

## The Science Behind the Assessments

You heard it here first: All assessments are not created equal!

Companies using assessments for either hiring or employee development need to be assured that they are constructed properly and that they consistently measure what they are supposed to measure.

Though they seem straightforward as final products, even the simplest assessments are complex instruments that are based on decades of research in the field on Industrial/Organizational Psychology. Brainbench's I/O Psychologists are dedicated to ensuring that each assessment meets professional standards of performance.

### Our Process

To ensure that every test meets acceptable standards, we have documented our procedures carefully and are audited at least annually by a third party in accordance with ISO-9001:2000 standards. Brainbench's test development processes have been ISO-9001:2000 certified for the last four years.

The ultimate measure of any test is whether it consistently measures what it is supposed to measure. This requires a careful process of test development, to ensure that the criteria regarding what the assessment measures is specific enough, and the strategy for measuring it is sound.

Once a prototype is constructed, key performance statistics at the question and assessment level can be gathered. Typically, test reliability is measured by several means to ensure that the scores will be consistent. Then, depending on the type of test, validity evidence is collected.

### Test Delivery and Administration

Brainbench assessments are all delivered via a state-of-the-art online technology. Completely redesigned and implemented in 2004, this technology allows us to implement the latest test types, including CAT and online simulations, to administer combinations of different tests all in one test event, and to provide reporting tuned to your needs.

Brainbench skill tests use Computer Adaptive Testing (CAT). This innovative technology applies the latest in testing theory to give you the most meaningful and accurate readings of a person's knowledge level possible. For additional information on our CAT engine, you can download our CAT Technical Manual.

### Test Development Process

Brainbench assessments are all developed by qualified professionals in accordance with recognized guidelines published by the American Psychological Association (APA), the Society for Industrial Organizational Psychologists (SIOP), and the US. Department of Labor. Further, we ensure our compliance with these standards by obtaining ISO-9001:2000 certification, an internationally recognized standard of quality, which include regular external audits of our processes and procedures.

Each test is developed by qualified subject-matter experts according to a carefully defined process. We have extensive documentation available on our processes. If you would like to examine any of these processes, please contact us.

## Ongoing Research and Continuous Optimization

Our in-house psychologists oversee the development, use, and maintenance of all of our products and are responsible for ensuring adherence with professional standards. As more data becomes available on each instrument, we apply this information quickly to refine the instrument. This continuous optimization process ensures that you are always using the best instruments science has to offer in making your most important decisions.

We continuously monitor several key dimensions of each assessment, including the following:

**Validity:** Test validity refers to how effectively an assessment measures what it is supposed to measure. Does a computer programming language test really measure the important aspects of the language? Does a personality test really measure the factors it is supposed to measure. Brainbench continually collects evidence of validity in accordance with APA standards.

**Reliability:** Test reliability is a sub-component of validity which refers to consistency of scores. Brainbench uses inter-item consistency to ensure Copyright 2004 Brainbench, Inc. All Rights Reserved. 55 Assessment Catalog that all components of a single assessment support the overall measurement and meet professional standards.

**Disparate Impact:** It's important to ensure that an assessment does not unfairly discriminate against protected groups. While this is always a function of both the instrument and the candidate pool for a specific job, Brainbench constantly collects and analyzes data that we use to assist our clients in interpreting results.

**Face Validity:** This refers to the questions themselves and the impression these questions make on the test taker. While not a direct measure of scientific quality, Brainbench has found that the test taker's opinion of the test and its relevance to the purpose it is used for are very important.

**Individual Question Performance:** For more than 75% of our tests, we use a computer adaptive testing (CAT) algorithm. This testing approach ensures the highest possible validity and reliability and is based on the individual performance of each question, which we monitor regularly. For additional information on our CAT engine, you can download our CAT Technical Manual.

## Technical Manuals

Technical manuals for our assessments are available upon request. These manuals clearly describe how each test was constructed and reflect the results of research regarding the use of each test. Each manual is written in clear, concise language. For many assessments, we also have results interpretation guides available.