



August 2025

Research Snapshot No.18

Authentic Assessment of Executive Functions in Early Childhood: A Scoping Review

Maria Camila Londono, Carmen Dionne & Carl Lacharité

What you need to know

This scoping review explores the existing literature on authentic assessment approaches for evaluating Executive Functions (EFs) in early childhood (under age 6).

Executive Functions (EFs) such as inhibitory control, working memory and cognitive flexibility are essential for children's development and day-to-day functioning. However, standardised neuropsychological tests often fall short of reflecting children's real-world EF use.

Authentic assessment approaches evaluate EFs in natural, familiar contexts using informant reports, play-based tasks, and observations.

The goal of this scoping review is to map out how these assessments are being implemented and to identify gaps in current tools and practices.

What is this research about?

This scoping review aims to answer the following question: What literature is available regarding the authentic assessment of EFs in early childhood?

What did the researchers do?

The researchers conducted a scoping review, following the Joanna Briggs Institute (JBI) guidelines for evidence synthesis, and the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) extension for Scoping Reviews (PRISMA ScR).

The researchers reviewed literature from 2010 to 2021, which yielded 790 documents, of which 32 met the inclusion criteria relating to authentic EF assessment in children under 6 years. The data extraction process was based on an iterative approach (i.e. an extraction grid was created initially and modified and updated throughout the process).

What did the researchers find?

1. Common Assessment Instruments

The Behavior Rating Inventory of Executive Function – Preschool Version (BRIEF-P) and the Childhood Executive Functioning Inventory (CHEXI) are widely used.

- o Both assessments rely on adult reports.
- o Neither are validated for children under 24 months.
- o Few tools exist for multidimensional or ecologically valid assessment in very young children.

2. Ambiguity in Terminology

Many studies didn't label their methods as "authentic assessment" but did use ecologically valid practices (e.g., caregiver involvement, naturalistic settings).

3. Commonly Assessed EF Domains in children below 6 years

The four commonly assessed Executive Functions identified are inhibitory control, working memory, cognitive flexibility,

4. Equity and Inclusion Gaps - Existing tools lack generalisability across diverse groups and few tools are validated for:

- o Children from low-income backgrounds
- o Children with disabilities
- o Culturally and linguistically diverse populations

How can you use this research?

1. This review supports the integration of authentic assessments into:
 - Early childhood education
 - Early intervention and disability services
 - Research and policy
 - Parent and caregiver practices
2. This scoping review emphasises:
 - The importance of authentic assessment of EFs to inform the goal setting process, and to guide supports tailored to children's developmental needs.
 - The use of valid and culturally relevant EF assessment tools use methods such as informant ratings, naturalistic and play-based observation, and culturally responsive practices.
 - That children of all ages and backgrounds are accurately understood.
3. Use Authentic assessments that are:
 - *Culturally and linguistically appropriate*, ensuring that the child's cultural background, home language, and family context are respected and meaningfully integrated into the assessment process.
 - *Conducted in natural and inclusive environments*, such as homes, classrooms, or playgrounds, where children feel safe, engaged, and can demonstrate typical behaviours.
 - *Grounded in careful observation*, using both structured and unstructured methods to gather information about how children plan, focus attention,

- follow instructions, and manage multiple tasks.
- *Play-based when appropriate*, recognising that play is a central context for learning in early childhood and provides an ideal opportunity to observe EF-related behaviours such as problem-solving, cognitive flexibility, and self-regulation.

Where to from here?

Opportunities exist for the use of authentic assessment approaches of EFs in early childhood through the development and implementation of multidimensional, ecologically valid tools that are sensitive to cultural and contextual diversity. This involves several key components:

1. *Development & Validation of new Tools*
 - Creation of comprehensive, multimodal tools (performance tasks, informant reports, observation).
 - Validation of tools with diverse populations.
2. *Adoption of Authentic EF Frameworks*
 - By using models aligned with naturalistic, developmentally appropriate observation and assessment.
3. *Incorporating Informant-Based Ratings*
 - Using tools like BRIEF-P and CHEXI which provide key insights from parents and educators.
4. *Use Play-Based and Observational Methods*
 - By observing EF behaviours in real-time through play and routine-based contexts.
5. *Ensure Cultural & Contextual Relevance*
 - By aligning assessments with the child's linguistic, cultural, and family background.

In conclusion, although authentic assessment of executive functions (EF) in early childhood remains underrepresented, it is critical for meaningful evaluation and the development of effective interventions. There is a need for culturally responsive, inclusive, and ecologically valid assessment tools that capture how young children apply EF skills in real-life contexts.

About the researchers

Maria Camila Londono, University of Quebec in Trois-Rivières, Quebec
Carmen Dionne, University of Quebec in Trois-Rivières, Quebec, Canada
Carl Lacharité, University of Quebec in Trois-Rivières, Quebec, Canada

Citation

Londono, M. C., Dionne, C., & Lacharite, C. (2025). Authentic Assessment of Executive Functions in Early Childhood: A Scoping Review. *Journal of Early Intervention*, 47(2), 224-247.

This Research Snapshot was prepared by Susan Gibson, PRECI committee member, Physiotherapist (BappScPhysio, MAppScPhysio)

In the spirit of reconciliation PRECI acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and

community. We pay our respect to their Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples today.