COR Advantage: The Road to a Valid and Reliable Instrument

by Tomoko Wakabayashi

HighScope makes every effort to ensure that their instruments are reliable and valid, and the best in the field. A reliable and valid instrument, however, is no different from any other untested instrument if the user does not use it in a reliable way. Take an extreme example: Someone scores an assessment instrument written in Spanish with very minimal knowledge of the language. The instrument may be valid, reliable, and highly regarded; however, because the assessment was not used in a reliable way, your scores would not be valid. Similarly, if a teacher scores HighScope's COR Advantage without gathering and recording any anecdotes, this assessment tool will not produce reliable results.

So what does this mean? To ensure that a reliable and valid instrument truly provides reliable and valid scores and outcomes, users need to be trained, reliable users of the instrument. HighScope offers COR Advantage training and reliability assessment, which we encourage all COR Advantage users to complete. Passing the reliability assessment (80 percent agreement or higher) certifies that the teachers know how to use the instrument in the way it was designed to be used.

In the spring of 2012, Phase I validation of COR Advantage began in partnership with an expert consultant at the University of Illinois at Chicago. Findings from our Phase I validation study indicate that COR Advantage is a reliable and valid instrument. Here's how we know.

Documenting Reliability

The reliability of COR Advantage was documented in two ways. First, around 70 trained teachers were asked to score over 90 video vignettes and anecdotes as part of their reliability assessment. They agreed 85.7% of the time, indicating that COR Advantage has high interrater (or interscorer) reliability. If trained, different individuals can score the same child and conclude similarly about that child's development.

Second, using the actual COR Advantage classroom data, our analysis found high "internal consistency" for each content area. This means that a set of items in each content area are very closely related to each other, and they measure the same construct (e.g., math items all measure math; language items all measure language).

Findings from our Phase I validation study indicate COR Advantage is a reliable and valid instrument.

Documenting Validity

The validity of COR Advantage was documented in three ways. First, the content aspect of validity was established by having knowledgeable experts review the instrument. These content experts included renowned scholars and practitioners in the field of early childhood.

Second, we looked at whether the structure of the instrument was solid. Preliminary analyses indicated that the differences in scores at age category (0, 1, 2, 3, 4, 5 years old) were highly significant. In other words, children's progress, as indicated by the COR Advantage scores, followed the expected developmental progression.

Third, we examined external validity (or concurrent validity) to determine how well the various COR Advantage content areas capture important skills and knowledge in these areas as assessed by other established instruments. We therefore examined associations between children's COR Advantage scores and their standardized assessment scores, measured using the Woodcock-Johnson III Tests of Achievement (2001),[1] the Bayley Scales for Infant and Toddler Development (2005),[2] and the Social Skills Improvement System (2008).[3] We found strong correlations, highly significant, between infant-toddler's COR Advantage scores and Bayley-III scores in all content areas. For preschool and kindergarten, the correlations were moderate to high in many content areas, but especially so in language, literacy, and communication, and mathematics. Highly significant correlations mean that children who received a high score in a given content area for COR Advantage also received high scores on similar corresponding items when assessed using valid standardized assessments.

Phase I of the validation study gave us abundant opportunity to receive feedback from our users and content experts to refine our instruments. The COR Advantage that was released in the fall of 2013 has integrated all of these valuable inputs. Planning of Phase II validation study is underway. This will be a larger, more comprehensive study. We are consistently trying to improve. So, stay tuned! ■

Tomoko Wakabayashi, EdD, is the director of the Center for Early Education Evaluation at HighScope.

[1] Mather, N., & Woodcock, R.W. (2001). *Examiner's manual. Woodcock-Johnson III Tests of Achievement.* Itasca, IL: Riverside Publishing; McGrew, K.S., & Woodcock, R. W. (2001). *Technical Manual. Woodcock-Johnson III.* Itasca, IL: Riverside Publishing.

[2] Bayley, N. (2005). *Bayley Scales for Infant and Toddler Development, Third edition.* San Antonio, TX: Pearson.

[3] Gresham, F., & Elliott, S. N. (2008). *Social Skills Improvement System.* San Antonio, TX: Pearson.