Learning-Related Cognitive Self-Regulation School Readiness Measures for Preschool Children

Mark W. Lipsey & Deanna N. Meador

and also Dale Farran, Kim Turner, Nianbo Dong, and Mary Fuhs

Peabody Research Institute
Vanderbilt University

IES PI Meeting, March 2013

Purpose of this measurement project

Identify a set of direct assessment measures for LRCSR applicable to preschool children that:

- Predict academic achievement, including gains in achievement (predictive validity)
- Agree with teacher ratings of classroom cognitive self-regulation (convergent validity)
- Can be easily administered in preschool settings
- Correlate with other CSR measures and show gains from the beginning to the end of preschool

Construct domain for learning-related cognitive self-regulation

- Executive function
- Effortful control
- Attention
- Cognitive self-regulation
========================
- Attention focusing, concentration, persistence
- Inhibitory control
- Patience
- Attention shifting
- Working memory
- Organizing skills

12 candidate measures

- Peg tapping
- Head-toes-knees-shoulders
- Dimensional change card sort (DCCS)
- Backwards digit span
- Copy design
- Kansas Reflection-Impulsivity Scale for Preschoolers (KRISP accuracy)
- KRISP reaction time
- Turtle-rabbit accuracy
- Turtle-rabbit reaction time
- Whisper task
- Spatial conflict
- Operation span

Criterion measures

- Predictive validity: Academic achievement
    - Woodcock-Johnson III: Applied Problems, Quantitative Concepts, Picture Vocabulary, Letter-Word Identification, and Oral Comprehension

- Convergent Validity: Child behavior ratings
    - Cooper- Farran Behavioral Ratings Scales (CFBRS): Work-Related Skills subscale
    - Temperament Assessment Battery for Children (TABC): Distractibility and Persistence subscales
    - Children's Behavioral Questionnaire (CBQ): Impulsivity and Attention Shifting subscales

---

Setting and participants

- 535 pre-k children from 58 classrooms within 38 schools/centers across 4 school systems assessed at the beginning and end of the pre-k year.
- 488 children located and completed end of kindergarten assessments (91% retention)
- 373 children in an independent cross-validation sample

Best measures by our criteria

- Peg tapping
- Head-toes-knees-shoulders (HTKS)
- Dimensional change card sort (DCCS)
- Copy design
- Kansas Reflection-Impulsivity Scale for Preschoolers (KRISP) accuracy score
- Backwards digit span