Intelligence, IQ, Tests, and Assessments: What Do Parents Need to Know? What Should They Tell Their Kids?

By Dona Matthews, Ph.D. and Joanne Foster, Ed.D.

As the school year begins, so begins another season of testing. Embarking on the standardized testing process often leads parents of gifted children to other questions about intelligence, tests, and assessment practices. What is intelligence? Do IQ tests measure it? Are there better ways of deciding who needs gifted programming? What can parents request by way of results and their interpretation? Should parents tell their children about their test results?

Parents whose children attend public school know that most gifted testing and assessments are managed by the school or district. Those seeking private school or alternate programming options may need outside tests in order to qualify for specific gifted programs. Specifics can be confusing—answers to these questions can inform parents in securing the best possible educational opportunities for their children.

Before we address these questions, it’s important to clarify the difference between tests and assessments. An assessment is a comprehensive study of a person’s strengths and weaknesses, using a variety of approaches, including tests, inventories, questionnaires, interviews, observa-
tions, and reports from others. A test—an IQ test, a math test, a hearing test—is just one component of an assessment. Tests yield scores, whereas assessments yield findings and recommendations. With that in mind, we share information about intelligence, IQ tests, and assessments, in response to questions parents frequently ask.

What Is Intelligence?
Here's a perspective based on evolving findings in neuroscience and cognitive psychology:

Intelligence is the ability to understand complex ideas, adapt effectively to the environment, overcome obstacles, engage meaningfully in various forms of reasoning, and learn from experience. It develops incrementally, and varies across time, situations, and domains.¹

Current research shows that intelligence is far more dynamic, accessible, and vibrant—and less mysterious—than people once thought.

Parents can actively:
• Nurture their children’s abilities by helping them discover interests and engage in more compelling challenges.
• Foster their children’s creative and critical thinking skills, and ensure they’ve ample time for independent play and quiet reflection.
• Help their children understand their capabilities and responsibilities so they’re better equipped to build their own intelligence, skill sets, and social and emotional strengths.

Parents who are collaborative and informed advocates are well positioned to enable their children to engage in healthy intelligence-building across many different areas from toddlerhood through the teenage years.

Do IQ Tests Measure Intelligence?
There are many tests that provide an intelligence quotient (IQ). The most valid and reliable are administered one-on-one by psychologists. They assess vocabulary, general knowledge, different kinds of reasoning, and short-term memory—all of which contribute to academic learning.

Current research has found there are limitations to IQ tests.² These factors should be taken into consideration when using IQ tests as a measure for identifying gifted and talented students:

Scoring. An IQ score that’s very high can confirm a child’s need for gifted education, but a lower score doesn’t necessarily mean a child wouldn’t be well placed in gifted programming. A lower score can reflect a problem at the time of testing (e.g., illness, emotional concerns, hunger), a creative or contrarian attitude, test anxiety, language barriers, or other reasons children don’t demonstrate the best or most of which they’re capable.

Narrow Range of Skills. A serious concern with using IQ testing as the sole measure of potential is the narrow range of skills evaluated. Many important dimensions of real-world functioning are barely touched on, including social and emotional abilities, creativity, motivation, drive, and persistence. According to what’s known about how intelligence develops, it makes better sense to say, “Her mathematical and scientific reasoning skills are highly advanced for her age,” than, “She’s highly intelligent.”

Intelligence is Not Static. Assessment practices often assume that intelligence is stable—but it’s not. Researchers are discovering more and more about how the brain works, and how abilities develop. Intelligence changes with motivation, effort, and opportunities to learn. A one-time IQ score is not a predictor of future competence or success. And for many reasons, the younger a child is when he’s assessed, the more likely it is that his scores will change substantially over time.³

Alfred Binet, a pioneer in intelligence testing, recognized the changeable nature of intelligence long before today’s findings on neural plasticity (the way the brain changes and develops in response to experience): “With practice, training, and, above all, method, we manage to increase our attention, our memory, our judgment, and literally to become more intelligent than we were before.” ⁴

Diversity Differences. Another important criticism about IQ tests concerns the persistent differences in scores across race, geography, and socioeconomic status. These differences reflect many factors that are unrelated to intelligence, including differences in test-taking sophistication, and opportunities to learn the kinds of things included in IQ testing.⁵ The IQ and learning gaps also include real differences in past and current intellectual challenge and stimulation.

Are There Better Ways than IQ to Decide Who Needs Gifted Programming?
An intelligence test score may provide clues about a child’s educational needs but this should be taken into consideration in conjunction with other sources of information.

Parents with concerns about whether their child’s learning needs are being met sometimes ask for a gifted assessment. They may request this at their child’s school or through private consultation with a psychoeducational consultant. However, a solid starting point in most situations is to work with their child’s
classroom teacher. It can be beneficial to ask the teacher these three practical questions:

- “What are my child’s areas of strength and weakness?”
- “What does she need right now in order to be both challenged and supported in her learning?”
- “How can I help?”

The best way to answer these questions is to be strategic, thinking about them one at a time and in relation to the child’s (1) academic achievement, (2) reasoning ability, (3) interest, and (4) persistence, as each

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of these components applies to specific subject areas.6

By taking time for careful reflection, making notes, referring to past reports and work portfolios, and talking with people who work directly with a child in various learning environments in and out of school, it’s possible to get a comprehensive understanding of individual needs. That provides a foundational base for understanding educational programming and other learning options.

What Can Parents Request by Way of Test Results and Their Interpretation?

After an assessment, parents often ask us, “Is my child gifted?” However, it’s more productive to ask, “Does my child have abilities that are advanced, compared to others his age?” and, “Does he have areas needing special attention?” In order to answer these questions, parents can request the following:

1. Results by academic subject areas. Knowing the score breakdown by subject area helps parents ensure their child is being given programming that matches his ability in different domains.

2. Degree of advancement. Knowing that a child is “mathematically gifted” is a good start. The next questions to ask are, “How far advanced is she? What level of programming does she need?” A third grade child who scores at Grade 9 mathematically needs different challenges than a third grade child who scores at Grade 5.

3. Scores in percentiles. Percentile scores are more user-friendly than raw scores or standard scores. A child who scores at the 60th percentile in language skills (that is, better than 60% of same-age others) and better than 99.9% of others mathematically, requires mathematical advancement, but probably not verbal advancement.

4. Interpreting results without worrying over time with opportunities to learn, they can disclose test results without worrying about damaging their child’s confidence or inflating his ego. Here are some suggestions: Be open. Provide as much information as your child wants, sharing the numbers if he’s interested and explaining what they mean.

2. Translate results into practical implications. “Your verbal reasoning scores were exceptionally high. I guess that’s why you’re so great at debating ideas with your sister.

It also means you’ll need harder work than most kids.” Or, “Your science scores weren’t so strong. Is that because you haven’t had a chance yet to learn what was on the test? Maybe we can find areas you’d enjoy learning more about.”

3. Remind your child that everyone has strengths and challenges. No matter how well he’s done, talk with him about people who are exceptional achievers in one or more areas, but not necessarily in others. Discuss how some strengths show up in academic assessments, and some don’t. Ask him about areas he sees as his own strengths as well as weaknesses.

4. Emphasize the hard work component of learning and achievement. This applies both to your child’s areas of strength and to his relative weaknesses. You can emphasize this by modeling persistence and resilience in your own daily activities.

If your child doesn’t make the cut, nobody should conclude she isn’t a gifted learner, or (if she came close) that she’s “almost gifted.” She may have advanced learning needs in one or more areas, either now or in the future—abilities that didn’t show up in whatever assessment was conducted. Parents should also be aware that a full scale IQ score does not always accurately reflect ability. Large gaps in subscores (particularly in the areas of working memory or processing speed) may be an indicator of a possible learning disability or twice-exceptionality.

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Last Word
It’s good for parents to be test-savvy. However, if you stop to consider the differences across the lives, learning experiences, interests, and abilities of children, it becomes evident that it’s difficult—if not impossible—to quantify how anyone’s intelligence will develop from infancy through adolescence and into adulthood. We do know, however, that parents can have a huge impact on their children’s intelligence by providing them with the support and encouragement that will see them through challenging times, bolster their abilities, enhance their sense of self, and enable them to be the best they can be. It’s exciting and empowering to realize a child’s intelligence changes over time, and can be developed with nurturing and access to rich and fulfilling learning experiences.

Authors’ Note
Dr. Dona Matthews has been teaching, writing, counseling, consulting, and conducting research on gifted-related issues since 1985. She has written dozens of articles, book chapters, and conference presentations, and has co-authored numerous books, including Beyond Intelligence: Secrets for Raising Happily Productive Kids, Being Smart about Gifted Education, The Development of Giftedness and Talent Across the Life Span, and The International Companion to Gifted Education. She was Executive Director, Millennium Dialogue on Early Child Development, University of Toronto, and founding Director, Hunter College Center for Gifted Studies and Education, City University of New York. Dona currently lives and works in Toronto, where she contributes to The Creativity Post and writes blogs for www.beyondintelligence.net.

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Endnotes