K-SEALS
Kaufman Survey of Early Academic and Language Skills
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Theory Underlying the Measure

The K-SEALS is based on the theoretical model of Cattell-Horn-Carol hierarchical organization of broad and narrow cognitive abilities.

The 14 recall items assess expressive (naming) vocabulary for Standard American English, a skill akin to that measured by the K-ABC.

The 15 recognition items measure receptive (hearing) vocabulary for Standard American English, the same skill measured by the Peabody Picture Vocabulary Test (PPVT-R)
Theory Underlying the Measure

- 5 Receptive and 6 Expressive riddles included in the Vocabulary subtest resemble the easier items of the K-ABC Riddles Subtest.

- Like K-ABC Riddles, the riddles portion of the K-SEALS Vocabulary subtest probably comes closest to a Wechsler or Stanford-Binet Vocabulary Subtests in terms of what it measures.

- Numbers, Letters & Words subtest assess a variety of skills such as long-term memory, crystallized thinking, number facility, visual perception of objects and symbols, and early language development.
Theory Underlying the Measure

- The 20 item Articulation Survey Subtest measures young children’s typical speech production.
- Items should represent the typical sound production of young children.
- Vocabulary level of the items should be appropriate for the age range of the battery.
- The Articulation Survey was constructed to ensure that the seven sounds that occur most frequently in the English language (t, n, r, s, d, l, m) are adequately represented.
Development of Test

- K-SEALS was developed in stages.
- Item Construction
- Analysis of data collected during a nationwide tryout
- Analysis of data obtained for the representative national standardization sample.
- Development of the Item Pool- twenty items were developed for the Articulation Survey by an expert in speech assessment to represent young children’s typical sound production using an age appropriate vocabulary.
- Included were consonant phonemes, syllabic consonants, and consonant clusters in the initial, medial, or final positions of the words.
Development of Test

Sounds were selected to represent the speech development of children aged 2 years to 6 years of age.

Most Vocabulary and Numbers, Letters & Words items were developed by AGS item writers during 1986 and 1987, although some were taken or adapted from a pool of unused items originally constructed for the K-ABC.

208 vocabulary and academic skills items were tried out nationally along with a range of other tasks that were developed for the AGS Early Screening Profiles.
Development of Test

- A National Tryout was conducted in Spring 1987 on 349 children aged 2 through 6 years.

- Testing was performed in preschool centers and schools in Circle Pines, Minnesota and Tuscaloosa, Alabama.

- Factor analysis of the various tasks were conducted for ages 2 to 4 (N=183) and ages 5 to 6 (N= 166).

- Two language/academic subtests were constructed for the standardization edition based on the factor-analytic data: Verbal Concepts and Basic School Skills.

- Factor analysis also impelled the decision to include seriation and counting items on the same subtest with number, letter, and word items.
Development of Test

- Other considerations were: frequency distributions, coefficients alpha across the age range, observations during practice administrations, and administration time.

- The names Verbal Concepts and Basic School Skills were retained for the 25-item subtests included in the Cognitive/Language Profile of the AGS Early Screening Profiles, but the subtests names were changed to Vocabulary and Numbers, Letters & Words for the expanded 40-item versions the K-SEALS.
Many studies and data analyses were conducted during the K-SEALS standardization program to offer evidence on the construct, concurrent, and predictive validity.

One analysis evaluated the internal properties of the survey, while many others correlated the K-SEALS standard scores with several external criteria.

These criteria scores yielded by commonly used measures of intelligence, achievement, language ability, and school readiness/development, as well as teachers’ ratings.
Reliability

- Internal consistency was computed using split-half analysis.

- Data on stability of the scores over time is presented using a test-retest design.

- Finally, standard errors of measurement (bands of error) for subtests, scales, and composite, by age group, are presented.
Reliability

- K-SEALS split-half reliability coefficients were excellent (about .90) for Early Academic & Language Skills Composite; the Receptive Skills and Expressive Skills Scales; the Articulation Survey; the Numbers, Letters & Words Subtests, and the Letter & Word Skills Scale.

- They were excellent for Vocabulary at age 3-0 to 5-11, but only good (about .80) for 6 year-olds. Number Skills had good coefficients for ages 5-0 to 6-11.
Reliability

- Test-Retest results indicate excellent stability of all K-SEALS scores over an interval of a few weeks for an age range typically characterized by unpredictability and variability in their behavior and test performance.
Validity

- Mean raw scores for each subtest and scale increased steadily with increasing age.
- These results support the construct validity of the K-SEALS subtests and scales.
- The existence of age progressions does not in itself guarantee that a test measures a cognitive construct such as language or academic development.
Validity

- Correlations between the K-SEALS and several widely used measures of intelligence and achievement are presented.

- K-SEALS was studied against the K-ABC, a measure of both intelligence and achievement and the Stanford-Binet Intelligence Scale.

- K-SEALS correlated substantially with standard scores on the K-ABC Achievement, SB-IV Verbal Reasoning, and the SB-IV Test Composite (low .80’s).
Validity

Predictive Validity was assessed using standard scores on intelligence, achievement, and language tests, as well as teachers’ grades and teachers’ ratings of a child’s ability.
K-SEALS subtests are grouped into 3 scales that include: Vocabulary, Numbers, Letters & Words, and Articulation Survey.

Vocabulary subtest include: Vocabulary Recall (Expressive), Vocabulary Recognition (Receptive), Expressive Riddles, and Receptive Riddles.

Numbers, Letters & Words subtest includes: Number naming (Expressive), Number Recognition (Receptive), Expressive Number Concepts, Receptive number Concepts, Letter Naming (Expressive), Letter Recognition (Receptive), Word Naming (Expressive), and Word Recognition (Receptive)
Test Structure

- Articulation Survey shows a picture of an object and asks, “What is this?”

- Articulation Survey subtest assesses seven sounds that occur most frequently in the English Language (t, n, r, s, d, l, m).

- Articulation Survey includes 22 of the 24 English consonant phonemes, two syllabic consonants, and five consonant clusters in the initial, medial, or final positions of words.

- The “r” sound is assessed in each of the three positions; the “t, l, d and n” sounds are assessed in two positions; and the “m” and “s” sounds are assessed in one position.
Diagnostic Use

- K-SEALS is intended for use in preschools, elementary schools, speech and language clinics, medical agencies, community agencies, day care centers, psychological clinics, hospitals, private practices and any other setting in which 3-6 year old children are routinely or occasionally assessed.

- Used for speech and language evaluations as part of a comprehensive test battery for general evaluations or in brief testing sessions that focus on receptive and expressive skills and articulation.
Diagnostic Use

- K-SEALS can be used to assess language skills, language delays, communication disorders and general developmental delays.

- K-SEALS may also be used to for special education programs geared for noncategorical placement and service delivery.

- K-SEALS can also be used as evaluation tool for programs operating at the preschool, kindergarten, or first grade level.
Altogether, the Denver district received 459 applications for the 200 seats in the advanced-kindergarten program this school year. In order to qualify for advanced kindergarten, the young applicants need to score at the 90th percentile or higher on tests called the K-SEALS and not all score high enough to be admitted. (McCrimmons, 2010)

Example of K-SEALS being used for advanced placement of kindergarteners.
Personal Review

- The K-SEALS was very easy and very quick to administer.
- Administration was simple and straightforward.
- The administration took about 20 minutes.
- The child thought the test was fun and was fully engaged during the administration.
- Scoring was easy to do and to interpret.
- Rapport was easy to build during administration of the K-SEALS.
Referrences
