Comparing and Selecting an Executive Function Assessment

Executive Function (EF) is the set of foundational skills that help prepare children for success in school, college, and beyond. They have been termed "essential skills for life" because of their effect on adult life (including relationships, career, finances, etc.). Children are not born with Executive Function skills, but they are born with the potential to develop them.

Executive Function: Skills for Life

EF comprises the decision-making and self-regulatory skills needed for consciously controlling one's attention, thoughts, actions, and emotions. The core set of Executive Function skills encompass the ability to:

- Pay attention
- Hold information in mind and work with it
- Manage behavior and impulse control
- Think flexibly and problem-solve

EF skills make it possible for children to learn effectively and efficiently in a classroom context, and they help protect children against academic failure associated with stressors such as poverty that can affect learning and development.

Measure What Matters: EF Versus IQ

Intelligence quotient (IQ) is a number that represents a person's relative intelligence based on their knowledge (e.g., vocabulary) and reasoning abilities. It is measured using a standardized test.

IQ is often considered to be "fixed" just like the hardware on your computer. EF, on the other hand, is considered to be more like the software you use to make your computer run programs, which are constantly changing and being updated with improvements as a function of use, learning, and new innovations.

EF skills also can be measured through testing. However, Executive Function is a better predictor of academic success than IQ because EF life skills can not only be measured, but also can be taught, learned, developed, and can even have a positive effect on IQ scores.

Assessing Executive Function

The ability to objectively assess and develop these skills is essential for optimal learning and development. Early assessment of EF skills is vital to determine which students may need additional instruction or intervention for successful outcomes.

Comparing EF Assessment Providers

Selecting the optimal tool for measuring EF is a crucial decision, and there are numerous factors to take into consideration when comparing tests.

Reflection Sciences

Reflection Sciences uses an easily administered, quick and affordable assessment called the Minnesota Executive Function Scale (MEFS™) which was developed through 20 years of research conducted by professors at the University of Minnesota. Administering the MEFS requires a simple training and certification process to implement, which can be completed online or on-site.

MEFS measures EF skills using tablet games that adapt to age and performance. The MEFS is reliable and valid starting at 24 months of age and extending through adulthood. Individual scores and reporting are provided alongside national and local norms.

How Do Other Measurements Compare to MEFS?

The **NIH Toolbox Early Childhood Cognition Battery** was developed by the same researchers who developed the MEFS. However, NIH Toolbox Cognition Battery is intended for research and clinical purposes only, and it is only accessible to individuals with a PhD or MD. The cost is $500 per year plus training. It is categorized as a medical app "not intended for use outside of clinical application."

The **Delis–Kaplan Executive Function System (D-KEFS)** from Pearson Education targets children starting at the age of 8 years, and takes 90 minutes or longer to administer the full battery of tests (nine in total). Must have a PhD to purchase. The D-KEFS also offers no aggregate measures or comprehensive scores due to the tests' stand-alone design. The cost of each kit is $800 plus record forms.

The **Devereax Early Childhood Assessment (DECA)** from Kaplan Early Learning is a checklist administered to parents and teachers to assess children's positive and negative behaviors in the areas of initiative, attachment, and self-regulation. Rather than a direct assessment, it is a subjective measure. It is also not considered appropriate for children over the age of 5. The cost of each kit is $209.95 plus record forms.

The **Childhood Executive Functioning Inventory (CHEXI)** is free to researchers and clinicians, offered in a variety of languages, and focuses on children aged 4 to 15 years. It is a checklist administered through a 15-minute paper and pencil format, is a subjective checklist rather than a direct assessment, and has no online scoring available.

The **Comprehensive Executive Function Inventory (CEFI)** offered by MHS (Multi-Health Systems Inc.) This questionnaire measure is available in Spanish and can be filled out by parents and teachers of children ages 5-18. It has 100 items pertaining to nine subscales. The cost is $549 for each complete scoring software kit.

The **Behavior Rating Inventory of Executive Function (BRIEF)** and its preschool version (**BRIEF-P**) offered by PAR are questionnaires developed for teachers and parents to rate children's EF in school and home environments. It must be scored by a professional. This measure is primarily valid for clinical use to help identify extreme problems with EF and is less sensitive to individual differences within the normal range. The cost is $253 per kit plus record forms ($2.56) per child.

A Clear Advantage

Assessment	Method	Qualification Level*	Age Range	US Norms (N)	Time to Administer	Digital Scoring	Professional Development
MEFS	Performance	A	2–Adult	7,963	4 min	✓	✓
NIH Toolbox	Performance	C	3–Adult	In progress	10-20 min	✓	No
D-KEFS	Performance	C	8–Adult	1,500	90 min	PC	No
DECA	Questionnaire	A	3–5	No	10-15 min	✓	✓
CHEXI	Questionnaire	C	4–15	No	15 min	No	No
CEFI	Questionnaire	B	5–18	1,400	15 min	✓	No
BRIEF-P	Questionnaire	B	2-5	762	10-15 min	PC	No

* A = Anyone; B = Master's degree; C = PhD or MD

The MEFS offered by Reflection Sciences is the most efficient and objective assessment program available with the most support for educators and practitioners.

MEFS Training

Our training and certification process was designed to be quick, efficient, convenient, and affordable so users can implement the tools almost immediately.

Using the MEFS App

The MEFS app uses a standardized and normed assessment with an intuitive, game-like interface to make testing easy and fun, with multiple test forms in five different languages (and more being developed). Test times are short (under 5 min) and can be set to begin at the appropriate age level (as early as 24 months).

Reporting and Support Services for MEFS

MEFS has a seamless scoring system with individualized, user-friendly performance and growth charts along with national and local percentiles. Our services also include tech support and ongoing professional development.

Providing Easy, Measurable Solutions for EF Assessment and Development

At Reflection Sciences, our goal is to reduce gaps in achievement and opportunity by advancing the science of Executive Function to accelerate learning.

We have the professional development, training, and tools for assessing and promoting the healthy development of EF skills, and we want you to be able to benefit directly from that information, contribute your own data, and play an active role in the process.

Contact us today for more information on our services or to get started.