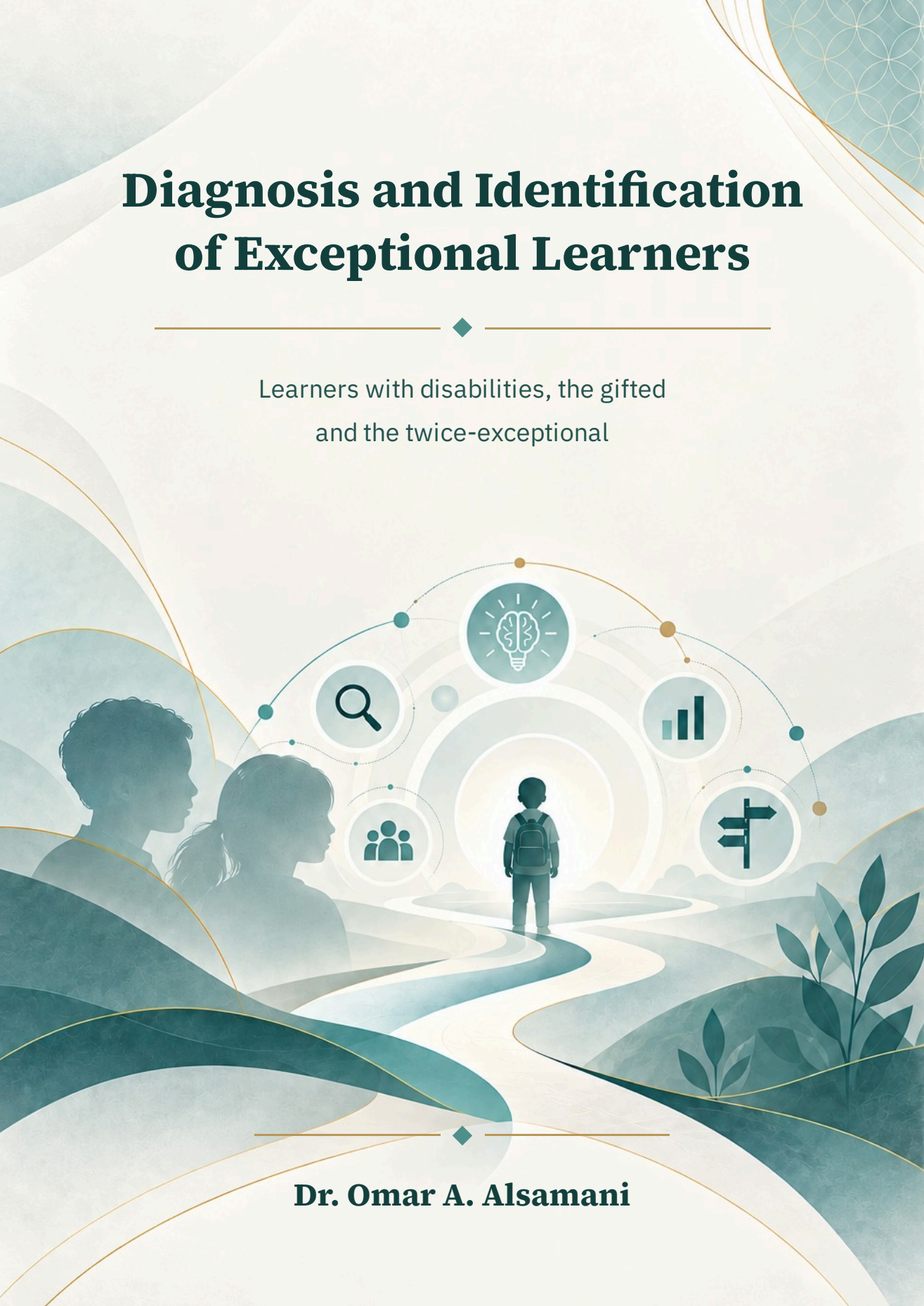


Diagnosis and Identification of Exceptional Learners

Learners with disabilities, the gifted
and the twice-exceptional



Dr. Omar A. Alsamani

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12

Chapter 12

Giftedness

Where the inquiry into disability categories turns to what impedes learning, the inquiry into giftedness turns to what lies beyond what the classroom offers. And because giftedness does not force itself on our attention as disability does, the greatest danger in identifying it is overlooking a gifted student whom no one noticed, a more serious error than misidentifying one.

Scene from the teachers' room

The fourth-grade teachers were asked to nominate students for the gifted program. Each teacher nominated her highest-scoring students: the organized ones who raise their hands and hand in their homework on time. None of them nominated Jana, because she “daydreams a lot, and her spelling grades are average,” even though her teacher the previous year had thought she might be gifted.

But the science teacher remembered that two months earlier, in an open-ended project, Jana had designed an experiment to test which types of soil hold water the longest, and had recorded her results in a table that nobody had asked her for.

Is Jana gifted? Are the nominated students gifted? Perhaps, and perhaps not: high grades and good conduct are not giftedness, and daydreaming and average grades do not rule it out. In this chapter, we set out how to answer that question with evidence rather than impressions.

Chapter objectives

After studying this chapter, the reader should be able to:

- 1 Compare four models of giftedness (Renzulli, Gagné, Subotnik and colleagues, and Pfeiffer) in terms of what each looks for, its tools, its threshold, and whom it may miss.
- 2 Determine, in a given identification program, which features are consistent with the principles of fair identification and which violate them, and propose a modification for each violation.
- 3 Design opportunities to display giftedness that precede nomination, and determine, in a given situation, how their absence affects teacher nomination.
- 4 Interpret the results of ability and creative thinking measures for a gifted student, including the difference between the General Ability Index and the Cognitive Proficiency Index, the ceiling effect, and the results of above-level testing.
- 5 Apply the admission criteria in Saudi regulations and the result of the Mawhiba measure to a given student, and critique them in light of the principles of identification.
- 6 Judge whether the evidence in a new case suffices for a determination of giftedness and the choice of service, justify that judgment, and distinguish the gifted student from the high achiever and from the student with a disorder.

Introduction

Identifying gifted learners differs from diagnosing disability both in the direction of the question and in the nature of the costliest error. The inquiry into disability categories is directed at what impedes learning; the inquiry into giftedness is directed at what exceeds what the classroom provides. Because giftedness does not catch a teacher's attention the way disability does, the greater risk is that a gifted student will be missed, whether because he or she was never given an opportunity to show ability or because the student did not fit the picture of the organized, high-scoring pupil, as happened to Jana in the opening scene. Who is found and who is missed depends on the definition of giftedness adopted, on the instruments and their ceilings, and on the admission rules.

We open the chapter by defining giftedness and its models (Section 12.1), then present the principles of identification and the construction of local norms (Section 12.2), followed by nomination, the opportunity to display, and nomination and observation tools (Section 12.3). We then take up ability measures and their limits, the ceiling effect, and above-level testing (Section 12.4), followed by creativity, achievement, and performance (Section 12.5), instrument profiles (Section 12.6), and identification in the Saudi context and the decision pathway (Section 12.7). We apply all of this to three cases (Section 12.8) and close with what resembles giftedness and what conceals it (Section 12.9).

 Identification, not diagnosis: what sets the concept apart in giftedness

In the field of gifted education, the term **identification** (**Identification**) denotes a comprehensive educational process whose purpose is to determine which students need enrichment or acceleration services beyond what the regular classroom offers. Giftedness is not a disorder whose symptoms are sought out; it is high potential or performance for which we seek the service that will develop it. The process therefore starts from the program's definition of giftedness and from the services it provides: the instrument is chosen according to the type of service, multiple criteria are used instead of a single score, and the student is compared with local norms that take into account the opportunities he or she has had (NAGC, 2019b; Pfeiffer, 2015). Its outcome is a decision to place the student in a program, open to review, unlike a permanent classification that follows the student, because giftedness develops and emerges at different times (Lohman & Korb, 2006). Its most common error is **omission**: missing the student who was never nominated in the first place, which happens more often than placing a student who does not need the program (Card & Giuliano, 2016).

With disabilities, by contrast, identification is bound up with determining **eligibility** for special education services: the questions are whether the student has a disability in one of the specified categories and whether it affects his or her learning to a degree that calls for those services. In many categories, such as autism spectrum disorder and attention-deficit/hyperactivity disorder, this runs alongside a clinical diagnosis made against the criteria of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2022) or the International Classification of Diseases (**ICD**), issued by a qualified professional and sometimes the basis for treatment outside school. The question in disability is "What impedes this student's learning, and does he or she

qualify for services?"; in giftedness it is "What does this student need that the classroom does not provide?" For this reason, we prefer the term "identification" for giftedness and use "diagnosis" when we are speaking of a disorder, as when distinguishing giftedness from conditions that resemble it in Section 12.9.

12.1 What is giftedness?

Definitions of giftedness abound, and no single agreed definition unites them. This multiplicity has practical consequences, because the definition a program adopts determines whom it looks for and with which tools. A program that defines giftedness as a high IQ will administer an intelligence test; one that defines it as creativity will look for creative products; and one that defines it as excellence in a particular domain will measure that domain. The most prominent conceptions follow.

Giftedness as high general intellectual ability

The scientific study of the gifted began with Lewis Terman, who launched his longitudinal study of gifted children in the 1920s and defined the gifted child by a very high score on an intelligence test: an IQ of roughly 135–140 or above on the Stanford–Binet for most of his sample, that is, approximately the top 1% (Terman, 1925). General intellectual ability remains part of most definitions, but relying on it alone has been criticized for overlooking giftedness in specific domains, creativity, and motivation.

Renzulli's Three-Ring Conception

In his Three-Ring Conception, Joseph Renzulli proposed that gifted behavior emerges when three traits come together: above-average (though not necessarily exceptional) ability, task commitment, and creativity (Renzulli,

1978). What matters in this model is that it speaks of **gifted behavior** that appears in certain situations, rather than a fixed trait that a student either has or lacks.

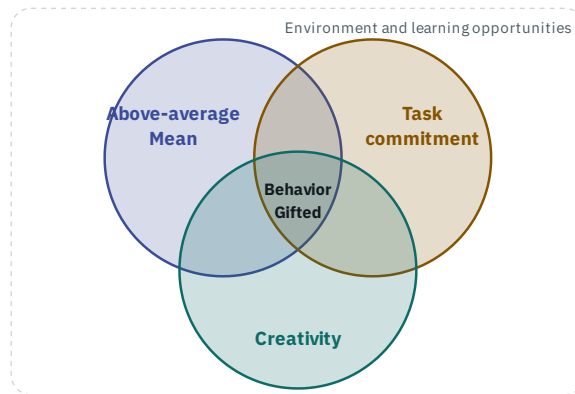


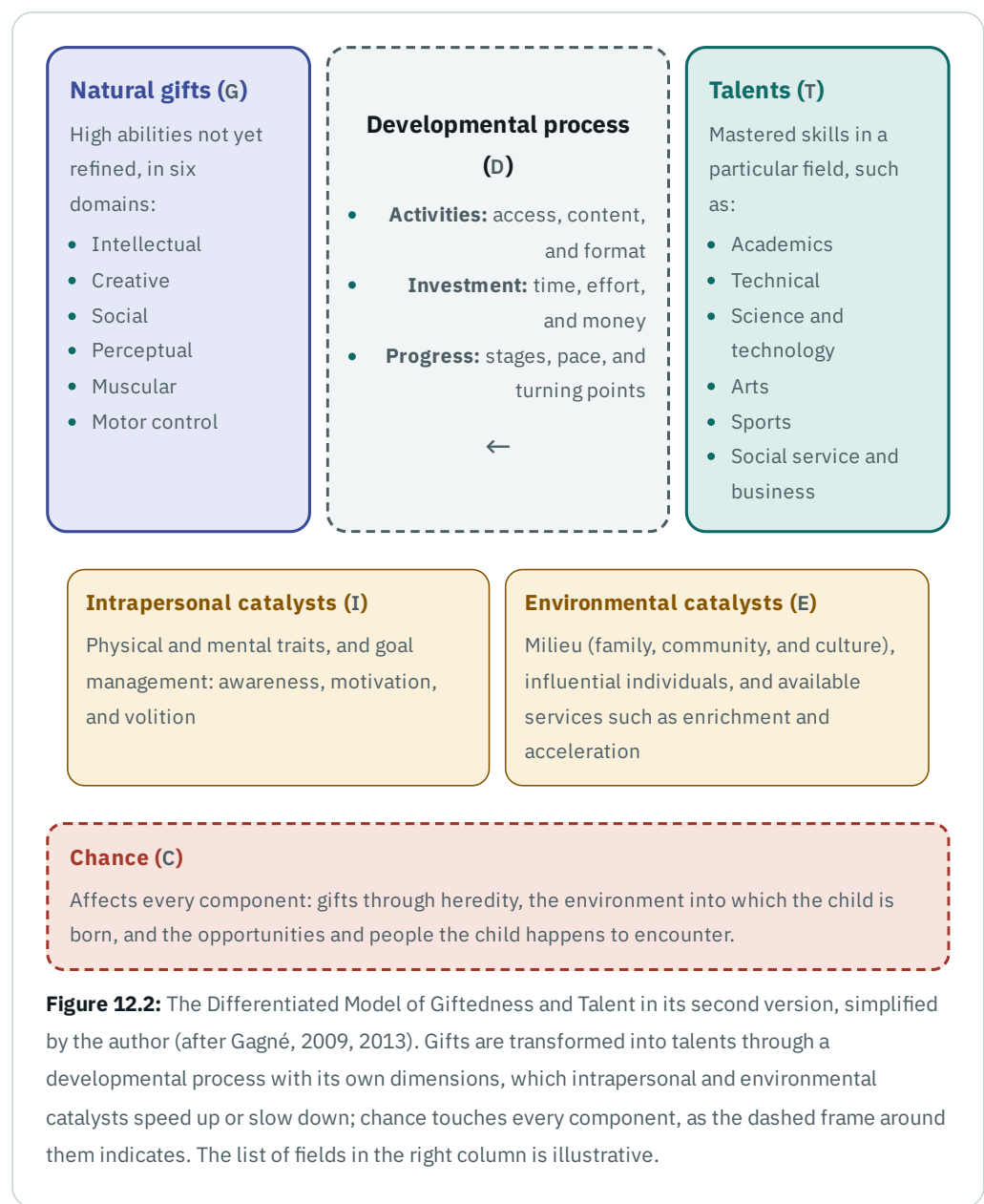
Figure 12.1: The Three-Ring Conception. Gifted behavior emerges where ability, commitment, and creativity intersect, surrounded by an environment that either provides or withholds opportunities for it to appear.

Renzulli distinguishes between two kinds of giftedness. The first is **schoolhouse giftedness** (**Schoolhouse giftedness**), proficiency in learning lessons and taking tests, which ability and achievement tests detect well. The second is **creative-productive giftedness** (**Creative-productive giftedness**), the capacity to produce original ideas and products for a real audience, which tests alone do not reveal (Renzulli, 1986). This distinction bears directly on identification. In the Schoolwide Enrichment Model associated with the theory, a **talent pool** (**Talent pool**) of roughly 15–20% of students is formed, instead of selecting a small number by a cutoff score, by combining ability and achievement scores with teacher ratings. Students who display gifted behavior during enrichment activities may then move to a higher level of service, even if they were not in the pool to begin with (Renzulli & Reis, 2014). This is what the phrase “above-average, though not necessarily exceptional, ability” means.

Gagné's model: from gifts to talents

In his Differentiated Model of Giftedness and Talent (**Differentiated Model of Giftedness and Talent, DMGT**), François Gagné distinguishes between two words often used as though they meant the same thing: **gifts (Gifts)**, high natural abilities not yet refined, and **talents (Talents)**, mastered skills in a particular field that have developed from those gifts through learning and practice. Gagné later revised his model in a second version (DMGT 2.0), changing three things that bear directly on identification (Gagné, 2009, 2013).

First, gifts now span six domains: intellectual, creative, social, perceptual, muscular, and motor control. Intellectual ability is thus one domain among six, and a student may be gifted in a domain that an intelligence test does not measure at all. **Second**, the **developmental process** became a separate component with three dimensions: the activities the student gains access to, along with their content and format; the investment he or she makes in time, effort, and money; and progress, with its stages, pace, and turning points. The process is surrounded by intrapersonal catalysts, such as physical and mental traits and goal management (awareness, motivation, and volition), and by environmental catalysts, such as the milieu, influential individuals, and available services including enrichment and acceleration. **Third, chance** reaches beyond environmental factors to affect every component: the gifts themselves through heredity, the family and place into which a child is born, and the opportunities and people the child happens to encounter.



The second version adds something missing from most definitions: a **numerical threshold**. For Gagné, the gifted are those who fall within the top 10% of their peers in a domain of gifts or a field of talent. Those above the threshold are then divided into five levels, each ten times rarer than the one before.

Table 12.1: Levels of giftedness in the Differentiated Model (Gagné, 2009) and their approximate equivalents on an intelligence scale with a mean of 100 and a standard deviation of 15.

Level	Rarity among peers	Approximate IQ equivalent
Mild	1 in 10 (top 10%)	About 120
Average	1 in 100	About 135
High	1 in 1,000	About 145
Exceptionally	1 in 10,000	About 155
Extremely	1 in 100,000	About 165

This threshold gives the reader a reference point for reading admission rules. An IQ of 115 corresponds roughly to the top 16%, 120 to the top 10% (Gagné’s threshold), 125 to the top 5%, and 130 to the top 2%. Terman’s cutoff falls at Gagné’s “moderately” gifted level. When a rule requires a particular score, it is implicitly choosing one of these levels, and it would do well to state that choice and its rationale (we will see in Section 12.7 that Saudi regulations have used more than one cutoff). Note that the numerical equivalents in the table are approximate and lose precision the higher we go, because norming samples include only very small numbers at the upper extreme.

The model has a further implication for identification: a student in an environment with limited opportunities may have high potential that has not yet turned into outstanding performance. If we look only for demonstrated performance, we will miss this student. Identification therefore needs instruments that reveal potential alongside achievement.

Giftedness as talent development

Recent theories increasingly view giftedness as a developmental process that extends across the lifespan. Its clearest expression is the **talent development megamodel** (Talent development megamodel) proposed by Rena Subotnik

and her colleagues (Subotnik et al., 2011) and elaborated in a later review (Worrell et al., 2019). The model rests on five ideas, each with implications for identification:

- **Giftedness is a trajectory within a specific domain.** The trajectory begins with potential, then moves to competency, then expertise, and finally eminence or professional creativity. Identification looks for something different at each stage: potential at the outset, then demonstrated achievement as the student advances.
- **Each domain has its own timing.** The starting point, peak, and end of the trajectory vary from one domain to another. Mathematics, music, and sports begin early, and outstanding students in them can be identified in elementary school. Domains such as psychology, law, and philosophy begin later, and aptitude for them emerges only after a student has studied them. Both the age of identification and the type of instrument, in other words, depend on the domain.
- **Ability is necessary and malleable.** General ability and domain-specific abilities are a prerequisite, yet they grow and are shaped by schooling and opportunity.
- **Psychosocial skills are decisive.** These include persistence, tolerance of criticism, stress management, confidence, and the ability to learn from mentors. Their importance grows as the student advances along the trajectory, until at the higher stages they are what separates people of comparable ability.
- **Opportunities must be offered, and they must be taken.** Schools and families must provide opportunities, and the student must seize them. The aim of the model is for the talented individual to reach, in adulthood, eminent achievement or a creative contribution to his or her field; what counts is what the person attains as an adult, more than a “gifted” label carried in childhood.

This is consistent with the definition of the National Association for Gifted Children (**National Association for Gifted Children, NAGC**), which describes gifted individuals as those who perform, or have the capability to perform, at higher levels compared with others of the same age, experience, and environment in one or more domains (NAGC, 2019a). Note two phrases in this definition: “have the capability to perform,” meaning potential alongside achievement, and “environment,” meaning that the comparison takes account of the opportunities available.

Pfeiffer’s tripartite model

Steven Pfeiffer proposed a model closer to assessment practice than to theory building, one that views giftedness through three lenses, each with its own tools (Pfeiffer, 2015, 2018). **The first lens, high intelligence**, is revealed by individual and group intelligence tests and suits programs that offer general academic challenge. **The second lens, outstanding accomplishment**, is revealed by achievement tests, products, and performance in the field, and suits subject acceleration or domain-specific programs. **The third lens, potential to excel**, concerns the student who has not yet had the opportunities; it is revealed by rating scales, observation over time, and dynamic assessment, and it suits a program that provides opportunities and then revisits the decision. The model’s value lies in reminding the team that a student may be gifted through one lens and invisible through the others, and that the third lens is the least stable of the three, so that its decision should be treated as provisional and subject to review.

Table 12.2 summarizes the four models from the standpoint of identification. Its “instruments” column applies the principle of aligning identification with services, which is taken up in the next section.

Table 12.2: Four models of giftedness from the standpoint of identification.

Model	What it looks for	Typical instruments	Threshold	Whom it may miss
Renzulli: the three rings	Gifted behavior that emerges when above-average ability, task commitment, and creativity converge	Ability and achievement tests, teacher rating scales, and products and projects observed during enrichment	A talent pool of about 15–20%, with flexible entry for those who display the behavior	Students given no situations in which to display it, and those of exceptional ability who need acceleration beyond enrichment
Gagné: the Differentiated Model	High gifts in six domains, and talents in specific fields	Ability tests for gifts; achievement tests and performance assessment for talents	The top 10% of peers, in five levels	Students near the threshold, whose outcome is decided by measurement error, and those whose gifts lie in a domain the available instruments do not measure

Model	What it looks for	Typical instruments	Threshold	Whom it may miss
Subotnik and colleagues: talent development	The student's position on the trajectory of a specific domain, and his or her psychosocial skills	Domain-specific instruments, above-level testing, and performance before experts in the field	Varies by stage and domain: potential first, then achievement	Students who lacked early opportunities in an early-starting domain, and able students with weak psychosocial skills
Pfeiffer: the three lenses	High intelligence, outstanding accomplishment, or potential to excel	Intelligence tests; achievement tests and products; rating scales, observation, and dynamic assessment	Set for each lens according to the program	Students who appear through no lens because the instruments do not suit their language or disability, and those judged through the third lens whose decision is never reviewed

 Common misconceptions

- **“A gifted student excels in every subject.”** Many gifted students are outstanding in one area and average in others, and some have a difficulty or disability alongside their giftedness; these are twice-exceptional learners (Chapter 13 discusses them in detail).
- **“A gifted student will find the way alone.”** Gifts do not turn into talents without opportunities and appropriate instruction, and a gifted student who finds no challenge may lose motivation.
- **“A gifted student is well behaved and well liked by teachers.”** Some gifted students challenge authority, ask awkward questions, and grow bored with repetition, so they come across as disruptive or indifferent.

12.2 Principles of identifying gifted learners

Most of the literature and professional standards agree on a set of principles for fair identification, among them those set out in the Pre-K–Grade 12 Gifted Programming Standards issued by the same association (NAGC, 2019b):

Table 12.3: Principles of fair identification of gifted learners and what they mean in practice.

Principle	What it means in practice
Aligning identification with services	Instruments are chosen according to what the program will provide. A mathematics acceleration program, for example, needs a measure of mathematical ability specifically.
Multiple sources	The decision rests on evidence from ability, achievement, observation, and performance taken together, rather than on a single score.

Principle	What it means in practice
Universal screening	All students at a given grade level are assessed, rather than waiting for nominations, because nomination misses many. A study in a large U.S. school district found that moving from nomination to universal screening markedly increased the representation of students from low-income and minority families in gifted programs (Card & Giuliano, 2016).
Fair instruments	Instruments that do not disadvantage a student because of language, background, or disability, including nonverbal tests within their limits (see Section 12.4) and local norms (Local norms) , that is, comparing the student with peers in the same school or district rather than with the national norming sample alone.
Ongoing identification	Doors remain open across grade levels, because giftedness develops and emerges at different times. A longitudinal study that followed elementary students found that a large proportion of those who exceeded a high cutoff in one year no longer did so two or three years later, while others crossed it later on (Lohman & Korb, 2006). A label assigned once and never reviewed errs in both directions.

How are local norms constructed?

The idea behind local norms is simple: we ask where the student stands among those who have had similar opportunities to learn, rather than among a national sample that includes far wealthier schools. Peters and colleagues found that computing norms at the school level increases the representation of underrepresented groups in gifted programs (Peters et al., 2019). Applying them, however, requires decisions made in advance and announced openly, which the following box summarizes.

 Six questions before using local norms

1. **Who is the reference group?** Students in the same grade who share the same opportunities to learn: the school, or a group of similarly situated schools within the education directorate, such as its rural schools. Schools with very different opportunities should not be pooled into one group, as this reintroduces the very problem local norms were meant to solve.
2. **What is the minimum size?** There is no agreed figure, but the upper ranks require large numbers. In a class of 20 students, the “top 5%” is a single student. A percentile rank is the percentage of the student’s peers in the reference group or norming sample who scored lower than the student; a percentile rank of 84 means the student outperformed 84% of them. In a class of this size, a percentile rank of 95 does not distinguish the first student from the second, and a change in one or two answers is enough to change the judgment. If the group numbers only in the tens, it is better to enlarge it or to combine years.
3. **School or directorate?** School norms come closer to the question “Who needs more than his or her class provides?,” while directorate norms are more statistically stable. A common compromise is to compute norms for a group of similarly situated schools, or for the school with several years combined.
4. **Should data be pooled across years?** Yes, when classes are small, provided that the instrument and administration conditions remain constant and that the report says so.
5. **What are their limits?** The label does not transfer between schools: a student identified in one school might not be identified in another. The absolute level of identified students also varies from school to school, so services must start from the student’s actual level as the evidence

shows it. Moreover, local norms reveal able students in less advantaged settings, but they do not address the cause of the gap.

6. How do they relate to excellence gaps? Excellence gaps

(**Excellence gaps**) are differences between groups in the proportions reaching advanced levels of performance (Plucker & Peters, 2016).

Local norms are a first step toward closing them, because they reveal who merits services; closing the gaps themselves requires services that make up for the opportunities that were missing.

12.3 Nomination and the opportunity to display

Teacher nomination remains the most widespread route into identification. It has its uses, since the teacher sees the student over a long period and in many situations. But it has well-known limits: teachers tend to nominate high-scoring, well-behaved students who fit the image of the “good student,” and to overlook those who are quiet, those who differ linguistically or culturally, and those whose ability is masked by a difficulty. Nomination may even be influenced by the teacher as well as by the student: a large U.S. study found that the likelihood of a student being identified as gifted varied with the background of the student’s teacher, even when students’ test scores were equal (Grissom & Redding, 2016). In Saudi Arabia, Alfaiz examined the accuracy of parent and teacher nomination in identifying gifted students (Alfaiz, 2026), a question on which local practitioners will need to follow the evidence.

The opportunity to display

In his research on the visibility of gifted students for nomination, the author of this book proposes a framework he calls the **opportunity to display** (**Opportunity to display**), which locates a reason for the shortcomings of nomination deeper than teacher bias: **a teacher cannot see what the**

classroom gives the student no opportunity to show. A classroom built on memorization and short answers does not reveal a student's ability to solve an open-ended problem, pose an original question, or build a project. Many nomination checklists ask about behaviors, such as curiosity, unusual questions, and original thinking, that appear only in activities that allow for them. When such activities are absent, what might be called the teacher's **inference load** increases: the teacher is forced to infer giftedness from indirect signs such as grades and good conduct, and so falls back on nominating high achievers.

The framework is close to well-established ideas in the literature; what it adds is to make opportunity a **first step** in the identification pathway, where it had been a circumstance mentioned when interpreting results. An instrument such as the Teacher's Observation of Potential in Students links observation to providing rich learning activities over several weeks (Coleman et al., 2010). Local norms compare the student with those who have had similar opportunities (Peters et al., 2019). And Pfeiffer's "potential to excel" lens concerns students who have not yet had the opportunities (Pfeiffer, 2015). What is new here is the question that comes before all of them: did the classroom offer anything to observe in the first place?

What this means in practice

Before we ask teachers to nominate, we need to give students opportunities to show what they can do: open-ended activities, problems without a single solution, and independent projects, even if only for a few weeks. Observation and nomination come afterward. In Jana's scene at the start of the chapter, no one noticed her ability until the open-ended science project gave her an opportunity to display it.

 For the teacher: indicators worth noticing

These are situations to watch for and record; when you see them, note the date and context, without waiting for grades:

- Grasps a new idea after a brief presentation and grows restless when it is repeated.
- Asks questions that go beyond the lesson, or connects two subjects no one else has connected.
- Reaches a solution by a route other than the one taught, and can explain that route.
- Holds a deep, sustained interest in a topic outside the curriculum and knows more about it than would be expected at his or her age.
- Uses vocabulary or reasoning beyond his or her years, or understands complex humor before peers do.
- Produces outside school what does not show up in it: a project, a program, drawings, or writing.
- Shows clear improvement in performance and behavior when given a harder task.

If you notice these indicators in a student whose grades are average or whose behavior is disruptive, that is all the more reason to record them.

Nomination and observation tools

Table 12.4: Common nomination and observation tools in identifying gifted learners.

Instrument	The idea	Distinguishing features
Teacher’s Observation of Potential in Students (TOPS)	The teacher observes students over several weeks during rich learning activities and records behaviors in nine domains, such as learning quickly, curiosity and creativity, advanced reasoning, spatial ability, and leadership (Coleman et al., 2010)	Observation is tied to providing activities that offer an opportunity to display; designed for young students and for students from less advantaged backgrounds
Traits, Aptitudes, and Behaviors (TABs)	Ten core attributes of giftedness observed by the teacher: motivation, interests, communication skills, problem solving, memory, inquiry, insight, reasoning, imagination and creativity, and humor (Frasier et al., 1995)	Describes how each attribute may manifest differently in students from different cultures
Gifted Rating Scales (GRS)	A standardized teacher rating scale measuring intellectual ability, academic ability, creativity, artistic talent, leadership, and motivation (Pfeiffer & Jarosewich, 2003)	Has norms and T-scores with a mean of 50 and a standard deviation of 10, so the student is compared with peers (see its profile in Section 12.6)
Scales for Rating the Behavioral Characteristics of Superior Students (SRBCSS)	A set of teacher rating scales across multiple areas, such as learning, creativity, motivation, leadership, and the arts (Renzulli et al., 2010)	Flexible; the program can select the scales that suit it. Lacks national norms, so its scores are read against local norms that the program builds

At the time of writing, we found no published Saudi norming study of any of these four tools to which we could refer readers. Anyone using an Arabic version of one of them should verify its source and the evidence its developers provide for its validity and reliability in the local setting. Whatever the instrument, teacher ratings remain one source among several, to be combined with measures of ability, achievement, and performance.

12.4 Ability measures and their ceilings

Group and individual tests

In universal screening, group ability tests are typically administered to an entire class, on paper or online, such as the Cognitive Abilities Test (**CogAT**), which measures verbal, quantitative, and nonverbal reasoning, and the Naglieri Nonverbal Ability Test, Third Edition (**NNAT3**), which relies on figural matrices and is therefore little affected by language. Students who exceed the **screening cutoff**, the score above which a student is referred for more in-depth assessment, are then evaluated with an individual intelligence test such as the Wechsler Intelligence Scale for Children or the Stanford–Binet (Chapter 3 presents these instruments in detail, and the Cognitive Abilities Test profile appears in Section 12.6).

Limits of nonverbal tests

Nonverbal tests are often presented as the answer to fairness for linguistically diverse students and those from less advantaged settings. There is some truth in this, but the literature points to three limits (Lohman, 2005). **First**, nonverbal reasoning predicts academic achievement less well than verbal and quantitative reasoning do, and academic programs need students who will succeed in their subject matter. **Second**, such tests sometimes narrow group differences, though their effect on this is weaker than commonly assumed. **Third**, relying on them alone may exclude students who genuinely excel in

verbal or quantitative reasoning, since their performance on matrices and figures is not necessarily exceptional. The alternative this literature proposes is to keep the nonverbal test within a battery that includes verbal and quantitative reasoning, and then to compare the student with those who have had similar opportunities, that is, against local norms.

The General Ability Index and the Cognitive Proficiency Index

On the Wechsler Intelligence Scale for Children, Fifth Edition (**WISC-V**), the **Full Scale IQ (Full Scale IQ, FSIQ)** is influenced by the Working Memory and Processing Speed indexes (Chapter 3 defines these indexes). Many gifted students, particularly twice-exceptional learners, perform noticeably lower on these two indexes than on reasoning and comprehension.

Two composite scores are therefore derived from the scale to separate the two sides. The first is the **General Ability Index (General Ability Index, GAI)**, built from five subtests in verbal comprehension, visual-spatial processing, and fluid reasoning: Similarities, Vocabulary, Block Design, Matrix Reasoning, and Figure Weights. The second is the **Cognitive Proficiency Index (Cognitive Proficiency Index, CPI)**, built from four subtests in working memory and processing speed: Digit Span, Picture Span, Coding, and Symbol Search. The former describes what the student can reason through; the latter describes how efficiently he or she processes information quickly and accurately (Kaufman et al., 2016).

The difference between the two indexes is read like any difference between two scores: Is it statistically significant, that is, too large to be attributed to measurement error? And how rare is it in the norming sample? (See Chapter 2.) A student with a General Ability Index of 132 and a Cognitive Proficiency Index of 104 shows a 28-point gap. Such a difference merits interpretation if it proves to be both significant and rare, as established by statistical computation rather than by the visual impression of a jagged profile. The

National Association for Gifted Children recommends using the General Ability Index in identifying gifted students and not requiring the Full Scale IQ when a student's profile is uneven (NAGC, 2018).

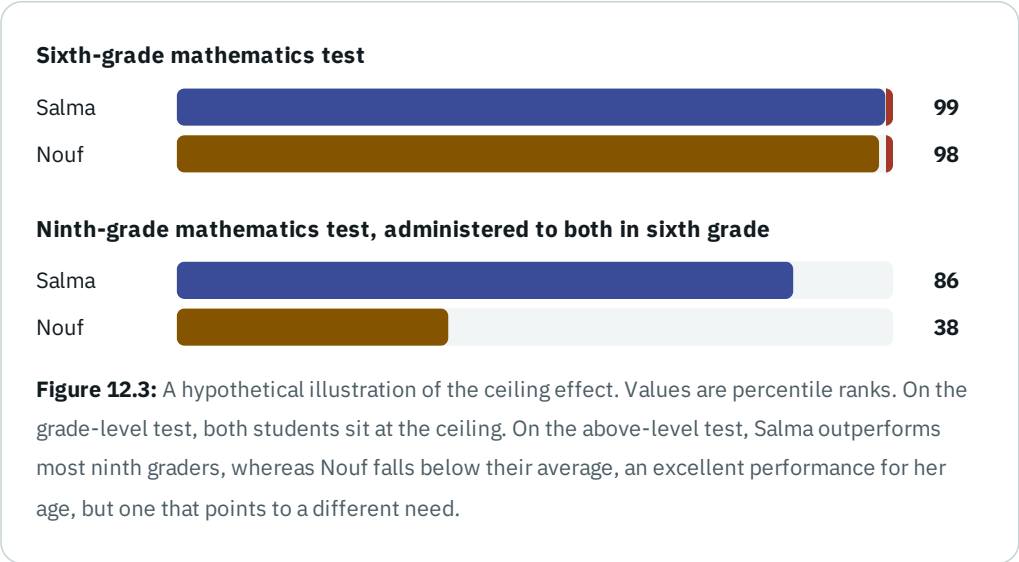
When a student reaches the ceiling of several subtests, answering the last items or most of them, the Full Scale IQ and the General Ability Index can no longer capture the student's ability, because the score cannot go beyond the highest value in the norm tables. For this reason, the publishers of some scales, including the Wechsler, have issued **extended norms (Extended norms)** that extend scores beyond their usual limit for students who reach the ceiling (see Chapter 2). These help distinguish among the upper levels of giftedness, but they rest on very small numbers at the top of the distribution, so they should be read with caution, and the publisher's conditions for their use should be consulted.

The ceiling effect and above-level testing

In assessing intellectual disability, a problem known as the **floor effect (Floor effect)** arises: the test lacks sufficiently easy items, so it cannot distinguish among very low levels of performance. Giftedness presents the opposite problem: the **ceiling effect (Ceiling effect)**. An achievement test designed for a given grade lacks sufficiently difficult items, so a gifted student answers almost everything correctly and obtains a percentile rank of 99, just like a classmate who has merely mastered the grade-level curriculum. We then have no way of knowing where either student's ability actually lies.

The solution developed in talent search programs (**Talent Search**) is **above-level testing (Above-level testing)**: an outstanding student takes a test designed for students several years older. Students who were tied at the ceiling spread out, revealing those who need genuine acceleration. A long-term investigation, the Study of Mathematically Precocious Youth (**Study of Mathematically Precocious Youth, SMPY**), followed thousands of students

identified in this way before the age of 13 and found that differences among them on above-level tests predicted large differences in their accomplishments decades later (Lubinski & Benbow, 2006).



12.5 Creativity, achievement, and performance

Measuring creative thinking

Among the best-known instruments for measuring creative thinking are the Torrance Tests of Creative Thinking (**Torrance Tests of Creative Thinking, TTCT**), whose profile appears in Section 12.6. They come in a verbal form and a figural form. In the figural form, the student is given incomplete or repeated shapes and asked to complete them as meaningful drawings and to give each drawing a title. The responses are then scored on several dimensions, among them **fluency (Fluency)**, the number of ideas; **flexibility (Flexibility)**, the variety of their categories; **originality (Originality)**, their rarity relative to other people’s responses; and **elaboration (Elaboration)**, how much the student adds to the basic idea (Kim, 2006).

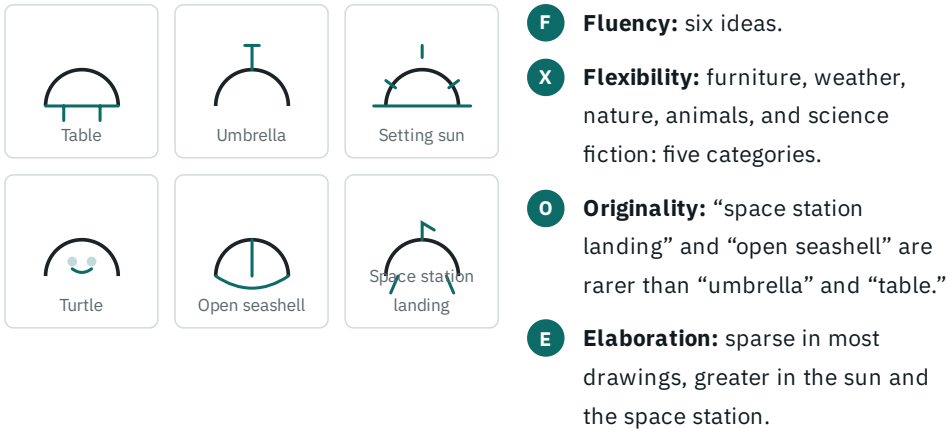


Figure 12.4: An illustrative activity designed by the author in the style of repeated-figures tasks; it is not taken from any published test. A hypothetical student completed a semicircle in six ways, and alongside the drawings is a reading of the responses on the four dimensions.

Creativity tests have important limitations. They measure **divergent thinking** (**Divergent thinking**), the production of many and varied ideas, which is only one facet of creativity. Performance on them is sensitive to the instructions and to the student’s mood on the day of testing, and their reliability is lower than that of intelligence tests. Their predictive validity, that is, their capacity to predict creative achievement in adulthood, remains contested: some longitudinal studies have found a relationship between their scores and creative achievement decades later, while critics consider the relationship modest and inconsistent across studies (Kim, 2006). For this reason they serve as a supplementary source, alongside assessment of the student’s actual creative products over time.

For evaluating the product itself, a well-known method is the **Consensual Assessment Technique** (**Consensual Assessment Technique**), proposed by Teresa Amabile (Amabile, 1982). Its premise is that the creativity of a product is defined by the judgment of those who know the field: the product, whether a story, a drawing, or a design, is presented to several judges with expertise in the field, each of whom rates its creativity independently of the others, and

their agreement is then examined. If they agree to an acceptable degree, the mean of their ratings is taken as a measure of the product's creativity. This method comes closest to what "performance before a panel" means in the arts, writing, and design, provided that the judges are experts in the field and that they rate independently before any discussion.

Achievement and performance

Very high achievement in a domain signals a talent already realized in it. It is measured with achievement tests, preferably supplemented by above-level testing to overcome the ceiling effect, as discussed earlier. Performance, for its part, is measured through authentic performance tasks, that is, tasks resembling what specialists in the field actually do, and through portfolios that collect samples of the student's work over time. In some domains, such as the arts, sports, and leadership, performance before an expert panel is the primary source of evidence, because paper-and-pencil tests do not capture it.

12.6

Instrument profiles

The following profiles present four instruments that represent the main types of evidence used in identifying gifted learners: a group ability test for screening, a teacher rating scale, a test of creative thinking, and the above-level testing procedure. The profile of the Mawhiba test appears in Section 12.7, together with the regulatory context in which it is used. None of the profiles reproduces items from any published test.

CogAT Cognitive Abilities Test, Form 7

Group ability test

The idea

Students learn at school through three symbol systems: words, numbers, and shapes and pictures. This test was therefore designed to measure reasoning within each system separately rather than to yield a single IQ. The aim is to identify the student’s ability profile so that suitable instruction or programming can be chosen (Lohman, 2011).

What it looks like

Three batteries, each with three subtests. **Verbal battery:** verbal or picture analogies, sentence completion, and classification. **Quantitative battery:** number analogies, number puzzles, and number series. **Nonverbal battery:** figure matrices, paper folding, and figure classification. At the early levels, from kindergarten to second grade, items are presented as pictures and directions are read aloud, so the student does not need to read. The test is administered on paper or online to a whole class.

A scene from administration

At a private international school that teaches in English, the administration decides to conduct universal screening of its third graders. Teachers administer the three batteries over two consecutive mornings. The profile of one student, whose first language is Arabic, reads as follows: Quantitative 131, Nonverbal 128, Verbal 112. The school summarizes the profile with a code such as “9B (V-)”: the number is the median stanine, the letter describes the extent of variation across the batteries, and the parenthesis identifies the relatively low battery. The school psychologist asks: is the lower verbal score a weakness in verbal reasoning, or an effect of learning in a second language? She decides to compare him with peers who are also learning in a second language before reaching any judgment.

Table 12.5: Profile of the Cognitive Abilities Test.

Purpose	Measurement of verbal, quantitative, and nonverbal reasoning for universal screening and instructional planning
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Ages	Kindergarten through Grade 12, in grade-based levels
Edition and year	Form 7, 2011
Publisher	Riverside
Qualification level	Administered in class by the teacher under standardized directions; results interpreted by a trained professional
Time	The manual specifies the time for each battery by level; the three batteries are administered in one or more sessions
Score types	Standard age score with a mean of 100 and a standard deviation of 16 (not 15); percentile ranks and stanines based on age and grade norms; a composite score; and an ability profile summarizing level and pattern
Cutoff scores	Set by each program according to its service
Reliability	High for the composite according to the technical manual, and lower for individual batteries
Classification accuracy	Not applicable in the diagnostic sense. What matters is its predictive validity for achievement, which is stronger for the verbal and quantitative batteries than for the nonverbal battery
Year of norm collection	U.S. norms; consult the publisher for the norm year used in scoring
Arabic version	At the time of writing we know of no published standardized Arabic version

How are the results interpreted?

Interpretation begins with pattern before level: are the three batteries close together or divergent? Scores are then chosen to fit the service. A mathematics acceleration program looks first at the quantitative and nonverbal scores, and

a language program looks at the verbal score. Note that the standard age score has a standard deviation of 16, so a score of 130 on it is not equivalent to 130 on a Wechsler scale.

Its limits

Its items and norms are in American English, so it is unsuitable for students learning in Arabic unless adapted and normed. A group test is also less precise for the individual than an individual test; it is a screening tool that paves the way for more precise assessment. Relying on the nonverbal battery alone reintroduces the limitations of nonverbal tests discussed in Section 12.4. Among the best-known nonverbal alternatives is the Naglieri Nonverbal Ability Test, Third Edition (**NNAT3**), a 48-item matrices test completed in about 30 minutes that yields an index with a mean of 100 and a standard deviation of 15 (Naglieri, 2016). We likewise know of no published, normed Arabic version of it.

GRS Gifted Rating Scales

Rating scale

The idea

A teacher sees a student in many situations, yet one teacher's impression is not easily compared with another's. This scale was designed to convert teacher observation into a standard score that compares the student with same-age peers across six domains of giftedness that extend beyond intellectual ability (Pfeiffer & Jarosewich, 2003).

What it looks like

The school form contains 72 items distributed across six scales of 12 items each: intellectual ability, academic ability, creativity, artistic talent, leadership, and motivation. The teacher rates each item on a nine-point scale

divided into three ranges: below average (1–3), average (4–6), and above average (7–9), relative to students of the same age. A second form covers preschool and kindergarten.

A scene from administration

A fifth-grade teacher completes the school form for a student she has taught for two semesters. She pauses at an item on leadership and recalls that the girl has never led a group, because the teacher has always assigned the roles herself. Rather than choosing a number from the middle range, she notes in the margin that she has had no opportunity to observe this behavior.

Table 12.6: Profile of the Gifted Rating Scales.

Purpose	Teacher rating of gifted behaviors in six domains, as one source within a multi-source assessment
Ages	School Form for Grades 1–8 (ages 6–13); Preschool Form from 4 years to 6 years 11 months
Edition and year	First edition, 2003
Publisher	Pearson
Qualification level	Completed by a teacher who has known the student long enough; interpreted by a professional in accordance with the publisher's requirements
Time	A few minutes per student
Score types	T-score for each scale, with a mean of 50 and a standard deviation of 10
Cutoff scores	The manual classifies T-scores into categories of likelihood of giftedness; consult it for the cut points
Reliability	The manual reports very high internal consistency for all six scales

Classification accuracy	The manual reports good discrimination between gifted and non-gifted samples; this requires independent studies in the local context
Year of norm collection	A U.S. sample collected shortly before publication, so the norms are more than twenty years old
Arabic version	At the time of writing we know of no published standardized Arabic version

How are the results interpreted?

The six scales are read as an integrated profile before any total. A high score in artistic talent alone points toward a performance assessment in art rather than a general academic program. The score is also compared with what another source says: if intellectual ability is high on the rating but low on the test, the question becomes what the teacher saw that the test did not, or vice versa.

Its limits

It reflects the teacher's impression and what the classroom allowed the teacher to see, and so it carries the limitations of nomination discussed in Section 12.3. A student's scores on the six scales may also cluster closely, which suggests a global impression more than discrimination among domains, a phenomenon known as the halo effect. It does not cover the middle and secondary school years. The Scales for Rating the Behavioral Characteristics of Superior Students, by contrast, are flexible and cover more domains, but they lack national norms and therefore require local norms built by the program (Renzulli et al., 2010).

TTCT Torrance Tests of Creative Thinking

Performance test

The idea

If creativity is one component of giftedness, we need a task that shows how a student generates ideas when a question has no single answer. That is what this test was designed to do: open-ended tasks in which ideas, their variety, and their rarity are counted, regardless of whether they are correct (Kim, 2006).

What it looks like

The test has two forms, each with two equivalent versions, A and B. **The figural form** consists of three activities of ten minutes each: picture construction from a given shape, completion of incomplete figures, and transformation of repeated shapes into different drawings, with a title for each drawing. **The verbal form** comprises written activities such as asking questions about a picture, guessing causes and consequences, improving a product, and proposing unusual uses for a familiar object. Under the current scoring method for the figural form, fluency, originality, and elaboration are scored, along with abstractness of titles and resistance to premature closure, that is, keeping a figure open long enough before closing it with a familiar solution. Flexibility is no longer scored on the figural form, although it remains a useful concept for reading responses, as in Figure 12.4.

A scene from administration

The specialist administers the figural form to a small group of students. He reads the directions exactly as they appear in the manual, because a single extra word of encouragement can raise the number of ideas. He notices one student who finished the first activity in four minutes and then sat staring at the ceiling. He records this in his notes: a low fluency score may reflect that day’s motivation more than the student’s ability.

Table 12.7: Profile of the Torrance Tests of Creative Thinking.

Purpose	Measurement of divergent thinking, as a supplementary source in identifying gifted learners
Ages	Kindergarten to adulthood

Edition and year	First published in the 1960s; the norms manual has been reissued several times, and the publisher should be consulted for the latest
Publisher	Scholastic Testing Service
Qualification level	Administered by a teacher or specialist after training; scored by a trained scorer or by the publisher's scoring service
Time	Figural form about 30 minutes; verbal form longer
Score types	Standard scores and percentile ranks for each dimension, and an overall creativity index
Cutoff scores	Set by the program, if it uses the test
Reliability	Lower than that of intelligence tests; varies across dimensions and is affected by scorer training
Classification accuracy	Not applicable in the diagnostic sense. Its predictive validity for creative achievement in adulthood is contested (Kim, 2006)
Year of norm collection	U.S. norms, with the norm year varying by edition of the manual
Arabic version	Figural Form B was normed in Saudi Arabia with support from King Abdulaziz City for Science and Technology in 1416 AH, through a pilot study of 598 male and female students followed by norms based on 1,227 male and female students aged 9 to 16, with scores scaled to a mean of 100 and a standard deviation of 15, according to a published account by one of its developers (Al-Nafi, 1428 AH [Arabic]). We have not seen the original norming report, and the norms are nearly thirty years old

How are the results interpreted?

The profile of dimensions is read before the overall index. High fluency with average originality means many familiar ideas, whereas high originality with average fluency may signal a student who thinks carefully before drawing. The result is then compared with the student's actual products, preferably evaluated with the Consensual Assessment Technique described in Section 12.5.

Its limits

It measures divergent thinking, which is only one facet of creativity, and it is sensitive to the instructions and to the student's mood on the day of testing. Some items in the verbal form depend on cultural experiences and therefore require adaptation. The available Saudi norms are dated, and they were built on originality in its statistical sense, that is, the rarity of an idea within the sample. Such rarity shifts over time and with changes in what children are exposed to: an idea that was rare thirty years ago may be commonplace today.

Above-level Above-level testing

Assessment procedure

The idea

We saw in Section 12.4 that a grade-level test stops at its ceiling, where a student who has mastered the grade's curriculum becomes indistinguishable from one who is years ahead. The idea is to raise the ceiling by giving the student a test designed for older students. The procedure was developed by talent search programs, the best known of which is the Study of Mathematically Precocious Youth, which administered a college admission test to twelve-year-olds (Lubinski & Benbow, 2006).

What it looks like

Two steps. **First**, a grade-level test; students who score at the 95th percentile or higher advance to the second step, the usual requirement in talent search programs. **Second**, a standardized test designed for a grade two to four years higher, in the subject in which acceleration is being considered. The result is then interpreted against the norms of the higher grade and by comparing the student with same-age peers who took the same test.

A scene from administration

After Salma’s result came in (Figure 12.3), the counselor did not settle for calling her “very advanced.” He asked for an analysis of her answers on the ninth-grade test to find out what she did not yet know. A learning plan was then drawn up covering only those topics, followed by an end-of-course test in an advanced course to confirm her mastery before she moved on to a higher course. This is a well-known model in talent search programs called

Diagnostic Testing → Prescriptive Instruction

(Diagnostic Testing → Prescriptive Instruction, DT→PI), which rests on the principle that students should not be taught what they have already shown they know (Assouline et al., 2015).

Table 12.8: Profile of above-level testing.

Purpose	Differentiating among students who sit at the ceiling of a grade-level test, and determining how much acceleration they need in a particular subject
Ages	Typically Grades 3 through 9 in talent search programs
Edition and year	A standardized test for a higher grade, chosen by the program
Publisher	Depends on the test used
Qualification level	Administered by whoever is qualified to administer the original test under its conditions; interpreted by a professional familiar with the norms of the higher grade

Time	The duration of the test used
Score types	Percentile ranks based on the norms of the higher grade and on the norms of same-age program participants
Cutoff scores	The 95th percentile or higher on the grade-level test is a common entry requirement; the program then sets the cut points for each service
Reliability	The reliability of the test used, with the advantage that its difficulty suits high performers and thus discriminates among them better
Classification accuracy	Differences on above-level tests predicted large differences in accomplishment decades later (Lubinski & Benbow, 2006)
Year of norm collection	The higher-grade norms of the test used
Arabic version	At the time of writing, we know of no published Arabic above-level testing program with publicly available norms. The idea can be applied using Arabic achievement tests for higher grades, provided this is stated explicitly and the result is interpreted against the norms of the grade for which the test was designed

How are the results interpreted?

The percentile rank here compares the student with older students, so a rank of 50 for a sixth grader on a ninth-grade test is an excellent performance for his or her age. The question the result answers is: “How far ahead of grade level is the student in this subject? And what does the student know of it, and what not yet?”

Its limits

It measures a specific subject and so cannot serve as evidence of general giftedness. It may also be affected by content the student has not yet been taught, so low performance should be read as lack of exposure before it is taken as lack of ability. It must also lead to an actual educational decision; otherwise it becomes a number that changes nothing. The literature on acceleration summarizes extensive evidence of its academic benefit when it is grounded in assessment of this kind (Assouline et al., 2015).

12.7

Identification in the Saudi context and the decision pathway

The **National Program for Gifted Identification** began in 2011 as an annual project run in partnership by the King Abdulaziz and His Companions Foundation for Giftedness and Creativity (Mawhiba), the Ministry of Education, and the National Center for Assessment, initially targeting students in the third and sixth grades of elementary school and the third grade of intermediate school (Ministry of Education, 1437 AH [Arabic]). Today it targets students from the third grade of elementary school through the first grade of secondary school, that is, grades 3 to 10, with its main instrument, the **Mawhiba Multiple Cognitive Abilities Test** (King Abdulaziz and His Companions Foundation for Giftedness and Creativity, n.d. [Arabic]). Alongside it are the Ministry of Education's school-based gifted programs, which have their own criteria. A recent review offers a comprehensive picture of gifted education and its programs in the Kingdom (Alfaiz et al., 2022). The box below sets out what the published documents stipulate on identification specifically.

 In the Saudi context: identification criteria in the published documents

Table 12.9: Criteria for identifying gifted learners in the published Saudi documents we were able to review.

Document	What it stipulates	Reading it with the chapter's tools
Regulations for Special Education Institutes and Programs (Ministry of Education [Al-Ma'arif], 1422 AH [Arabic], Article 8)	A student is admitted if any one of the following conditions is met: high academic achievement over two semesters (97%, by our reading of the printed copy) together with an IQ of at least 115 on a standardized test; an IQ of at least 125 on the Wechsler scale or 127 on the Stanford–Binet; outstanding skills and abilities attested by the student's teachers and peers; or creative or innovative thinking	An “or” rule: one criterion suffices. The cutoff of 115 corresponds to roughly the top 16% and requires achievement alongside it; the cutoff of 125 corresponds to roughly the top 5%. The difference between 125 and 127 is explained by the standard deviation of 16 in older editions of the Stanford–Binet. The rule specifies neither an instrument nor a score for creativity
Special Education Organizational Guide (Ministry of Education, 1436 AH [Arabic])	Does not list the gifted among its categories	Regulation of giftedness moved to the gifted program guides, so it is no longer housed in a single document with disabilities

Document	What it stipulates	Reading it with the chapter's tools
Guide to Gifted Classes (Ministry of Education, n.d. [Arabic])	Students are nominated from among those classified in the national gifted identification project. If places remain unfilled, they are completed using the Ministry's four criteria: a cognitive abilities measure, personal traits, academic achievement, and creative output, provided the student meets at least two criteria, one of which must be the cognitive abilities measure with a score of no less than 120	A compound rule: at least two criteria, with ability as a necessary condition. The cutoff of 120 corresponds to roughly the top 10%, approximately Gagné's threshold
Organizational and Procedural Guide for the School Program for Gifted Girls (Ministry of Education, 1437 AH [Arabic])	Admission for the top 5% of the national project's results, from fourth grade of elementary school to second grade of secondary school	The percentage is computed only among those who sat the test, since registration is optional

Document	What it stipulates	Reading it with the chapter's tools
National Program for Gifted Identification (King Abdulaziz and His Companions Foundation for Giftedness and Creativity, n.d. [Arabic])	The Mawhiba Multiple Cognitive Abilities Test, with optional registration; results are announced through the Mawhiba website	We found neither the score scale nor the cutoff score in any official source. A peer-reviewed study reported an operational cutoff of 1540 (Almulhim, Aljughaiman, & Alfaiz, 2026)

Three observations arise from these documents. **First**, the older regulations treated the criteria as alternatives, any one of which suffices, whereas the gifted classes guide made them cumulative, requiring two criteria, one of which is ability. An “or” rule widens the door and increases errors of the “identifying a student who is not gifted” kind, while an “and” rule narrows it and increases errors of the “missing a gifted student” kind (Chapter 6 presents these combination rules). **Second**, the documents use three IQ cutoffs, 115, 120, and 125, without stating which level of giftedness each is meant to capture, and without any provision directing that the standard error of measurement or the confidence interval be taken into account. A student with a score of 118 and a confidence interval of 112–123 does not differ statistically from a student who scores 120. **Third**, in the documents we reviewed, we found no provision on adapting identification instruments for students with disabilities, nor any provision permitting or prohibiting simultaneous enrollment in a gifted program and special education services, even though a recent Saudi study estimated that about 5.9% of a sample of 6,875 students in four private schools in Riyadh may be twice-exceptional (Almulhim, Aljughaiman, Alnaim, et al., 2026).

A question for reflection: A student scored 126 on the Wechsler scale but did not sit the Mawhiba test because her family did not know when registration opened. Under which of the three documents would she be admitted, and under which would she not? And what does that say about the effect of the national instrument on access?

MMCAT Mawhiba Multiple Cognitive Abilities Test

National ability test

The idea

A single national instrument taken by applicants from every region, measuring reasoning in more than one domain and opening the way to gifted programs at Mawhiba and the Ministry of Education. It was built in Arabic and for the Saudi context from the outset, so it carries none of the problems of translation and adaptation.

What it looks like

The test measures four domains: mental flexibility, linguistic reasoning and reading comprehension, mathematical and spatial reasoning, and scientific and mechanical reasoning (King Abdulaziz and His Companions Foundation for Giftedness and Creativity, n.d. [Arabic]; Almulhim, Aljughaiman, & Alfaiz, 2026). It has three levels: the first for grades 3 to 5 of elementary school, the second for grade 6 of elementary school and the first and second grades of intermediate school, and the third for the third grade of intermediate school and the first grade of secondary school. A student may take it once at each level.

A scene from administration

During the announced registration period, the parent opens an account on the National Center for Assessment website, confirms the child’s details, selects the test, the venue, and the date, accepts the terms, and pays the parental contribution. After the test, the parent waits for the results to be announced, then looks them up on the Mawhiba website and reviews the programs for which the child qualifies.

Table 12.10: Profile of the Mawhiba Multiple Cognitive Abilities Test, based on what we found published at the time of writing.

Purpose	Identifying students with high cognitive abilities on a national scale and nominating them for gifted programs
Ages	Grade 3 of elementary school through Grade 10 (first year of secondary school), at three levels
Edition and year	Used in the national program since its first cycle in 2011. We found no information on its current edition
Administering body	The Education and Training Evaluation Commission, through its National Center for Assessment, in partnership with Mawhiba and the Ministry of Education
Registration	Optional, through the National Center for Assessment website, with a “parental contribution” fee of SAR 200, waived for subsidized students. The most recently announced registration period ran from 1 October to 23 December 2025
Score reporting	Through the national program results inquiry service on the Mawhiba website
Score types and cut points	We found neither the score scale nor the cutoff score in any official source. A peer-reviewed study of 5,146 students in Al-Ahsa reported an operational cutoff of 1540 (Almulhim, Aljughaiman, & Alfaiz, 2026)

Consequences	Mawhiba classes, the Mawhiba Advanced Program in Science and Mathematics, research and enrichment programs, and nomination for university scholarships; it is also the starting point for nomination to gifted classes and Ministry programs
Reliability and validity	We found no technical manual or published report presenting reliability coefficients or validity evidence. The study cited above analyzed the test's scores using latent profile analysis and found distinct cognitive profiles beneath the total score among high-ability students (Almulhim, Aljughaiman, & Alfaiz, 2026)
Accommodations for students with disabilities	We found no published statement of the accommodations available to students with disabilities
Year of norm collection	We did not find these published
Arabic version	Originally developed in Arabic, for the Saudi context

How are the results interpreted?

Because the official scale is unpublished, the practitioner reads the result from two angles: Did the student exceed the threshold that qualifies him or her for a particular program? And where does the student rank among applicants from the same grade? Note that the comparison here is only with those who sat the test. If the four domain scores are available, the pattern among them matters more for service decisions than the total score alone.

Its limits

This is a reading of the test in light of the principles in Section 12.2, and fairness requires stating what it achieves before what it does not. It **achieves** a uniform instrument across regions, measurement of more than one domain of reasoning, an authentically Arabic construction, a repeated opportunity at each level, and fee waivers for subsidized students. In its published form,

however, it **does not achieve** four things. **First**, optional registration is not universal screening: students whose families do not know about the test, or do not consider it important, never reach it, which is precisely what studies of universal screening have warned against (Card & Giuliano, 2016). **Second**, admission to programs rests on a single cutoff score, whereas the principles call for multiple sources. **Third**, the norms are national, so a student from a small village is compared with a student from a large city. **Fourth**, its technical evidence and its accommodations for students with disabilities are unpublished, so practitioners cannot judge the precision of a score near the cutoff. The Ministry’s programs fill part of these gaps: the gifted classes guide allows unfilled places to be completed using multiple school-based criteria, among them personal traits and creative output. But this completion depends on places remaining unfilled, and the national test remains the main gateway.

Table 12.11 summarizes what we know about normed Arabic versions of the instruments discussed in this chapter:

Table 12.11: Arabic instruments available for identifying gifted learners, based on what we found published at the time of writing.

Instrument	What we know about its Arabic version	What is missing
Mawhiba Multiple Cognitive Abilities Test	Originally Arabic; in national use since 2011	A published technical manual, the score scale, the norm year, and accommodations
Wechsler Intelligence Scale for Children	The revised edition for ages 6–16 was normed as part of the Gifted Identification and Care Program project (Al-Nafi et al., 2000 [Arabic], as cited in Ejbara, 2024)	A published Saudi norming of the fourth and fifth editions, and hence of the General Ability Index and the Cognitive Proficiency Index

Instrument	What we know about its Arabic version	What is missing
—	Saudi norms for Figural Form B, based on 1,227 male and female students aged 9 to 16 (Al-Nafi, 1428 AH [Arabic])	Updated norms, publication of the original norming report, and norming of the verbal form
Gifted Rating Scales, Scales for Rating the Behavioral Characteristics of Superior Students, and observation tools	We found no published Saudi norming study for any of them	Norming, or local norms built by the program
Cognitive Abilities Test and Naglieri Nonverbal Ability Test	We know of no published standardized Arabic version	Full adaptation and norming

The decision pathway

Figure 12.5 brings the preceding material together in a general pathway suited to a school or regional program, in which the Mawhiba test can serve as the screening instrument in the second step.

1 Providing opportunities to display

Open-ended activities, projects, and challenges in the classroom that reveal what regular lessons do not.



2 Screening and nomination

A group ability test for all students at the grade level where available, or the Mawhiba test with every family encouraged to register, plus teacher and family nomination using structured observation tools after the first step.



Above the screening cutoff or a strong nomination

3 Multi-source assessment

Depending on the program: an individual ability test, an above-level achievement test, a rating scale, and a performance task or portfolio. For linguistically diverse students or students with disabilities: nonverbal tools within a broader battery, and accommodations that do not change what the test measures.



4 Combining evidence by a stated rule

A clear rule, set in advance, for how sources are combined, consistent with the program's definition and taking local norms into account.



Does the evidence indicate a need beyond what the classroom provides?

Yes



Identification and placement

In the service that matches the domain and level of the student's giftedness

Not now



Monitoring and enrichment

The door stays open, with reconsideration at later stages

Figure 12.5: A general pathway for identifying gifted learners. Note that it begins by providing opportunities before screening, that the combination rule is announced before the evidence is gathered, and that it ends with a placement matched to the type of giftedness rather than a global verdict of “gifted” or “not gifted.”

12.8 When is the judgment made? Three cases

Case 1: Jana, age 10

General giftedness with a strength in science

The rest of the opening scene: Jana is a fourth grader whom her teachers did not nominate because she daydreams a lot and her spelling grades are average. After the science teacher mentioned her soil project, she proposed to the school that all the girls in the grade be offered open-ended activities for two weeks, after which the teachers would complete a structured observation checklist. Jana stood out in curiosity, reasoning, and inquiry. The school then encouraged all the students’ families to register for the Mawhiba test, and her family registered her at the first level. The figures in the table are hypothetical, for illustration.

Table 12.12: Evidence in Jana’s case.

Source	Result	What it means
Observation checklist after the open-ended activities	High in curiosity, reasoning, and inquiry; average in self-discipline and organization	Gifted behaviors that emerged once the opportunity was provided
Mawhiba Multiple Cognitive Abilities Test	97th percentile among applicants from her grade; her strongest domain was scientific and mechanical reasoning	High reasoning relative only to those who sat the test nationally

Source	Result	What it means
Seventh-grade science test, administered to her in fourth grade	72nd percentile on seventh-grade norms	At least three years ahead of her grade in science
Spelling	Standard score of 98 (average)	Not inconsistent with giftedness, and does not call for further assessment at this point

Decision: Jana is identified as gifted, with a particular strength in science, and is placed in a science enrichment program with acceleration in science. Her daydreaming is not settled for now. Eight to twelve weeks after she joins the program, she is observed systematically in a regular lesson and in one that offers suitable challenge, and the question is asked: does the daydreaming diminish when she meets a challenge? Yet this is a **supporting question, not a decisive one**. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (**DSM-5-TR**), states that signs of attention-deficit/hyperactivity disorder may be minimal or absent when the child is receiving frequent rewards for appropriate behavior, is under close supervision, is in a novel setting, or is engaged in especially interesting activities (American Psychiatric Association, 2022). If the daydreaming persists across more than one setting and visibly affects her organization and performance at home and at school, an assessment for the disorder or for anxiety is completed as a possible case of twice-exceptionality, not as an alternative to giftedness (Chapters 10 and 13 take up this distinction in detail).

What evidence could change the decision? If her performance in the advanced science course falls short of what the above-level test result suggests, the team would revisit the amount of acceleration and the

starting point. If the daydreaming persists at home and at school after she has found challenge, with effects on her organization and performance, an assessment for possible twice-exceptionality would be added to the giftedness decision.

Case 2: Mishari, age 11

Local norms bring him into view

The story: Mishari is a fifth grader at a small school in a remote village. There are 18 students in his class, the school has a basic laboratory, and there is no regular enrichment activity. His score on the group ability test fell below the national admission cutoff for one of the programs. Yet he is the top student in his school by a wide margin, and from parts of old devices he has built a robotic arm that moves on simple commands, which he taught himself to program from online videos. The figures in the table are hypothetical, for illustration.

Table 12.13: Evidence in Mishari's case.

Source	Result	What it means
Group ability test, national norms	116, i.e., the 86th national percentile; the program's cutoff is the 95th percentile	Below the cutoff under the national-norms rule
The same score among students in his grade at his school	First of 18 students	An important indicator, but unstable: in a group of this size, each rank is separated from the next by about six percentiles

Source	Result	What it means
The same score on local norms for rural schools in the education directorate (420 fifth graders, two years combined)	97th percentile	Within the top 3% of students who had comparable opportunities, a more stable comparison than with his class alone
Portfolio and evaluation by a panel of three specialists, each rating independently	The robotic arm project with documentation of its steps; close agreement among the judges on originality and craftsmanship	Advanced design and programming ability, and self-directed learning
Individual nonverbal intelligence test	124 (confidence interval 117–129)	High reasoning that supports the other evidence but does not replace it

Decision: Had a single rule been applied with national norms, Mishari would have been missed. Had the team relied only on his rank in his class, the judgment would have hinged on one or two students. The team therefore made the rural schools in the directorate its reference group, combined two years of data to enlarge it, and stated this in the report. It then combined the local norms, the portfolio, and the individual test, identified him as gifted in the technical domain, and recommended placement in a remote enrichment program with mentoring from a robotics specialist. The report cautioned that services must start from his actual level in programming and mathematics as revealed by the evidence, because the absolute level of students identified through local norms varies. This applies the idea of local norms, which compare students with others who have had comparable opportunities, and the phrase “their environment” in the definition of giftedness.

What evidence could change the decision? If his local rank dropped markedly once a third year was added to the reference group, or if his performance in the enrichment program fell short of what his portfolio suggests, the team would revisit both the placement and the level of service.

Case 3: Dana, age 9

A high achiever who needs a different service

The story: Dana is in third grade, and all her teachers nominated her for the gifted program for girls. She has been top of her class since first grade, her marks are perfect, and she is highly organized and hardworking. The figures in the table are hypothetical, for illustration.

Table 12.14: Evidence in Dana's case.

Source	Result	What it means
Teachers' rating scales	T-scores of 68 in motivation, 66 in academic ability, and 54 in creativity	A high-achieving, persistent student
Individual ability test	General Ability Index 114 (confidence interval 108–119)	Above average, with the entire interval below the usual threshold for general gifted programs
Sixth-grade Arabic language test, administered in third grade	68th percentile on sixth-grade girls' norms	Language achievement three years ahead of her grade

Source	Result	What it means
Fifth-grade mathematics test, administered in third grade	46th percentile on fifth-grade girls' norms	Advanced in mathematics, though to a lesser degree

Decision: Dana did not meet the criteria for the general gifted program for girls, which requires very high general ability. Yet the team did not stop at saying she is “not gifted.” Her language achievement, three years ahead, means that her grade’s curriculum does not challenge her in language. The team therefore recommended **acceleration** (**Acceleration**) in Arabic, meaning that she study it with a higher grade or through an advanced curriculum, together with an enrichment activity in creative writing. Nor did the team rely on the above-level test result alone to set her starting point. It analyzed her answers to find out which parts of the higher grades’ curriculum she had mastered and which she had not, then built a plan addressing only what she had not yet mastered, with the requirement that she pass the end-of-course test in the advanced course before moving beyond it, following the Diagnostic Testing → Prescriptive Instruction model (see the profile of above-level testing in 12.6). This is what aligning identification with services means: the question is not “Is she gifted?” but “What service does she need?”

What evidence could change the decision? If a later reassessment of her ability yielded a General Ability Index whose entire confidence interval lay above the program threshold, or if independent judges rated her creative writing products highly, the team would reconsider placing her in the general gifted program or in a specialized language program.

12.9

What can be mistaken for giftedness, and what can hide it

Table 12.15: Situations in which giftedness may be wrongly suspected or hidden, and how the team handles them.

Situation	What happens	How we handle it
The high achiever	High marks earned through effort and discipline, with above-average but not exceptional ability	Needs challenge in the subjects where he or she excels, which may suffice without a general gifted program, as in Dana's case
The gifted underachiever	Very high ability with average or low achievement, owing to boredom or to emotional or environmental factors	Detected through ability measures, since achievement conceals it; needs support for motivation alongside challenge
Giftedness that resembles a disorder	Boredom, daydreaming, repeated questions, and intense sensitivity may be misread as attention-deficit/hyperactivity disorder or an emotional disorder (Webb et al., 2005)	The student is observed systematically in an ordinary lesson and in one that offers suitable challenge, and a supporting question is asked: does the behavior diminish when the student is challenged? Its disappearance does not rule out the disorder, since symptoms may lessen during interesting or novel activities, under close supervision, or with frequent rewards (American Psychiatric Association, 2022). It is therefore combined with a developmental history, ratings from more than one informant across more than one setting, and evidence of functional impact at home and at school

Situation	What happens	How we handle it
Giftedness with a disability (twice-exceptional learners)	The disability masks the giftedness, the giftedness masks the disability, or each masks the other so that the student appears average	A comprehensive assessment that looks for strengths and weaknesses together and compares the General Ability Index with the Cognitive Proficiency Index rather than relying on the full-scale score alone. A Saudi study estimated that about 5.9% of a sample of 6,875 students in four private schools in Riyadh may belong to this group (Almulhim, Aljughaiman, Alnaim, et al., 2026) (Chapter 13 treats it in detail)
The gifted student who is linguistically diverse or from a low-opportunity environment	Lower scores on verbal tests and on national norms	Local norms, performance assessment, and a nonverbal test within a battery that includes verbal and quantitative reasoning (Lohman, 2005), as in Mishari’s case

Conclusion

The central argument of this chapter is that the definition of giftedness determines the tools of identification, and that every definition and every admission rule determines, at the same time, who may be missed. It follows that teacher nomination should not be relied on alone, since it is limited by teachers’ biases and by the opportunities to display that the classroom affords; that universal screening and local norms should widen access, with due attention to their conditions; that a nonverbal test should form part of a broader battery; and that above-level testing should be used when the ceiling limits what we can read of a student’s ability. Creativity tests serve as a complement, alongside the evaluation of real products.

Some questions in the chapter nonetheless remain contested, and the evidence on others has yet to be published. The predictive validity of creativity tests is disputed. The Mawhiba test is a national instrument developed in Arabic, but registration is optional, and its score scale and technical evidence are unpublished. Saudi documents use different IQ thresholds (115, 120, and 125) with different combination rules. Distinguishing giftedness from a disorder remains a judgment that no single question can settle: the disappearance of a behavior under challenge is a supporting clue that needs others alongside it. And identification extends beyond the question “Is the student gifted?” to the service that suits the domain and level of the student’s giftedness.

12.10**Summary, key terms and activities****Chapter summary**

- The definition of giftedness determines the tools of identification; contemporary definitions encompass both potential and achievement and take the environment into account. Each of the four models has those it may miss.
- Gagné distinguishes natural gifts from developed talents and sets a threshold at the top 10%, with five levels that help in reading admission rules.
- Teacher nomination is limited by teachers’ biases and by the opportunities the classroom affords for giftedness to be displayed. Universal screening and local norms widen access; local norms carry conditions on the size of the reference group and limits on how far the label transfers.
- A nonverbal test is part of a broader battery. The General Ability Index is useful with uneven profiles, and its difference from the Cognitive Proficiency Index is read in terms of significance and

rarity. Above-level testing solves the ceiling problem and sets the starting point for acceleration.

- Creativity tests measure divergent thinking; their predictive validity is disputed, and they are used as a complement alongside the evaluation of real products.
- The Mawhiba test is a national instrument developed in Arabic, but registration is optional and its score scale and technical evidence are unpublished; Saudi documents use different IQ thresholds (115, 120, and 125) with different combination rules.
- In distinguishing giftedness from a disorder, the disappearance of a behavior under challenge is a supporting question that needs further evidence.
- The most important question after “Is the student gifted?” is “What service suits the domain and level of the student’s giftedness?”

Glossary of terms

Gift	High natural ability not yet refined through learning and practice.
Talent	A mastered skill in a specific field, developed from gifts through learning and practice.
Opportunity to display	The situations a learning environment offers the student in which to display his or her abilities.
Universal screening	Assessing all students at a given grade level rather than relying on nomination.

Ceiling effect	A test's inability to discriminate among high-performing students because it contains too few difficult items.
Above-level testing	Administering a test designed for older students to an able student in order to gauge how far ahead he or she is.
General Ability Index General Ability Index, GAI	A composite score measuring reasoning and comprehension without working memory or processing speed.
Cognitive Proficiency Index, CPI	A composite score drawn from working memory and processing speed subtests, compared with the General Ability Index to describe an uneven profile.
Talent pool	A broad group of students, about 15–20%, offered enrichment services in Renzulli's model, with flexible entry for those who display gifted behavior.
Excellence gaps	Differences between groups in the proportions of students who reach advanced levels of performance.
Consensual Assessment Technique	Evaluating a product's creativity through independent ratings by judges familiar with the field, then examining their agreement.
DT→PI	A model used in talent search programs that pinpoints what a student does not yet know of an advanced course, teaches only that material, and then tests the student at the end of the course.

Divergent thinking	The capacity to generate many varied and original ideas for a single problem.
Three-Ring Conception	Renzulli's conception of gifted behavior as the intersection of above-average ability, task commitment, and creativity.
Local norms	Comparing a student's performance with that of peers in the same school or area rather than with the national norming sample alone.
Creative-productive giftedness	The capacity to produce original ideas and products for a real audience; Renzulli contrasts it with schoolhouse giftedness, that is, skill at learning lessons and taking tests.
Acceleration	Presenting content to a student at a younger age or a faster pace than usual, such as studying a subject with a higher grade.
Twice-exceptional	Gifted students who also have a disability or disorder.
Gifted underachiever	A student whose ability is very high and whose achievement falls clearly below it.

Review questions

1. A program offers robotics enrichment to intermediate school students. Which of the four models in Table 12.2 best suits its definition of giftedness? What tools does that model call for, and whom might it miss?
2. An education directorate admits to its gifted program students who are nominated by their teachers and score above 130 on an individual intelligence test, and it does not reconsider those who are not admitted. Identify three principles in Table 12.3 that this procedure violates, and propose a modification for each.
3. What is meant by the opportunity to display and by inference load? Why might a teacher fall back on nominating high achievers when such opportunities are absent?
4. A student has a General Ability Index of 132, a Cognitive Proficiency Index of 104, and a full-scale IQ of 121. What two questions would you ask about the difference between the two indexes before interpreting it? Which score would you use to judge his eligibility for a program that requires 125, and why?
5. Two students scored at the 99th percentile on a grade-level mathematics test. How would you determine which of them needs acceleration? And what would be added afterward to set the starting point in the advanced course?
6. What are the limits of creative thinking tests? How does the Consensual Assessment Technique complement them? And why do the available Saudi norms for the Torrance test call for particular caution on the originality dimension?
7. A student scored 117 (confidence interval 111–122) on the cognitive abilities test, her achievement was 98% over the last two semesters, and her creative product was rated high. What decision does the rule of the Regulations (1422 AH) yield for her, and what decision does the rule of the gifted classes

guide yield? And what does the confidence interval say about the difference between her score and the threshold of 120?

8. Evaluate the Mawhiba test against the identification principles in 12.2: which two principles does it satisfy, and which two does it fail to satisfy in its published form? How could a school program you know fill one of these two gaps?
9. A fourth grader daydreams in class and asks questions far removed from the lesson; his mother says he spends hours building model airplanes without looking up. His teacher concluded that his focus during an open-ended science activity rules out attention-deficit/hyperactivity disorder. Evaluate her reasoning, and identify the evidence you would need before reaching any judgment.
10. **Case for application:** Thamer is fifteen and in tenth grade. For the past two years he has been making short animated films, one of which won second place in a regional competition for secondary school students. His school grades range from good to very good. On the Mawhiba test, at the third level, he scored at the 81st percentile among applicants from his grade, and so was not admitted to the advanced program. The art teacher who taught him in intermediate school completed the school form of a gifted rating scale: his T-score for artistic talent was 72, and his scores on the other scales ranged from 50 to 56. He was also given an individual intelligence test, with a full-scale score of 117 (confidence interval 111–122). The school principal wants a decision: should he be nominated for a gifted program? (a) Which of the four models would detect Thamer, and which would miss him? (b) What are the two problems with relying on the gifted rating scales here? (c) What missing evidence must be gathered before a judgment can be made in his domain of talent, and how should it be gathered? (d) What is your decision now, and what service do you propose? Justify your decision.

Table 12.16: Alignment of chapter objectives with review questions and learning activities.

Objective	Assessed by
1. Compare the four models of giftedness	Question 1; part (a) of Question 10
2. Determine what is consistent with the principles of identification and what violates them	Question 2; Activity 2
3. Design opportunities to display and determine the effect of their absence	Question 3; Activity 1
4. Interpret the results of ability and creative thinking measures	Questions 4, 5 and 6; Activity 3
5. Apply and critique the Saudi criteria	Questions 7 and 8; Activity 2
6. Judge the sufficiency of evidence and distinguish the gifted student from the high achiever and from the student with a disorder	Question 9; Question 10 (case for application)

Learning activities

Any activity in which an activity or instrument is administered to students, or in which a real student's data are used, is carried out with the consent of the family and the school administration, without any information that could identify the student, and under the supervision of a qualified specialist. Its results are not used in any decision concerning the student and are reported only through official channels.

1. **A week of opportunities to display:** Design five open-ended activities for a class you teach or are able to observe, and before administering them, write a list of the students you would have nominated for a gifted program. Then administer the activities under the conditions above, record, using codes

rather than names, the students who showed indicators you had not expected, and compare the two lists. If no class is available to you, apply the steps to Jana's scene and Thamer's case. *Product: five written activities, a comparison table, and a reflective paragraph. Time: one week for administration and about two hours for writing.*

2. **A program's definition:** Choose a gifted program in your area, such as gifted classes or one of Mawhiba's programs, and extract from its published documents its definition of giftedness, its tools, its thresholds, and its combination rule. Then compare these with Tables 12.3 and 12.9, identify whom the program may miss, and propose one feasible modification. *Product: a table and a paragraph. Time: about two hours.*
3. **A creative activity:** Design an activity in the style of Figure 12.4, using an incomplete geometric shape other than a semicircle. Administer it to ten of your classmates, or to students under the conditions above, and score the responses for fluency, flexibility, originality, and elaboration. Then ask two colleagues to rate the creativity of the same responses independently using the Consensual Assessment Technique, and compare the three sets of ratings. *Product: the activity, a table of ratings, and a paragraph on interrater agreement. Time: about two hours.*

Chapter references

- King Abdulaziz and His Companions Foundation for Giftedness and Creativity. (n.d.). *[National Program for Gifted Identification]* [In Arabic]. Retrieved September 29, 2026, from <https://www.mawhiba.sa/en/services/the-national-program-for-gifted-identification/>
- Al-Nafi, A. (1428 AH). *Creative thinking* [Slide presentation] [In Arabic]. King Saud University. https://faculty.ksu.edu.sa/sites/default/files/_ltfkyr_lbdy-d.bdllh_lnf_0.pdf
- Ministry of Education. (n.d.). *[Guide to gifted classes]* [In Arabic]. General Administration for the Gifted. Retrieved September 29, 2026, from <https://www.moe.gov.sa/ar/aboutus/aboutministry/RPRLibrary/دليل%20فصول%20الموهوبين.pdf>

- Ministry of Education. (1436 AH). *[Special education organizational guide]* [In Arabic] (1st ed., academic year 1436–1437 AH). <https://moe.gov.sa/en/aboutus/aboutministry/RPRLibrary/الدليل20%التنظيمي20%للتربية20%الخاصة.pdf>
- Ministry of Education. (1437 AH). *Organizational and procedural guide for the school program for gifted girls* [In Arabic]. General Directorate for Gifted Girls. [https://www.moe.gov.sa/en/aboutus/aboutministry/RPRLibrary/الدليل20%الإجرائي20%والتنظيمي20%لبرنامج20%رعاية20%الموهوبات20%المدرسي20%\(1\).pdf](https://www.moe.gov.sa/en/aboutus/aboutministry/RPRLibrary/الدليل20%الإجرائي20%والتنظيمي20%لبرنامج20%رعاية20%الموهوبات20%المدرسي20%(1).pdf)
- Ministry of Education [Al-Ma'arif]. (1422 AH). *[Regulations for Special Education Institutes and Programs]* [In Arabic]. <https://moe.gov.sa/en/aboutus/aboutministry/RPRLibrary/القواعد20%التنظيمية20%لمعاهد20%وبرامج20%التربية20%الخاصة20%201422.pdf>
- Alfaiz, F. S. (2026). The accuracy of parent and teacher nominations in gifted identification in Saudi Arabia. *Cogent Education*, 13(1), Article 2654922. <https://doi.org/10.1080/2331186X.2026.2654922>
- Alfaiz, F. S., Alfaid, A. A., & Aljughaiman, A. M. (2022). Current status of gifted education in Saudi Arabia. *Cogent Education*, 9(1), Article 2064585. <https://doi.org/10.1080/2331186X.2022.2064585>
- Almulhim, N., Aljughaiman, A., Alnaim, F., Alsayed, A., Alfawzan, S., & Alarfaj, A. (2026). Hidden potential: An exploratory study of the prevalence of twice-exceptional students in Saudi Arabia. *Journal of Intelligence*, 14(5), Article 83. <https://doi.org/10.3390/jintelligence14050083>
- Almulhim, N., Aljughaiman, A. M., & Alfaiz, F. S. (2026). Beyond the total score: Revealing cognitive heterogeneity in high ability through latent profile analysis. *Journal of Intelligence*, 14(8), Article 166. <https://doi.org/10.3390/jintelligence14080166>
- Amabile, T. M. (1982). Social psychology of creativity: A consensual assessment technique. *Journal of Personality and Social Psychology*, 43(5), 997–1013.
- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.). <https://doi.org/10.1176/appi.books.9780890425787>
- Assouline, S. G., Colangelo, N., VanTassel-Baska, J., & Lupkowski-Shoplík, A. (Eds.). (2015). *A nation empowered: Evidence trumps the excuses holding back America's brightest students*. Belin-Blank Center.

- Card, D., & Giuliano, L. (2016). Universal screening increases the representation of low-income and minority students in gifted education. *Proceedings of the National Academy of Sciences, 113*(48), 13678–13683.
- Coleman, M. R., Shah-Coltrane, S., & Harrison, A. (2010). *U-STARs~PLUS: Teacher's observation of potential in students*. Council for Exceptional Children.
- Ejbara, M. A. (2024). Psychometric characteristics of a Saudi version of Wechsler Intelligence Scale for Preschool and Young Children. *Dirasat: Educational Sciences, 51*(2), 35–52. <https://doi.org/10.35516/edu.v51i2.6661>
- Frasier, M. M., Hunsaker, S. L., Lee, J., Mitchell, S., Cramond, B., Krisel, S., García, J. H., Martin, D., Frank, E., & Finley, V. S. (1995). *Core attributes of giftedness: A foundation for recognizing the gifted potential of minority and economically disadvantaged students* (RM95210). University of Connecticut, The National Research Center on the Gifted and Talented.
- Gagné, F. (2009). Building gifts into talents: Detailed overview of the DMGT 2.0. In B. MacFarlane & T. Stambaugh (Eds.), *Leading change in gifted education: The festschrift of Dr. Joyce VanTassel-Baska* (pp. 61–80). Prufrock Press.
- Gagné, F. (2013). The DMGT: Changes within, beneath, and beyond. *Talent Development & Excellence, 5*(1), 5–19.
- Grissom, J. A., & Redding, C. (2016). Discretion and disproportionality: Explaining the underrepresentation of high-achieving students of color in gifted programs. *AERA Open, 2*(1).
- Kaufman, A. S., Raiford, S. E., & Coalson, D. L. (2016). *Intelligent testing with the WISC-V*. Wiley.
- Kim, K. H. (2006). Can we trust creativity tests? A review of the Torrance Tests of Creative Thinking (TTCT). *Creativity Research Journal, 18*(1), 3–14.
- Lohman, D. F. (2005). The role of nonverbal ability tests in identifying academically gifted students: An aptitude perspective. *Gifted Child Quarterly, 49*(2), 111–138.
- Lohman, D. F. (2011). *Cognitive Abilities Test* (Form 7). Riverside.
- Lohman, D. F., & Korb, K. A. (2006). Gifted today but not tomorrow? Longitudinal changes in ability and achievement during elementary school. *Journal for the Education of the Gifted, 29*(4), 451–484.

- Lubinski, D., & Benbow, C. P. (2006). Study of Mathematically Precocious Youth after 35 years: Uncovering antecedents for the development of math-science expertise. *Perspectives on Psychological Science*, 1(4), 316–345.
- Naglieri, J. A. (2016). *Naglieri Nonverbal Ability Test* (3rd ed.). Pearson.
- National Association for Gifted Children. (2018). *Use of the WISC-V for gifted and twice exceptional identification* [Position statement].
- National Association for Gifted Children. (2019a). *A definition of giftedness that guides best practice* [Position statement].
- National Association for Gifted Children. (2019b). *2019 Pre-K–Grade 12 gifted programming standards*.
- Peters, S. J., Rambo-Hernandez, K., Makel, M. C., Matthews, M. S., & Plucker, J. A. (2019). Effect of local norms on racial and ethnic representation in gifted education. *AERA Open*, 5(2).
- Pfeiffer, S. I. (2015). *Essentials of gifted assessment*. Wiley.
- Pfeiffer, S. I. (Ed.). (2018). *APA handbook of giftedness and talent*. American Psychological Association.
- Pfeiffer, S. I., & Jarosewich, T. (2003). *Gifted Rating Scales*. Pearson.
- Plucker, J. A., & Peters, S. J. (2016). *Excellence gaps in education: Expanding opportunities for talented students*. Harvard Education Press.
- Renzulli, J. S. (1978). What makes giftedness? Reexamining a definition. *Phi Delta Kappan*, 60(3), 180–184.
- Renzulli, J. S. (1986). The three-ring conception of giftedness: A developmental model for creative productivity. In R. J. Sternberg & J. E. Davidson (Eds.), *Conceptions of giftedness* (pp. 53–92). Cambridge University Press.
- Renzulli, J. S., & Reis, S. M. (2014). *The schoolwide enrichment model: A how-to guide for talent development* (3rd ed.). Prufrock Press.
- Renzulli, J. S., Smith, L. H., White, A. J., Callahan, C. M., Hartman, R. K., Westberg, K. L., Gavin, M. K., Reis, S. M., Siegle, D., & Sytsma Reed, R. E. (2010). *Scales for rating the behavioral characteristics of superior students: Technical and administration manual* (3rd ed.). Prufrock Press.

- Subotnik, R. F., Olszewski-Kubilius, P., & Worrell, F. C. (2011). Rethinking giftedness and gifted education: A proposed direction forward based on psychological science. *Psychological Science in the Public Interest*, 12(1), 3–54.
- Terman, L. M. (1925). *Genetic studies of genius: Vol. 1. Mental and physical traits of a thousand gifted children*. Stanford University Press.
- Webb, J. T., Amend, E. R., Webb, N. E., Goerss, J., Beljan, P., & Olenchak, F. R. (2005). *Misdiagnosis and dual diagnoses of gifted children and adults*. Great Potential Press.
- Worrell, F. C., Subotnik, R. F., Olszewski-Kubilius, P., & Dixon, D. D. (2019). Gifted students. *Annual Review of Psychology*, 70, 551–576.

When is it sound to conclude that a student has a disability, a disorder, giftedness or twice-exceptionality, and on what grounds?

This book traces the stages of diagnosis and identification systematically, from referral and the gathering of evidence to the interpretation of that evidence and the decisions built on it. It goes beyond defining the categories and setting out their criteria to examine the nature of measurement instruments, the procedures for administering them, the qualifications required of those who administer them, the principles for interpreting their results, and the point at which the evidence is sufficient to support a judgment.

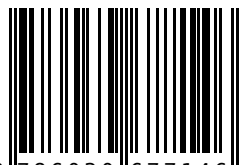
The book brings together two fields that the literature usually treats separately: disabilities and disorders, and giftedness and twice-exceptionality. It reads international standards and the American experience in light of published Saudi regulations, and describes the status of the Arabic version of each instrument it presents.

Its fifteen chapters address the foundations of measurement; formal, informal and alternative methods of gathering evidence; and identification models; then take up the categories of exceptionality one by one, supported by decision pathways, instrument profiles and applied cases. They close with fairness in diagnosis, report writing, and the development of the individualized education program.

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