Review of the Naglieri Nonverbal Ability Test- Multilevel Form (NNAT-MF)
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General Information

Title: Naglieri Nonverbal Ability Test- Multilevel Form (NNAT-MF)
Author: Naglieri, Jack A.
Publisher: Harcourt Educational Measurement

Forms and groups to which applicable: The NNAT-MF is intended for use with children of culturally and socioeconomically diverse backgrounds including those with limited English proficiency. The NNAT-MF has seven levels. Kindergarten, first, and second grades each have their own test forms. Third, and fourth, fifth and sixth, seventh through ninth, and tenth through twelfth grades are grouped for testing levels (Stinnett, 2007).

Practical Features: The NNAT-MF is a brief group administered nonverbal ability assessment that is independent of education, culture, and language.

General Type: The NNAT-MF is a group administered, brief nonverbal measure of school ability for grades kindergarten through twelfth

Date of Publication: 1996

Costs booklets, answer sheets and scoring: The NNAT-MF technical Manual is $45.00. The NNAT-MF offers a choice of Examination Kits-Level A through Level G. Each kit includes one copy each of machine scorable or reusable test booklets, multilevel directions for administering and machine scorable answer documents. The cost of each kit is $23.75. A Package of 25 hand scorable booklets is available for $85.00. Response keys for all levels are available for $23.75. A package of 25 machine scorable answer documents includes options for scoring services by the Psychological Corporation available for $34.50. A package of 25 machine scorable test booklets includes options for scoring services by the Psychological Corporation available for $114.00 (Harcourt Assessment, 2007).

Time required to administer: 30 minutes

Purpose for which evaluated: The NNAT-MF is a screening instrument of nonverbal ability in diverse student populations.

Purpose and Nature of the Instrument

Stated purpose: Measures reasoning and problem solving skills in diverse student populations.
Description of test, items and scoring: The NNAT-MF has seven separate levels. Each level consists of 38 items with five answer choices, and each level has a separate test booklet. There are machine scorable forms available and the student must fill in a circle (1-5) to indicate the selected answer. The items involve the examination of parts of a design matrix to determine correct answer selection. The design matrices use shapes, designs, and colors that are not unique to any one culture. Test items are grouped into four clusters: Pattern Completion, Reasoning by Analogy, Serial Reasoning, and Spatial Visualization. Information can be obtained regarding performance in each of the cluster areas or raw scores can be combined to generate the Nonverbal Ability Index, a general ability measure. The NAI mean is 100 with a standard deviation of 15. Scoring services are available for purchase or on-site scoring may be used. On-site scoring procedures can be completed using a reflected light scanner or answer keys.

Use in counseling: Helpful to the school counselor in helping students with academic planning. The NNAT-MF is an appropriate assessment of students whose performance could be negatively impacted due to language differences, hearing impairment, or background. It can be used to screen students for advanced academics programs or to identify children with learning problems.

Practical Evaluation

Usefulness of manual: The manual is adequate in terms of technical presentation. The psychometric data for the test is presented in tables. Development procedures were not detailed in the manual (Stinnett, 2007).

Adequacy of directions for administering the instrument: The Directions for Administration document provides clear concise directions (Trevisan, 2007).

Qualifications of examiners: Master’s level degree in Psychology or Education, or the equivalent in related field with training in assessment.

Scoring Provisions: Scoring services are available for purchase or on-site scoring may be used. Minimal groundwork is needed to prepare the documents for scoring.

Technical Considerations

Normative sample: Standardized samples were taken in the spring and fall of 1995 and 1996 with a combined sample size of 90,000 students ranging from kindergarten through twelfth grades. Stratified random sampling was used. The demographic characteristics of geographic region, socioeconomic status, urbanicity, ethnicity, and private school placement closely mirrored the 1993-1994 National Center for Education Statistics (NCES). Norms included students with disabilities and students with limited English proficiency (Stinnett, 2007).

Reliability: Reliability of scores from the NNAT-MF was computed in the form of internal consistency for both fall and spring at each level and was computed separately for age and grade level. Reliability in the cluster areas was also provided. Internal consistency (KR-20) for data ranged from .80 to .93. NNAT reliability (KR-21) for cluster specific data were lacking in internal consistency falling in the mid-.20s.

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Validity: The NNAT-MF showed three forms of validity. The NNAT-MF had strong criterion-related validity with the Stanford Achievement Test-Form S. The majority of the correlation coefficients were in the .50s to .60s. Correlations with the Aprenda2 were lower and varied more (Trevisan, 2007). The score progression for the NNAT-MF was reviewed in terms of age differentiation to further support validity. It was expected that items would become progressively easier for older students than for younger students across levels. Also this pattern would be evident with in levels as the academic year progressed. Review of the mean p values and raw score means supported both expectations. Biserial correlations were computed for all levels of the NNAT-MF to determine if the instrument could divide high-scoring students from low-scoring students. Among the fall scoring students the median rbiss ranged from .50 to .73. The spring range was from .51 to .60.

Generalizability: Closely mirrors the 1993-1994 NCES estimates, however there is concern of some overrepresentation of Midwestern students and under representation of students from urban areas (Stinnett, 2007).

Evaluation

Comments of reviewers: Stinnett (2007) describes the NNAT-MF as satisfactory if needing a narrow measure of nonverbal ability. Before purchasing the test Stinnett (2007) recommends a cost-benefit ratio be considered especially if the test will be used repeatedly over a time period. Trevisan (2007) review recommends educators requiring an instrument to assess diverse populations need to consider the NNAT-MF.

General Evaluation: The NNAT-MF can be used effectively for a variety of needs when a brief screen of nonverbal ability is necessary. The instrument is easy to administer and the matrices used are not specific to any cultural group. Therefore, it can be assumed the test is fair for a diverse student testing population.

References

