

# HOW WE ESTABLISH AN EVIDENCE BASE FOR OUR MEASUREMENT TOOLS

We know, and research confirms, that emotional growth and well-being matters to student success in school and life. You want to use assessment to understand your students, to improve teaching and learning, and to move the needle on student outcomes. You need to be able to trust your student measurement data.

Insights, formerly xSEL Labs, submits all our assessments to the test to develop a strong evidence base. All of our assessments are based on extensive work demonstrating that these skills can be assessed, and that the assessments we bring to market have strong technical properties. We continue to study the technical properties of our assessments and publish our work in peer-reviewed scientific journals. Key studies are described below.

## Psychometric Properties and Differential Item Functioning of a Web-Based Assessment of Children's Emotion Recognition Skill

Aksu Dunya, B., McKown, C., Smith, E. (2019). Psychometric Properties and Differential Item Functioning of a Web-Based Assessment of Children's Emotion Recognition Skill. Journal of Psychoeducational Assessment, 38 (5), 627-641.

Emotion recognition (ER) involves understanding what others are feeling by interpreting nonverbal behavior, including facial expressions. This study evaluated the psychometric properties of Insights in two large and diverse samples totaling 7,684 children in kindergarten through third grade. Data were calibrated using Rasch dichotomous model. Differential item and test functioning were also evaluated across gender and ethnicity. Across both samples, we found consistent item fit, unidimensional item structure, and adequate item targeting. Analyses of differential item functioning (DIF) found six out of 111 items displaying DIF across gender and no items demonstrating DIF across ethnicity. The analyses of person measure calibrations with and without DIF items yielded no evidence of differential test functioning (DTF) across gender and ethnicity groups in both samples.

### Reliability, Factor Structure, and Measurement Invariance of a Web-Based Assessment of Children's Social-Emotional Comprehension

McKown, C. (2018). Reliability, Factor Structure, and Measurement Invariance of a Web-Based Assessment of Children's Social-Emotional Comprehension. Journal of Psychoeducational Assessment, 0734282917749682.

We examined the technical properties of Insights in a diverse national sample of 4,419 children in kindergarten through third grade. As in prior work, we found evidence of score reliability, as judged by consistency across items and time, and validity, as judged by its factor structure. We also examined the measurement equivalence of Insights—defined as the extent to which Insights scores have the same meaning and interpretation for children from different groups. For boys and girls, for children from different ethnic groups, and across meaning it measured the same underlying constructs; the metrics were the same—meaning that a one-unit change in scores means the same thing for members of different groups. In addition, for boys and girls, across different administrations, and to a lesser degree, for children from different groups, a given score reflects the same underlying ability level.



### Reliability and Validity of a Spanish Language Assessment of Children's Social-Emotional Learning Skills

Russo, J. M., McKown, C., Russo-Ponsaran, N. M., & Allen, A. (2017). Reliability and Validity of a Spanish Language Assessment of Children's Social-Emotional Learning Skills. Psychological assessment.

We reported the technical properties of the Spanish language version of Insights in a sample of 524 Spanish speaking students in kindergarten through third grade. Like its English language counterpart, the Spanish language version of Insights demonstrated good evidence of score reliability and validity, as judged by its factor structure and association with teacher reported positive behavior.

#### Social-Emotional Factors and Academic Outcomes Among Elementary Aged Children

McKown, C., Russo Ponsaran, N. M., Allen, A., Johnson, J. K., & Warren Khot, H. K. (2016). Social–Emotional Factors and Academic Outcomes Among Elementary Aged Children. Infant and Child Development, 25(2), 119-136.

We explored the relationship between performance on Insights (and similar assessments) and academic performance in a heterogenous sample of 330 children in two studies. Controlling for a brief measure of IQ, Insights performance is associated with reading achievement, and this is because the better children perform on Insights, the more positive their in-class behavior.

#### Web-based Assessment of Children's Social-Emotional Comprehension

McKown, C., Russo-Ponsaran, N. M., Johnson, J. K., Russo, J., & Allen, A. (2016). Web-based Assessment of Children's Social-Emotional Comprehension. Journal of Psychoeducational Assessment, 34(4), 322-338.

We reported findings from two field trials of Insights that included a diverse sample of 4,462 students in kindergarten through third grade. Insights scores are reliable, as judged by its reproducibility across items and across time, and valid for its intended use, as judged by its factor structure and associations with measures of social thinking skills, social behavior, academic skill.

#### **About 7 Mindsets**

Founded in 2009, 7 Mindsets provides mindset-based and mental health learning solutions for schools and districts nationwide. The company offers multi-tiered curricula, professional development, and data measurement tools that empower growth, drive measurable impact, and ensure safe and supportive learning communities. Its highly effective programs have been shown to improve student engagement, behavior, and academic achievement and have been used by over 5 million students and educators in all 50 states.

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