Boehm Test of Basic Concepts-Third Edition
(Boehm-3)

Publisher/Date:
• Pearson Education, Inc., 19500 Bulverde Road, San Antonio, TX  78259. Published, 2001.

Purpose:
• Individually- or group-administered assessment of comprehension and understanding of basic relational concepts considered important to school success, in children grades K-2. The test’s uses include assessment and identification of weaknesses, assisting in providing specific targets for intervention, and pre- and post-intervention measurement. The test includes two parallel forms. Boehm–3 was designed to assess young children’s understanding of 50 important basic relational concepts, integral for school success, including key concepts, including size, direction, and position in space, time, quantity, classification, and general.

Provides:
• There are two parallel forms of Boehm–3; Form E and Form F. Each form targets the same 50 concepts, in the same order, using different contexts. Each form consists of a total of 50 pictorial items. Practice items are presented, followed by 25 test items and there is a break point (with additional teaching-items) after the first 25 items if examiners wish to administer the test in two sessions. Boehm–3 results are reported in raw scores, percent correct range, and percentile ranking.

Standardization Issues:
• Norming was performed on over 6,000 children to derive Fall norms, and over 4,000 children to derive Spring norms. Demographic considerations included representations by school size, SES, community size, geographic region, race/ethnicity, and gender. Children who received special services, but were mainstreamed in regular classrooms, were included. The overall sample appears representative to 1998 US Census demographics, although there are some disparities between demographic breakdowns on a number of variables reported on Form E between Fall and Spring standardization samples in Dr. Harold R. Keller’s Buros review. The disparities pointed out were not suggested as posing any significant cautions. The norming of the Spanish-version included much smaller samples (n=800 for Fall, n=400 for Spring). The Spanish standardization group reportedly under-represented these individuals from the Northeastern region of the US.
Reliability and Validity Issues:
- The test’s reliability was determined by checking internal consistency, standard error of measurement, test-retest reliability, and alternate forms reliability. Internal consistency was an acceptable .80-.91 (lower estimates with increasing grade). The Standard Error of Measurement (SEM) ranged from 1.14 to 2.43, indicating overall low variability in scores. Alternate form reliability is reflected in coefficients of correlation between two forms of the test, with a study (n=216) showing a respectable coefficient of .83. The publisher notes that nearly 94% of the students participating in the Boehm–3 alternate forms study had a difference of 4 or fewer raw score points from one form to the other. Overall test-retest reliability coefficients by form ranged from .80 to .84 (Form E), and .70-.89 (Form F). Content validity evidence was based on examining test content with various academic curricula and examination of teacher verbal instructions. Concurrent validity was reported comparing the Boehm-3 with measures such as the test’s earlier versions, the MAT-8, MRT-6, and OLSAT-7.

Additional Points:
- For the Spanish-version, alternate vocabulary words are presented to acknowledge geographically-related differences in Spanish usage. The Spanish-version’s reliability and validity evidence lacks the breadth and depth of evidence cited for the English-version. Furthermore, the Spanish version’s standardization sample is much smaller and appears to under-represent the Northeastern US geographic population.
- A class record form provides a visual representation of classroom-wide performance.
- Items were reviewed by experts for bias-issues related to gender, ethnicity, culture, SES, and geographic region. The initial try-out version in the test’s development-phase purposefully included an over-sampling of minority students to further examine bias.
- Test directions were modified to minimize language complexity.
- Easier items are interspersed with more difficult items in order to increase the child’s sense of success and optimize attention.
- Specific studies of predictive validity are not reported, though studies predicting school achievement based on comparisons with the Boehm and the Boehm-R are cited. While positive, they may not be particularly germane to the Boehm-3’s updated and modified items and format.