

Development of the Core Abilities Assessment

Overview of the Core Abilities Assessment

The *Core Abilities Assessment* is designed to measure general mental ability of candidates for entry-level through first-line supervisor positions. Scores on the assessment indicate candidates' potential for successfully performing the problem-solving and decision-making activities commonly encountered in these positions. Scores are also predictive of the speed with which candidates learn and understand new concepts and acquire job-relevant knowledge.

The *Core Abilities Assessment* is composed of 20 of the highest quality items from the *Differential Aptitude Tests for Personnel and Career Assessment* (DAT for PCA; Bennett, Seashore, & Wesman, 1991). The items measure various aspects of general mental ability, including verbal and abstract reasoning, and numerical ability. There is a 15-minute time limit for completing the *Core Abilities Assessment*.

More information on the *Core Abilities Assessment* and DAT for PCA is available by logging into eAssessTalent.com, accessing the tab that says "Purchasing and Product Inventory," double-clicking on the product name (that is, "*Core Abilities Assessment*," or "DAT for PCA"), and then clicking on "Additional Product Information." The documents available on eAssessTalent.com include:

- ✓ [*Core Abilities Assessment Sample Report*](#)
- ✓ [*Core Abilities Assessment—Development*](#)
- ✓ [*Core Abilities Assessment—Administration Best Practices*](#)
- ✓ [*Core Abilities Assessment—How to Use Results in Employment Selection*](#)
- ✓ [*Core Abilities Assessment—Evidence of Reliability and Validity*](#)
- ✓ [*Differential Aptitude Tests for Personnel and Career Assessment Technical Manual*](#)

Development of the Core Abilities Assessment

Objective in Developing the Assessment

The *Core Abilities Assessment* was developed to provide professionals involved in employment selection with a way of quickly measuring abilities that are relevant or core for success in a wide range of entry-level positions and industries. These abilities include Verbal and Abstract Reasoning, and Numerical Ability.

Source of Items

The *Core Abilities Assessment* was developed using items from the *Differential Aptitude Tests for Personnel and Career Assessment* (DAT for PCA; Bennett, Seashore, & Wesman, 1991). The DAT for PCA is an eight-test battery designed to measure an individual's ability to learn or succeed in a number of different areas, such as verbal reasoning, mechanical reasoning, abstract reasoning, and space relations. Since the first edition was published in 1991, the DAT for PCA has been used extensively for employment selection.

For the initial pilot study of the *Core Abilities Assessment*, thirty of the best performing items were selected from the 85-item pool comprising the DAT for PCA Verbal Reasoning, Numerical Ability, and Abstract Reasoning tests. Classical Test Theory (CTT), Item Response Theory (IRT), and Differential Item Functioning (Mantel & Haenszel, 1959) analyses were used to identify the 10 best items from each of these tests.

Core Abilities Assessment Pilot Study

Three hundred and fourteen individuals participated in the *Core Abilities Assessment* pilot study, with a majority from skilled trades jobs in the manufacturing industry ($n = 207$). All participants completed as many of 30 assessment items as they could within a 30-minute period. Some participants also completed the *Wonderlic Personnel Test* (Wonderlic, 1992; $n = 205$), the DAT Mechanical Reasoning test (Bennett, et al., 1991; $n = 123$), and/or had supervisors who completed ratings on their job performance ($n = 115$). The Appendix provides more details regarding the composition of the sample. The pilot study was conducted from December, 2006 to June, 2007.

Final Item Selection and Administration Time

The selection of final assessment items was based on CTT and IRT results, evaluation of the time required to complete the assessment, and the need for balanced content with regard to item type. The final *Core Abilities Assessment* contains 20 items, has a 15-minute administration time, and has nearly equal numbers of Verbal Reasoning (6 items), Numerical Ability (7 items), and Abstract Reasoning (7 items) items.

Standardization

Information on the reliability and validity of the final *Core Abilities Assessment* can be found in the technical report *Core Abilities Assessment—Evidence of Reliability and Validity* available at eAssessTalent.com.

Appendix

Description of the Sample

The information provided in the following tables is based on *Core Abilities Assessment* data collected during the period December, 2006 through June, 2007.

Appendix 1. Composition of the Sample by Job Title (*n* = 288*)

Occupation

Administrative Assistant	2.1%
Clerk	2.1%
Engineer	1.0%
Human Resources Occupations	1.0%
Information Technology Occupations	1.0%
Maintenance	2.1%
Manager	3.8%
Operations Planner	1.0%
Plant Mechanic	67.7%
Purchasing	1.4%
QC Specialist	1.4%
Sales Representative (Non-Retail)	5.2%
Supervisor	4.2%
Team Leader	1.0%
Vice President	1.0%
Other	4.0%

*Twenty-six individuals did not provide a response about their job title.

Appendix 2. Composition of the Sample by Position Level (*n* = 288*)

Position Level	
Executive; Director	1.4%
Manager	3.8%
Supervisor	4.2%
Professional/Individual Contributor	13.9%
Skilled Trades	71.9%
Hourly/Entry-Level	4.9%

*Twenty-six individuals did not provide a response about their position level.

References

- Bennett, G., Seashore, H., & Wesman, A. (1991). *Technical manual for the Differential Aptitude Tests for Personnel and Career Assessment*. San Antonio, TX: The Psychological Corporation.
- Mantel, N., & Haenszel, W. (1959). Statistical aspects of the analysis of data from retrospective studies of disease. *Journal of the National Cancer Institute*, 22, 719–748.
- Wonderlic, E. F. (1992). *Wonderlic Personnel Test & scholastic level exam user's manual*. Libertyville, IL: Wonderlic Personnel Test.