

IDEAS:
Interest Determination, Exploration and Assessment System
MANUAL

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NCS Assessments
MINNEAPOLIS

Reliability

If the results of an interest inventory are to be used to help students and adults with career exploration and decisions, the inventory results must show reasonable stability over time. Three groups of individuals who had completed the Career Assessment Inventory were used to determine the test-retest reliability of the various scales on the IDEAS inventory. All three groups consisted mostly of high school and college students, with the remainder being employed adults. Appendix H presents the test-retest correlations, means, and standard deviations for these samples. Various settings and test-retest intervals (one week, two weeks, and 30 days) are represented.

The median reliability coefficients were very high, in the high .80s and low .90s, and were of the same magnitude (approximately .01 to .02 lower) as the values for similar scales on the Career Assessment Inventory. The careful attention that was paid during the scale development process to ensure that the internal consistency of each scale was high resulted in the high stability of the IDEAS scales over time. More elaborate research with the Career Assessment Inventory and the Strong inventories (Johansson & Campbell, 1971) has indicated that the lowest stability generally occurs for younger students and that stability

increases with age. The highest stability occurs for the shortest time intervals and decreases with the length of the test-retest interval.

For students in middle-school grades, results from interest inventories should be used only in the context of career exploration or as an introduction to careers and the world of work. Students should be encouraged to consider their results only as an indication of their current preferences and interests. It should be emphasized that the interests of many of them will change as they get older.

Research (Johansson & Campbell, 1971) has indicated that extremely dramatic changes generally do not occur, but the strengths of some likes and dislikes do change depending on the experiences students have in the ensuing years. Therefore, their interest scores relative to each other will shift up and down somewhat. Counselors and teachers can feel confident that an individual's IDEAS scores are valid indicators of his or her preferences. If the individual was retested several months later, there would be some minor changes in the scores, but his or her interest patterns across all scales would be extremely constant.

Validity

Determining the validity of the 16 IDEAS scales involved investigating their content validity, construct validity, and concurrent validity. Because the scales on the IDEAS inventory were developed to measure “pure” content areas of interest, no single index of validity is most appropriate. Therefore, all three areas of investigation should show evidence of meaningfulness.

Content Validity

As discussed earlier, the 16 IDEAS scales were constructed by relying heavily on item intercorrelations, cluster analyses, and cross-validation analyses using various samples of adults and students. In addition, each item had to have strong content validity with the other items in the cluster. Those items that could be included statistically within a cluster but whose content was not as focused as other items in the cluster were excluded. Strong content validity through inspection of item-intercorrelation data across all student and adult samples was a primary criterion. Using items that had strong face validity was also important during scale development. For example, when an individual responds “like” or “dislike” to the following items, he or she is revealing something about his or her science interests:

- Study effects of gravity
- Design a new rocket engine
- Work on a research project
- Read books on science
- Work in a research laboratory
- Do scientific experiments
- Enter a project in a science fair or contest
- Keep up-to-date on scientific research

On the basis of his or her responses to the Science items, an individual's high interests can be related to a preference for a variety of occupations and careers (for example, careers in engineering, biology, and physical science).

As a further means of ensuring strong content validity and applicability across various demographic groups, item-scale correlations for various student and adult populations used in norming the 16 IDEAS scales were computed. (These data are presented in Appendix E.) For each scale, the correlations between each item and the total scale score are provided separately by gender, norm group, and race (minority or Caucasian). Overall, the data are very consistent; almost the same correlational values are evinced across all demographic groupings. Internal consistency values were computed as an overall measure of homogeneity of the items on each scale. They were all very high, in the high .80s and low .90s. This evidence reflects the care used in selecting items to guarantee that each scale had strong content validity and internal consistency and maintained similarly strong validities across various groups: females–males, students–adults, and minorities–Caucasians.

Construct Validity

To assess construct validity, correlations were computed between the IDEAS scales, the longer similarly named scales on the Career Assessment Inventory–The Enhanced Version, and the scales on the Strong Interest Inventory (SII; Harmon, Hansen, Borgen, & Hammer, 1994). The correlations between the IDEAS scales and the Career Assessment Inventory scales were all very high, .92 and higher. These values were expected to be

high because the best items from the Career Assessment Inventory Basic Interest Area scales were used in the construction of the IDEAS scales. The correlations for the SII scales were also quite high—.80 and above—which is further evidence of the construct validity of the IDEAS scales. In some cases, similarly named scales were not available, but when comparisons were possible, all the values were very reasonable.

Of greater interest for construct validity were the scale intercorrelation data. As discussed earlier, scales were selected to avoid overrepresentation of any one of the six Holland types. The goal was to provide a broad base of interest measures covering a wide spectrum of interest domains. Care was taken to ensure that not more than three or less than two interest scales would be provided for each of the six major categories. The inventory would have minimal utility for a broad spectrum of students or adults if it contained scales that only tapped those interests and careers that are associated with one Holland type. Scale intercorrelations were examined to determine the extent to which each scale correlated with other scales in its major category and if it also evinced lower correlations with the other IDEAS scales not in that interest domain. For example, the Community Service, Educating, and Child Care scales make up the Social domain. These three scales should show high intercorrelations with each other and lower correlations with the other IDEAS scales.

Appendix F lists scale intercorrelations by the three norm groups, by gender, and by race. Overall, the intercorrelations among scales in the same interest domain were moderately high to high, in the .40s to .60s, and the correlations with other scales outside of the interest domain were lower, from the .00s to the .40s. In addition to the high scale intercorrelation values within each related group, the other correlational data were within the expected values. For example, scales in adjacent clusters tended to evince the next highest correlations, and scales in

nonadjacent clusters had the lowest correlations. These positive attributes provided reassurance that the development procedures resulted in the relative independence of each of the 16 scales to measure pure interest areas that were consistently not highly related to other interest areas on the inventory. Even though each scale has only eight items, the scale intercorrelation data strongly show that differentiated patterns of interests can emerge from the scales. They can provide individuals with a pattern of high scores for further investigation and a pattern of low scores that indicates fewer career-related interests at the time the inventory was completed.

Concurrent Validity

The 16 IDEAS scales were developed to measure pure content areas of interests; therefore, these scales should relate meaningfully to the occupational world. For example, skilled tradespeople should have high scores on the Mechanical/Fixing scale, and individuals in unrelated occupations should have low scores on this scale. Each IDEAS scale should exhibit this type of concurrent validity—the ability to differentiate among occupations.

To determine the concurrent validity of the IDEAS scales, data from more than 100 samples of students in career programs and adults employed in relevant occupations were used. Although these individuals had taken the Career Assessment Inventory (not IDEAS), it was possible to obtain IDEAS scores for them because all of the IDEAS items appear on the enhanced Career Assessment Inventory.

Overall, good concurrent validity was exhibited for the IDEAS scales. Individuals in occupations and career programs that were directly related to the interest dimension of each scale scored the highest, and those in unrelated occupations and career programs scored the lowest. For example, mechanics and repair people had the highest scores on the Mechanical/Fixing scale, military people

and police officers had the highest scores on the Protective Services scale, salespeople had the highest scores on the Sales scale, and so forth. Generally, the differentiation between the highest- and lowest-scoring occupation on each scale was approximately two standard deviations. The groups that were most closely related to each scale had

an average score of approximately 60, whereas the groups that were most unrelated to each scale had an average score of approximately 40. Appendix G provides additional information about the scores of those groups that scored highest and lowest on each scale.