young children are figural thinkers and figural learners. Most of the information they have dealt with before they enter school is figural. If the child's learning style is predominantly figural, he or she may have difficulty learning to read. Figural learners do not make an initial connection with school; they may become non-readers and are frequently labeled as learning disabled.

Individuals with a strength in symbolic intelligence deal with information in notational form. In contrast to figural information, symbolic information is abstract, such as numbers, notes of music, codes, letters, etc. Therefore, these individuals are good accountants, bookkeepers, file clerks, computer programmers, court reporters, mathematicians, music transcribers, circuit designers, shipping clerks, electrical engineers and proofreaders. The two notational systems that we are most concerned with in education are alphabetic and numeric. Much of education, especially early education, is concerned with mastering these symbolic systems. The mastery of alphabetic notation is spelling and phonetic reading; the mastery of numeric notation is arithmetic and calculation. The student who is weak in symbolic intelligence will probably have difficulty with phonetic reading, spelling, and calculation.

Individuals with a strength in semantic intelligence deal well with concepts and ideas. They make very good novelists or poets; they can argue a case in court, handle public relations, prepare reports and make presentations. They also make good counselors or teachers. Words, when they represent the sounds of language are symbolic; words when they are the expression of ideas are semantic. Thus, when we say that a student reads well, but without comprehension, we mean that the student can use the words to recreate the sounds of language, but cannot process the meanings that the words express. Educators generally value semantic intelligence more than symbolic intelligence and certainly more than figural intelligence. This is a somewhat skewed perception of the world -- especially if your car breaks down in the desert, or you want to put a satellite into orbit, or you want something built, or you want to fly an airplane or do any number of things that are important, but not very semantic in content.

Unfortunately, many educators assume that children come to school with most, if not all, of these abilities in place. And these are just the tip of the iceberg. Identifying learning styles is only one component of the SOI. Most schools DO NOT test for any of these abilities; however, it should be obvious why the information is important to set up an appropriate plan for an individual.

As stated earlier, the results from the SOI are very user friendly. They direct us to any undeveloped learning abilities an individual has, as well as, their predominant learning style. They give us a very important piece of the puzzle.

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