

Early Childhood Measurement and Evaluation Tool Review

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Brigance Inventory of Early Development II (IED-II)

Measurement Areas:

The IED-II is designed to provide information on how a child is performing in 5 key norm-referenced/standardized developmental areas:

- 1) Language Domain (receptive and expressive)
- 2) Motor Domain (gross motor and fine motor skills)
- 3) Academic-Cognitive (general/quantitative and pre-reading skills)
- 4) Daily Living Domain (self-help and prevocational)
- 5) Social-Emotional Domain (play skills and behavior and engagement/initiation skills)

The IED-II also provides information in 11 key criterion-referenced skill based developmental areas:

Developmental Sections with Comprehensive Skills Sequences

- 1) Perambulatory Motor Skills and Behaviors
- 2) Gross-Motor Skills and Behaviors
- 3) Fine-Motor Skills and Behaviors
- 4) Self-help Skills
- 5) Speech and Language Skills
- 6) General Knowledge and Comprehension
- 7) Social-Emotional Development

Early Academic Skills Sections

- 8) Readiness
- 9) Basic Reading Skills
- 10) Manuscript Writing
- 11) Basic Math

The IED-II can be used for children aged birth to seven years of age.

Purpose:

The IED-II is a norm and criterion-referenced measure designed to identify strengths and weaknesses of the child and can be used for

- diagnostic as well as classroom assessment (using normed and standardized scores),
- progress monitoring,
- program evaluation.

Length and Structure:

The IED-II takes 20-55 minutes to complete depending on the age of the child.

The IED-II is very extensive to administer in its entirety. The IED-II contains a series of skill sequences and comprehensive skill sequences with 46 different assessments validated for standardized testing across developmental/skill areas. It is possible to administer select items depending on the need for data. Data for many items can be completed through parent or teacher interview. Scores are calculated by assigning a point value to each skill assessed. Total points for skills (validated) can then be converted to quotients, percentiles, age equivalents and/or instructional ranges, depending on the need for specific kinds of results.

Materials:

The IED-II inventory with standardization and validation manual is available for USD \$185. The developmental record book needs to be purchased separately at a cost of \$35 for a package of 10 (1 record book is used per child). The standardized record book is also purchased separately at a cost of \$35 for a package of 10. Software can be purchased to assist in scoring, as a supplement to the Inventory for \$99.95. Additional software for creating goals and objectives for individual program planning is available for \$59.95.

As the IED-II is a new edition, academic reviews or studies of the test are not yet available.

Accessibility:

The IED-II is available in English.

Administration, Scoring, and Interpretation:

The IED-II is easy to administer, and the criterion referenced aspect of the test does not require complex scoring procedures.

When using the IED-II as a norm-referenced test examiners must have knowledge about standardized scoring procedures and administer the test in strict accordance with the directions for each assessment. The examiner can derive quotients (with a mean of 100 and a standard deviation of 15), percentiles, age equivalents, and instructional ranges for the normed portion of the test (see measurement areas for the normed portion). There are different starting points on the test depending on the age of the child and/or developmental level (this is indicated in the inventory). A total adaptive behaviour score can be derived from the summation of the normed skill areas.

Information on testing young children is provided in the administration procedures of the standardization and validation manual. Training information is available through the publisher at CAtraining.com

Subscales:

5 Domain quotients can be calculated for Total Motor, Total Language, Academic/Cognitive, Daily Living, and Social-Emotional using raw scores from individual assessments. Quotients can be calculated for each subdomain (i.e. fine motor and gross motor), and for composite scores.

Documentation:

The standardization and validation manual outlines specific procedures for administration, scoring, and interpretation, as well as provides information on reliability and validity. The standardized and developmental record books provide more detailed information for administration of the individual assessments.

Norming Sample:

The original norming sample included 1,156 children and was restandardized in 2003 on a national sample of 1,171 children across 24 states. The sample is reported to be representative of the US population in terms of ethnicity, income level, level of parent education, and area of residence when compared with projected 2003 US Census Bureau data.

Reliability:

The internal consistency of the IED was established in 1991 based on the original standardization sample. Original coefficient alphas ranged from .85 to .99. The 2003 standardization and validation study of the updated IED-II calculated Guttman scalability coefficients which ranged from .85 to .99.

Test-retest reliability was evaluated using evidence from the initial IED standardization study whereby the test was administered twice to 1,156 children aged 13 months to 7 years. In the 2003 standardization the test was administered twice in one week to 36 children birth to twelve months. The limited age range was rationalized because the new items were concentrated at these age levels. Test-retest scores ranged from .83 to .99.

Inter-rater reliability was determined by comparing scores when children are measured by different examiners. The percentage agreement in classification for a sample of 36 children and a second examiner in the 2003 study ranged from .82 to .96.

Validity:

Construct validity was assessed by examining the intercorrelations between IED-II domains, subdomains, and subtests. The correlations were generally highest across subtests/domains that would be expected to overlap (e.g. receptive and expressive language), however, the manual reports that the correlations are low enough among subtests to suggest that each measures unique aspects of development.

A factor analysis was conducted on the IED-II and results indicated a 3 factor solution. The first factor is understanding and expressing, the second factor is movement and social activity, and the third factor is academic-preacademic.

Concurrent validity of the IED-II was examined by assessing 484 children on the IED-II and a range of subtests and full batteries from tests with similar content (e.g., Bayley Scales of Infant Development, Slosson Intelligence Test-Revised, Preschool language scale and Battelle Developmental Inventory). The correlation between the IED-II and other selected assessments with similar content are summarized below and broken down into IED-II domains.

Motor: ranged from .52 to .83
Language: ranged from .36 to .79
Academic/Cognitive: ranged from .57 to .88
Daily Living: ranged from .56 to .78
Social-Emotional: ranged from .50 to .58

High discriminative validity is reported by the authors in that children from different groups (i.e. those with and without disabilities) perform significantly differently on the IED-II.

Predictive validity is referred to in the manual for the Brigance screens and given the IED-II includes subtests from the screens; the authors infer its predictive validity.

Publication Information:

The Brigance Diagnostic Inventory of Early Development – Second Edition (IED-II) was developed by Albert H. Brigance. This review is based on the 2nd edition published by Curriculum Associates, 2004.

Materials Used for Tool Review:

Brigance, A. H. Brigance Diagnostic Inventory of Early Development-Second edition (IED-II). N. Billerica, MA: Curriculum Associates, 2004.

Glascoc, F. P. IED-II Standardization and Validation Manual. Brigance Diagnostic Inventory of Early Development-II. Curriculum Associates, Inc, 2004.

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