



Contents lists available at ScienceDirect

Journal of Experimental Child Psychology

journal homepage: www.elsevier.com/locate/jecp



Teachers' rankings of children's executive functions: Validating a methodology for school-based data collection



Michael J. Sulik*, Jelena Obradović

Graduate School of Education, Stanford University, Stanford, CA 94305, USA

ARTICLE INFO

Article history:

Received 23 August 2017

Revised 25 January 2018

Keywords:

Executive function
Classroom assessment
Teacher report
Rankings
Academic achievement
Self-regulation

ABSTRACT

We developed a novel, vignette-based ranking procedure to simultaneously collect teacher-reported executive function (EF) data for all students in a classroom. This ranking measure is an improvement over existing Likert-type rating scales because it can be completed more quickly and with comparatively little effort by teachers. Data for this validation study were drawn from a large, school-based study of third, fourth, and fifth graders ($N = 813$ from 33 classrooms in eight schools) in which ranking data and direct assessments of EF were collected. Using a subsample of students for whom teachers' ratings of EF and school records data were also collected ($N = 311$), we demonstrated that teachers' rankings of EF showed high convergent validity with teachers' ratings of EF and that both teacher-reported measures showed similar convergent validity with direct assessments of EF and similar predictive validity with respect to students' scores on standardized English/language arts and math achievement tests. Using data from the larger sample ($N = 813$), we conducted a simulation study demonstrating that the impact of missing data on the association between the rankings and the direct assessments of EF is minimal. Based on these results, the ranking procedure is a methodological innovation that enables the collection of relatively high-quality teacher-reported EF data for all students in a classroom quickly and with minimal burden on teachers. This vignette-based assessment method could be adapted to other domains of non-academic skills. We discuss varied uses of the ranking method for researchers and practitioners.

© 2018 Elsevier Inc. All rights reserved.

* Corresponding author.

E-mail address: michael.sulik@stanford.edu (M.J. Sulik).

Introduction

Non-academic skills have been identified as an important contributor to “success in life” (Gabrieli, Ansel, & Krachman, 2015), including academic achievement and educational attainment, physical and mental health, and economic success (e.g., Moffitt et al., 2011). As a result, many school districts are interested in supplementing standardized tests of academic achievement with teacher-reported measures of non-academic skills such as executive functions (EFs) to obtain a more holistic view of students’ competencies (e.g., West, Buckley, Krachman, & Bookman, 2017). Existing Likert-type scales are impractical for this purpose due to the large amount of time required for a teacher to evaluate many students. To address this limitation, we introduce a novel, vignette-based ranking procedure as an alternative teacher-report method of assessing EFs. This ranking methodology can be completed quickly and easily by teachers and provides information about EFs for all students in the class. We validated the ranking methodology by (a) investigating convergent validity with two well-established methods of EF assessment (i.e., rating scales and direct assessments), (b) performing a simulation study to understand whether and how missing data affect associations with the ranking data, and (c) examining rankings and ratings as predictors of students’ academic achievement, as indexed by standardized, state-administered tests of English/language arts (ELA) and math. The ranking methodology is an alternative to rating scales that can be used to quickly and efficiently collect teacher-report data at scale.

Why focus on executive functions?

EFs are higher-order cognitive abilities used in planning and goal-directed behavior. There are several reasons why EFs are ideal for developing and validating new teacher-report measurement approaches for use in educational settings. First, a large body of academic research has been devoted to developing high-quality direct assessment methods for EFs (Campbell et al., 2016; Kochanska & Knaack, 2003; Willoughby, Wirth, Blair, & Family Life Project Investigators, 2012; Zelazo, Müller, Frye, & Marcovitch, 2003) that can be used to help validate novel assessment instruments. Second, EFs have been robustly linked to self-regulated classroom behaviors that support school readiness and learning (Ciairano, Visu-Petra, & Settanni, 2007; Rimm-Kaufman, Curby, Grimm, Nathanson, & Brock, 2009) as well as students’ academic achievement (Allan, Hume, Allan, Farrington, & Lonigan, 2014; Yeniad, Malda, Mesman, van IJzendoorn, & Pieper, 2013). Recent studies further reveal that EFs predict longitudinal change in academic achievement (Blair, Ursache, Greenberg, Vernon-Feagans, & Family Life Project Investigators, 2015; Fuhs, Farran, & Nesbitt, 2015). Experimental studies have shown that EFs are malleable and can be improved by school-based interventions (Blair & Raver, 2014; Riggs, Greenberg, Kusché, & Pentz, 2006; Schmitt, McClelland, Tominey, & Acock, 2015). Finally, the classroom is a context in which teachers can easily and frequently observe behaviors that require EF skills such as the ability to sustain attention and to control impulses (NICHD Early Child Care Research Network, 2005; Rimm-Kaufman et al., 2009).

Limitations of rating scales in educational contexts

Questionnaires using Likert-type rating scales are a common method of collecting teacher-report data. Each item in a rating scale provides a statement or question (e.g., “Functions well even with distractions”), and numerical responses are assigned for different response options (e.g., 1 = *never*, 2 = *sometimes*, 3 = *always*). Responses to different items are typically averaged to create a single composite score, and reliability of the composite can be assessed using statistics such as Cronbach’s alpha. There are a number of published rating scales that can be used to assess EFs. One such rating scale that is well validated and has been widely used is the Behavior Rating Inventory of Executive Function (BRIEF; Gioia, Isquith, Guy, & Kenworthy, 2000), which consists of 86 items assessing a number of different subdomains of EF that include working memory, inhibitory control, and cognitive flexibility.

Download English Version:

<https://daneshyari.com/en/article/7273798>

Download Persian Version:

<https://daneshyari.com/article/7273798>

[Daneshyari.com](https://daneshyari.com)