

Case Study 1: James

James is aged 9 years and 7 months and is in Year 4. His parents separated when he was in Year 3. James lives at home with his mother and brother in a socio-economically advantaged area. He sees his father once or twice a week. His mother is an image consultant and make-up artist. His father is a consulting pediatrician. His only brother, who is in Year 6, has been evaluated by a private psychologist as dyslexic, dyspraxic, and suffering from Asperger's syndrome.

James attends a problem-solving workshop in mathematics and receives regular teaching in the other subjects in a state school setting. James attended a nursery school, but since then, he has not received any special services related to LDs at school. James is described by his teacher as "very able in mathematics, good at science and history"; the Year 5/6 class teacher teaches him in an accelerated mathematics programme at school. His artwork is "very detailed," and he has recently "written detailed stories on the computer at home." On the other hand, the teacher reports that James "has dyslexic tendencies when spelling."

James obtained a Full Scale IQ of 138 on the WISC-III^{UK}. This score indicates that he is a "very superior" student. The test showed a discrepancy between the two scales (Verbal IQ 147, Performance IQ 119). What was glaringly apparent was that James's Coding subtest raw score was 31, which is well below what would be expected for his chronological age of 8 years and 6 months, although he scored high on all other subtests. Coding indicates the speed at which new tasks are learned, visual memory, motor coordination, perception, and persistence. However, the scale showed that arithmetic is one of James's major strengths.

A dynamic assessment method was used to determine whether James exhibits high performance in mathematics. James was given the Written National Standardized Mathematics Test for Year 4 (1997 version). The test is divided into two parts: Part A (31 questions in 45 minutes) and Part B (15 challenging questions, untimed). Both were given to James. He solved all the questions correctly in Part A in 20 minutes and all 15 questions in Part B. According to the score interpretation, James's score set him above the level of Year 4 classes in mathematics. The following day, James was given 1 hour of intensive geometry instruction at the level of a Year 6/7 child. He was eager to learn new concepts in geometry and different types of angles. He was given tasks to find the angles without using a protractor (angle measurer). Although James grasped the concepts quickly, he found it challenging to memorize some of the given terms. Thus, he was given a paper explaining these angles and their names. One day later, James was given a post-test in geometry, based on the Mathematics National Curriculum for Years 6 and 7. The test has nine varied questions, six of which challenge his high mathematical ability. James finished the test in only 25 minutes. He answered eight of the questions correctly by finding the angles and giving the reasons for his answers. James demonstrated a high level of reasoning compared to students of his chronological age. The last question was the only one he could not answer, which caused frustration. . . .

Twice-Exceptional Learners (e2): Gifted with Learning Disabilities

Prof. Anies Al-Hroub, American University of Beirut

James was assessed using the Dyslexia Screening Test (DST). The profile indicated a “noticeable difficulty” in the Two-Minute Spelling, Postural Stability, and One-Minute Writing subtests. By contrast, he showed a “strong ability” in terms of manual dexterity (Bead Threading), Rapid Naming, Backward Span, Nonsense Passage Reading, Verbal Fluency, and Semantic Fluency, together with an “average ability” in the One-Minute Reading and Phonetic Segment subtests. All the “noticeable difficulties” in balance, spelling, and writing appeared to be consistent with James’s below-average score in the Coding in the WISC-III^{UK}, which involves speed and motor coordination skills. In the spelling test, James wrote the words “tommorow” instead of “tomorrow,” “tong” for “tongue,” “foran” for “foreign,” and “whos” for “whose.”

James showed a positive attitude towards reading. However, his performance in the Neale Analysis indicated a discrepancy between the Accuracy and Comprehension Reading Age (12 years and 6 months to 13 years), and the Rate Reading Age (8 years and 11 months). This revealed that he should be given adequate time to read and comprehend the passages accurately in class. James is a fluent reader, but he starts to make more errors when given timed reading passages. Analysis of his errors revealed that he omits and mispronounces some words. Analysis of his writing assignments revealed his almost illegible handwriting and poor spelling, which frequently accompany a learning difficulty.

There is no doubt that James is mathematically gifted. Although he uses written language well, his poor fine motor skills and spelling difficulty affect his performance in written tasks. His high intellectual and mathematical abilities, as well as his spelling and writing difficulties, are apparent to his parents and school.

Case Study 2: Maria

Maria is 9 years and 1 month old and lives at home with her mother and father. She has a Chinese father and an English mother. The primary language spoken at home is English. Maria is fluent in English but does not speak Mandarin. Her father was born and raised in the United States, and his first language is English; he knows a few Mandarin words. He is a barrister and engineer, and is highly skilled in mathematics; however, he has difficulty with reading and writing, as do some of his Chinese relatives. Maria's mother is a teacher and researcher; she struggles with writing and has weak fine motor skills, which affect her handwriting. Maria has one sister in the reception class and a one-year, six-month-old brother. Both Maria and her mother have an unusual pencil grip. According to her mother, Maria shares a very warm and strong relationship with her father, mother, brother, and sister.

Maria is in Year 4, takes part in a problem-solving mathematics workshop, and receives regular instruction in other subjects at a state school. She attended nursery for two years before spending four months in kindergarten in the U.S.A., where she received no formal reading or writing instruction. Due to parental concerns about her spelling, she was identified by the Primary Support Service as having writing and spelling difficulties and has received remedial support intermittently throughout this year.

All sources describe Maria as “a cooperative and quiet” child. She tends to be shy around new people. Her mother reports that Maria is an “above average” student but also shows signs of “emotional tension” and “lack of confidence.”

Maria scored a Full-Scale IQ of 126 on the WISC-IIIUK, placing her in the 96th percentile within the “superior range” of intelligence. The assessment showed a discrepancy between her Verbal and Performance IQ scores. Her Verbal IQ was 131, at the 98th percentile and considered “very superior,” while her Performance IQ was 110, at the 75th percentile, within the “average” range. Like James, Maria's Coding score was well below average, though she scored very high in other tests. Coding measures how quickly she learns new tasks, her visual memory, motor coordination, perception, and perseverance. This may partly relate to her unusual pencil grip.

The Neale Analysis indicates that, at her chronological age, Maria's reading rate (speed) is about 2 months below average, and her accuracy age is 4 months below average. Still, her comprehension age surpasses her chronological age by 1 year and 1 month. Error analysis suggests she lacks a strong understanding of sound-symbol relationships. She needs to focus on the middle and final letters and syllables. Her teacher reported that she's previously struggled with reading but has improved dramatically over the past year. Her writing shows issues with illegibility, spelling, and mechanical errors such as punctuation, capitalization, and apostrophes—typical signs of Learning Difficulties. Her spelling knowledge has gaps that require systematic intervention. She also needs targeted, structured support for writing and proofreading.

The Dyslexia Screening Test (DST) profile revealed “very severe difficulty” in One-Minute Writing and “severe difficulty” in Two-Minute Spelling, along with “noticeable difficulties” in Rapid

Twice-Exceptional Learners (e2): Gifted with Learning Disabilities

Prof. Anies Al-Hroub, American University of Beirut

Naming and Posture Stability. In the Two-Minute Spelling, she misspelled common words like “tomorrow” as “tomorow,” “doctor” as “docter,” “tongue” as “tung,” and “laugh” as “lagh.” These issues, along with her balance difficulties, align with her below-average Coding score. Conversely, she demonstrated a “strong ability” in Phonetic Segment, Nonsense Passage Reading, and Verbal Fluency, along with average performance in dexterity (Bead Threading), One-Minute Reading, and Backward Span. The latter aligns with her average score in Auditory Sequential Memory noted in her literacy assessment.

A dynamic assessment was used to evaluate Maria’s potential in mathematics. She took the Written National Standardised Mathematics Test for Year 4 (1999 version) at school. Although she struggled with some written questions, her overall score placed her above the Year 4 class level in math. The day after, she participated in a one-hour lesson focusing on her problems with time, money, and advanced operations, especially problem-solving, which she previously found challenging. She preferred solving problems mentally without writing, but throughout the lesson, she began using standard methods and writing her solutions down, which significantly improved her speed. She answered all pre-test questions correctly and made substantial progress during the lesson. Given her progress, she was given a more challenging post-test derived from the Mathematics National Curriculum for Years 4-6 (1999 version), with eight varied problems, five of which were from a Year 6 test. She completed the post-test in 41 minutes, needing extra time but answering all correctly.

Maria exemplifies a student with severe learning difficulties that impact her performance across all areas, often overshadowing her strong math skills. Nevertheless, her parents and school are aware of her high mathematical potential and her difficulties with writing and spelling.

Case Study 3: William

William is 11 years and 5 months old, a Year 6 pupil within a class of very mixed abilities and varied social backgrounds. He receives only regular educational teaching in his state school. William is well-spoken, verbally fluent, and has a sunny nature, a wonderful sense of humor, and wide-ranging general knowledge. William is the youngest child in his family; he has a 14-year-old brother who is “slightly dyspraxic,” has handwriting difficulties, and has been referred to a psychotherapist. William’s father is a university law lecturer, intelligent, and slightly dyspraxic. His mother is a commercial manager. William was previously evaluated by a private psychologist for dyspraxia and has motor problems with writing and with quickly marshalling his thoughts.

William attended a nursery school for 2 years before entering Year 1 at 5 years old. His parents stated that there were no concerns about him as a pre-school child. When William was in Year 1, the school identified his high ability; a specialist assessed him and found that he had high language ability.

William is a top debater, a mature, avid reader, demonstrates leadership qualities, and has shown a passion and strong aptitude for creative writing, mathematics, and music. He is bright, learns very quickly, and needs only to concentrate to grasp new concepts. He is bored promptly by work that is too easy and does not require any of the repetition built into the national literacy and numeracy strategies. He experiences significant tension, especially when he feels tired. He shouts, screams, and throws objects when he is overstretched. His teacher reported, “In terms of his ability, I feel we have not yet seen just how much William could do if he were not so very anxious about failing.” His mother stated that he was suicidal at one point when he lost control following a misdiagnosis for attention-deficit hyperactivity disorder (ADHD). A psychiatrist prescribed Ritalin to modify his hyperactive behavior, but in fact, it made him hyper-anxious. The disturbed behavior he exhibited while reacting to Ritalin brought him into conflict with his school; he was withdrawn and became depressed, after which he changed schools.

All of the sources stated that William is “a very popular boy in the class and he frequently leads activities both during breaks and during lessons.” His teacher reported that he has high mathematical abilities, and exceptionally high ability in language and science. William plays the piano at school assemblies and has begun peer-tutoring another boy at lunchtime. In contrast, it was reported that William was, however, slow to lace up, put on shoes, dress, and organize himself, and he needs to plan sequences of action.

William obtained a Full Scale IQ of 124 on the WISC-III^{UK}. This ranked him at the 95th percentile, placing him in the “superior range” of intelligence. Of particular interest was the 44-point discrepancy between his Verbal and Performance IQ Scales scores. William’s Verbal IQ Scale of 140 was at the 99.6th percentile level, which falls within the “very superior range,”. In contrast, his Performance IQ of 96 was at the 39th percentile, which falls within the “average range.” His subtest scores in the Verbal and Performance domains suggest that two different students took the test: one average and one gifted. The assessment indicated that the contrast between his superb verbal skills

Twice-Exceptional Learners (e2): Gifted with Learning Disabilities

Prof. Anies Al-Hroub, American University of Beirut

and his weaker coordination and slower processing speed for visual skills is highly significant and sufficient to cause him incredible frustration in class. Coding was the most critical learning block.

A dynamic assessment method was used to determine whether William exhibited high potential in mathematics. He was given pre- and post-tests that were derived from the Written National Standardised Mathematics Test for Year 6 (2000 and 2001 versions). The pre-test consisted of 11 questions, 5 of which were challenging geometry, problem-solving, and linear equations questions. When he was given the pre-test, William looked at the questions and, without reading any of them, said, “I cannot do it; these are so difficult.” The questions were read to him orally, and this encouraged him to begin answering them. He answered eight questions correctly, but could not answer the linear equation question and refused to read or answer the rest as he became tired. It was clear that William tended to answer questions mentally without writing down the method for solving the problems.

A day later, William received a 1-hour lesson focused on advanced geometry and problem-solving, which he had found difficult on his pre-test. In the one-to-one teaching session, he listened carefully to the teacher and asked several questions about using various methods to solve mathematical problems. Notably, individualized teaching has been proven to be a suitable method for engaging William and maintaining his concentration. However, although he showed high mathematical potential, William had not memorized the times table. He showed no desire to write down his answers to the exercises; he preferred to give them orally. The following day, William was given a post-test that focused on problem-solving, geometry, and linear equations. To accommodate his short attention span and lack of concentration, William was given a shorter post-test consisting of six questions. Like the behavior he had previously displayed, when he started to answer the pre-test questions, William quickly looked at the post-test questions and said, “I cannot do it... I am so tired.” However, the questions were read to him orally, and this encouraged him to start solving the problems. He answered all of the problem-solving and geometry questions, but he could not solve the linear equation question. He finished in 44 minutes, which is a long time. This suggests that William can master tasks if he is given adequate time.

The profile of the Dyslexia Screening Test (DST) indicated “very severe difficulty” with One-Minute Writing and “severe difficulty” with Posture Stability, together with “noticeable difficulties” with dexterity (Bead Threading). All these difficulties in writing, dexterity, and balance appear to be consistent with the below-average Coding in the WISC-III^{UK}. This suggests that William’s ability to coordinate actions to write at speed is significantly below his chronological age. In contrast, William showed a “strong ability” in terms of Rapid Naming, One-Minute Reading, Phonetic Segment, Backward Span, Nonsense Passage Reading, and Semantic Fluency, with average performance in Two-Minute Spelling and Verbal Fluency. These strengths suggest that the difficulties are primarily limited to the phonological domain.

The Neale Analysis Test showed that William’s reading age is at least 1.5 years above his chronological age. It was found that William’s reading is fluent, fast, and accurate, and his

Twice-Exceptional Learners (e2): Gifted with Learning Disabilities

Prof. Anies Al-Hroub, American University of Beirut

comprehension of the six given passages was at a high level. Analysis of William's reading revealed that he has a strong sense of the sound-symbol relationship, which reflects his exceptional oral language ability. Correspondingly, a private psychologist reported that William's reading age in the Wechsler Objective Reading Dimensions (WORD) is 2 years and 7 months above his chronological age.

A comparison of William's IQ (Full Scale, Verbal, and Performance) scores, his mathematics Dynamic Assessment, his school academic achievement, and his daily performance on academic tasks certainly indicates that his writing and handwriting difficulties and his high mathematical ability are masking each other.

Case study 4: Richard

Richard is a 10-year-old, Year 5 pupil receiving regular educational teaching within a large class of Years 5 and 6 children of very mixed abilities and varied social backgrounds. Richard lives at home with his parents and brother in a socio-economically advantaged area. Richard is a quiet and reserved child in the classroom. His father is a managing director, and his mother is a director. Richard's father stated that he is like Richard; he thinks more quickly than he writes, so his secretary constantly corrects his English grammar mistakes.

Richard attended a nursery school 2 years before entering Year 1 at 4 years and 4 months old. Richard is not easy to get along with; he does not initiate conversations with teachers or new people, even though he is an independent child. His teacher related that he is "difficult to motivate, hates anyone to do better than him."

Richard's primary strengths are mathematics and gymnastics. He described his favorite subject by saying, "I like mathematics, but I do not like writing." His score on the National Mathematics Test places him above average for his chronological age. According to his parents, he is an "above-average student." Richard's teacher noted that he "irritates anyone not as quickly as him; rather scornful with children with difficulties."

Richard obtained a Full Scale IQ of 119 on the WISC-III^{UK}. This ranked him in the 82nd percentile, which falls within the "above average range" of intelligence. The Scale showed a discrepancy between the Verbal and Performance IQ Scales. His Verbal IQ Scale of 131 was at the 98th percentile level, which falls within the "very superior range," whereas his Performance IQ of 99 was at the 47th percentile level, which falls within the "average range" for his age. His performance on the Object Assembly subtest, which assessed his visual sequencing and spatial skills, was below average for his age, reflecting a difficulty with the speed of working rather than inaccuracy. The Coding subtest assessed his ability to scan, match, and copy shapes at speed and to respond by writing. In this test, his performance was below the expected level for his age. According to Richard's teacher, he has difficulty writing, and he often writes illegibly. Although his writing has improved enormously over the past year, he hates writing. An observation of the student showed that he has some difficulty in grasping his pencil and in writing. The contrast between his superb verbal skills, his weaker coordination, and his slower processing speed for visual material is significant and can cause him incredible frustration in class.

A dynamic assessment method was used to determine whether Richard exhibited high performance in mathematics. Although Richard is in Year 5, he was given pre- and post-tests derived from the Written National Standardised Mathematics Test for Year 6 (2000 and 2001 versions) at school. The pre-test consists of 11 questions, 5 of which would challenge his mathematical abilities in geometry, problem-solving, and linear equations. The questions were read to him orally. In 35 minutes, Richard answered 7 questions correctly but could not solve the linear equation or one of the problem-

Twice-Exceptional Learners (e2): Gifted with Learning Disabilities

Prof. Anies Al-Hroub, American University of Beirut

solving questions. Richard indicated that he had never been given such difficult questions to solve in his class, and admitted that he “guessed some of the answers.”

On the following day, Richard was given a 1-hour lesson. The session focused on advanced exercises in linear equations and geometry, as well as the problem-solving questions he found difficult. Richard showed a strong potential for understanding new mathematical concepts, and he asked for the explanation of the method for solving a particular problem only once. He was enthusiastic, motivated, and pleased about the praise he received. Such individualized teaching was an appropriate method, especially for helping him solve advanced mathematical problems. One day later, Richard was given a post-test of six questions that consisted of problem-solving, geometry, and linear equations. Richard answered all the questions correctly in 35 minutes, which is an average time. This suggests that Richard can solve and master advanced mathematical tasks if he is exposed to them in the regular classroom.

The profile of the Dyslexia Screening Test (DST) indicated “noticeable difficulties” with Posture Stability and One-Minute Writing. These difficulties in writing and balance appear to be consistent with the below-average scores on the Coding and Object Assembly subtests of the WISC-III^{UK}. This suggests that Richard’s ability to coordinate actions, use visual sequencing and spatial skills, and write at speed was below average for his chronological age, reflecting a difficulty with the speed of working rather than inaccuracy. His parents commented, “When we encourage him to write sometimes, he can do it easily.” In contrast, Richard showed a “strong ability” in terms of Rapid Naming, One-Minute Reading, Phonetic Segment, Backward Span, Nonsense Passage Reading, and Verbal Fluency, with “average ability” in dexterity (Bead Threading). In the Two-Minute Spelling Test, although Richard misspelled some basic key words, such as “laugh” as “lagh,” “doctor” as “docter,” and “tongue” as “tongque,” his spelling score indicated that he is average according to his age. All of the abovementioned strengths in the DST suggest that the difficulties are mainly limited to the phonological or the oral language domains. Analyses of Richard’s writing assignments revealed that he has illegible handwriting and makes mechanical errors, including punctuation, capitalization, and omissions of letters.

The Neale Analysis Test showed that Richard’s reading rate age is 5 months above his chronological age. Although Richard showed fluent and accurate reading, his comprehension age was 1 year 7 months below his chronological age. Analysis of Richard’s reading revealed that he has a strong sense of the sound-symbol relationship and mispronounces a few words, which reflects his high oral language ability. His teacher reported that “he uses all strategies to tackle unfamiliar words, and needs a little help to be independent.”

Richard’s case exemplifies the need for both informal and formal assessment data to identify dual exceptional children. His test scores indicated high intellectual and mathematical abilities. Lacking historical data, one could easily overlook his LDs in writing.

Case study 5: Anne

Anne is a 10-year-old, Year 5 pupil receiving regular educational teaching within a large class of Year 5 and 6 children of very mixed abilities and varied social backgrounds. Anne lives at home with her mother, father, and brother. Anne is a friendly, cheerful, cooperative, and polite girl. Anne's teacher stated that she is very peaceful and calm, but does not have close relationships with other students. Anne's father is a sales manager, and her mother is a dental nurse and laboratory technician. Anne's mother is Polish, but English is the language spoken at home. Accordingly, Anne's first language is English, and she also knows some German words. Anne is left-handed and has an unusual pencil grip. Unlike her, both her mother and brother are right-handed, and her father is ambidextrous. She has a lisp (minor speech defect in which the sounds s and z are pronounced like the soft "th" sound in "third" or "thick"). A hearing support report indicated that Anne has a mild bilateral hearing loss. This ear infection, which occurs only in winter, makes it difficult for her to understand what is being said, particularly in the presence of significant background noise. Anne did not attend a nursery school. She entered her first Year when she was 4 years old, and transferred to another school when she was in Year 3. Her Year 1 teacher reported that she can listen to instructions and follow them, but needs to pay more attention at times and try not to interrupt.

Anne's teacher reported she has "high abilities in mathematics." The Mathematics National Test indicated that she is an above-average student in mathematics. Anne's special interest is lace-making and embroidery. She has very good gross motor skills. In contrast, Anne's teacher emphasizes that she has some language "gaps." She sometimes does not understand anything except literal language. Anne is described as sometimes being tense and irritable, speaking crossly, and being unable to understand other children. Her mother emphasized that English is Anne's first language. She mentioned that Anne can say very few words in German and Polish, and thus she would not consider her a bilingual student.

During the testing session, Anne was cooperative and generally followed directions well. Anne obtained a Full Scale IQ of 122 on the WISC-III^{UK}. This ranked her at the 93rd percentile, which falls within the "superior range" of intellectual functioning. The Scale showed no discrepancy between the Verbal and Performance IQ Scales. Her Verbal IQ of 120 was at the 91st percentile, whereas her Performance IQ of 119 was at the 90th percentile.

A dynamic assessment method was used to determine whether Anne exhibited high performance in mathematics. Although Anne is in a Year 5 class, she was given pre- and post-tests that were derived from the Written National Standardised Mathematics Test for Year 6 (2000 and 2001 versions). The pre-test consists of 11 questions, 5 of which would challenge her mathematically in geometry, problem-solving, and linear equations. Anne finished the test in 35 minutes; although she answered six questions correctly, she could not answer the linear equation and geometry questions, as well as one of the problem-solving questions. According to Anne, she had never received lessons in geometry or linear equations in her regular classroom. The following day, a 1-hour one-to-one session was given to Anne, focusing on advanced exercises in linear equations, geometry, and

problem-solving. Anne was enthusiastic, cooperative, and motivated during the teaching session. She displayed high mathematical abilities, especially in geometry. It was obvious that individual teaching is a more suitable approach for Anne, as she became noticeably more confident in asking about the most appropriate methods for solving the problems. One day later, Anne was given a post-test containing six questions on problem-solving, geometry, and linear equations. In 25 minutes, she answered five questions correctly. In the linear equation question, she used the correct method; however, because she forgot to include a negative sign (-), her final answer was incorrect. This suggests that Anne can master advanced mathematical tasks, especially visual ones, if she is exposed to them in the classroom.

The Neale Analysis Test indicated that Anne's reading rate is average for her chronological age. The test measured strengths in reading accuracy and comprehension. Her reading accuracy was 3 years above her chronological age, and her reading comprehension was 1 year and 1 month above. Analysis of Anne's reading revealed that she has a strong sense of the sound-symbol relationship and few mispronounced words, which reflects her high oral language ability. Anne's teacher stated that she is a "good and fluent reader." The profile of the Dyslexia Screening Test (DST) indicated a "strong ability" in terms of dexterity (Bead Threading), Two-Minute Spelling, Backward Span, Nonsense Passage Reading, One-Minute Writing, and Semantic Fluency. The test also revealed an "average ability" in Rapid Naming, One-Minute Reading, Postural Stability, Phonetic Segment, and Verbal Fluency. However, analyses of Anne's writing assignments revealed that she writes neatly with well-formed, "big" letters but has noticeable difficulty with composition and expressive written language. Although she takes extra time in class, Anne finds it challenging to structure her ideas coherently into a story.

Anne's case demonstrates that her intellectual and mathematical abilities, and her expressive written difficulty, mask each other, given that her mother reported that she is an "average" student. Moreover, Anne's English language skills are outstanding in different areas, such as reading comprehension and spelling, given that spelling requires accurate hearing. On the other hand, reading comprehension and expressive writing are not dependent on this capacity.

Case Study 6: Naseem

Naseem was 11 years and 5 months old when he was first evaluated in a sixth-grade class. He lives at home with his mother, father, and siblings in a socio-economically advantaged area. His father is often away from home due to his job as a ship engineer. His mother is a housewife with a higher diploma in English literature. Naseem and his family are all right-handed. He is the oldest of three siblings: two brothers aged 10 and 6, and a 1-year-old sister. He has never been evaluated by a private psychologist or a learning difficulty diagnostician as having learning difficulties. Naseem attended kindergarten at age

4. He entered the first grade in a co-educational public school at age 6 years and 1 month and stayed there until fourth grade. In this study, Naseem appeared to be a gifted student in mathematics with well-developed higher-order thinking skills. His Arabic teacher reported that "he has reading difficulties, especially in dictation," which, she said, affected his self-confidence. Sometimes, he receives exceptional help with dictation at school, and once he completes the work correctly, he looks very relieved. His math teacher noted that "his mathematical achievement is inconsistent, but I suspect he has high [mathematical] abilities." Both teachers agreed that "Naseem is a quiet and well-behaved boy who gets along well with his classmates, but he fears exams and failure greatly." Naseem has a very close relationship with his mother, who creates a relaxed environment, although he "needs some prompting to do homework." His mother describes Naseem as "a very sensitive child and very attached to his father," and calls him a "quiet, sensitive, and unsociable boy." He has no friends and becomes very angry when his parents invite classmates or neighbors to play or study with him. His mother said, "he can solve any hard math problem at home, but cannot solve similar ones in school tests." Naseem's interests include judo, football, and computer use; he spends most of his day working on his computer. During the evaluation, Naseem appeared reticent, polite, shy, and self-conscious. He listens carefully to instructions but rarely smiles or shows facial expressions. He is a perfectionist during exams, trying to solve each problem as well as possible, which has led to underachievement relative to his IQ. Naseem adapted well to the testing, cooperating and following directions carefully. According to the WISC-III-Jordan results, his Full-Scale IQ score places him in the 'superior' range, with a score of 126. There was a 13-point discrepancy between the two scales, with a Verbal IQ of 130 and a Performance IQ of 117. Notably, his Coding raw score was only 35, well below the average for his age, though he scored very highly on all other subtests. Coding measures speed in learning new tasks, visual memory, motor coordination, perception, and persistence. In this case, it indicated that arithmetic is Naseem's main strength. A dynamic assessment was used to evaluate his performance in mathematics. In the pre-test, Naseem solved most problems, scoring 14 points, well above the average for sixth-grade students. During the intervention, he received three 45-minute group teaching sessions, focusing on the types of problems on the test. He answered all questions correctly on the post-test, with no errors, indicating a score well

Twice-Exceptional Learners (e2): Gifted with Learning Disabilities

Prof. Anies Al-Hroub, American University of Beirut

above average. During this session, Naseem demonstrated himself to be a quick learner who concentrated intensely and was eager to understand new concepts in geometry. Naseem was also assessed on the Perceptual Skills Tests and the Arabic Language Literacy Basic Skills Scale. His profile showed a one-grade delay in the Reading Passage test, but strengths in Vocabulary Recognition and listening to passages. He was weaker in perceptual skills such as Visual Organization and Visual-Motor Coordination, but showed stronger abilities in Auditory Discrimination, Visual-Motor Integration, and Visual Analysis. His visual perceptual skills were above average, but his auditory perceptual skills, as well as auditory and visual short-term memory, were below average. Clearly, Naseem is intellectually and mathematically gifted. Despite good written language skills, his poor fine motor skills and reading and listening difficulties hinder his performance. His high intellect and math abilities, alongside his spelling and writing challenges, are well recognized by his parents and teachers.

Case study 7: Salwa

Salwa was 10 years and 11 months when she was first evaluated at the fifth-grade level. She lives at home with her parents and seven siblings (four girls and three boys), and is the second-oldest among her brothers and sisters, whose ages range from 1 year to 13 years and 1 month. No illness or medication was reported when Salwa's mother was pregnant with her. All of the family members, including Salwa, are right-handed. The Arabic language is the spoken language at home. Salwa's father is an accountant with a higher diploma in accounting, while her mother is a housewife with the general Jordanian secondary certificate (Tawjehi).

Salwa receives only regular programming across all subjects in the Jordanian curriculum in a public school setting. She attended a nursery school (kindergarten) for 1 year before entering the first-grade class at a single-sex girls' school at age 6. According to her mother, Salwa has "a very good, warm, loving, and happy relationship with her parents, brothers, and sisters". She gets on better with female than male playmates, and she has 6 to 10 female friends aged 10 to 16. She is an "independent but overly sensitive and affectionate girl" whose special interests are art, drawing, reading novels, and sports.

Salwa's mother reported, "Her mathematics teacher evaluated her as a student who has high mathematical abilities". However, she does not consider her daughter to have learning difficulties. No previous school assessment has reported that she has learning difficulties. Her Arabic and mathematics teachers agreed that she is "a shy girl who has fear and a lack of confidence". Her Arabic language teacher indicated, "She is a low achiever, which is a result of her fear of exams". However, her mathematics teacher recognized Salwa's "high mathematical abilities", despite her "low school achievement in mathematics".

All sources described Salwa as "a very quiet and cooperative" youngster. She is shy when she meets new people; therefore, to avoid the effects of her "shy personality" on test scores, the multidisciplinary team opened a discussion with her about her family and school to help her become familiar with the examiners.

Salwa listened carefully to the instructions in the test situations. Her strong reaction was revealed by her facial expressions when she was unable to answer questions. Salwa obtained a Full-Scale IQ of 123 on the WISC-III-Jordan, placing her in the 96th percentile and falling in the "superior range" of intelligence. The Scale showed a significant discrepancy of 24 points between the Verbal and Performance IQ Scales, with her Verbal IQ of 133 at the 98.6th percentile, falling within the very superior range, whilst her Performance IQ of 109 was at the 73rd percentile, and thus in the average range. Salwa scored well below average in Object Assembly and average in Coding and Picture Arrangement, although she scored very highly on all seven other subtests. Object Assembly measures a child's ability to make a whole out of its parts, as well as visual analysis skills and the ability to construct objects. At the same time, Picture Arrangement shows her attention to

visual detail, sequential reasoning, and the ability to create the whole from its parts. Coding indicates the speed at which new tasks are learned, as well as visual memory, motor coordination, perception, and persistence. Salwa's specific writing difficulties may partly explain the low scores. In the arithmetic subtest, Salwa scored well above average.

A dynamic test-teach-test method was used to determine whether Salwa exhibited high performance in mathematics. In the pre-test, Salwa was unable to solve some written questions and scored only 9.5 points (out of 20), which is an average score for students at the fifth-grade level. In the intervention phase, Salwa received three sessions (45 minutes each) of teaching with a group of students. The sessions focused on the questions that Salwa and the other students had been asked to answer in the pre-test, which involved problem-solving in time, money, geometry, algebra, and advanced operations. Throughout the teaching session, it was noticeable that Salwa preferred to solve the problems mentally, without showing how she arrived at the solutions. Salwa was taught how to show on paper that she had worked out the solutions to the issues. In the post-test, she answered all the questions and showed significant improvement in solving the problems correctly, scoring 19.5 points (out of 20). According to the score interpretations, her achievement was well above average.

Salwa was assessed using the Perceptual Skills Tests and the Scale of Arabic Language Literacy Basic Skills. The profile indicated a noticeable delay of 1½-grade levels in the Vocabulary Recognition, Listening to Different Vocabulary, and Reading Passages subtests. She also showed a one-grade-level delay in Reading and Listening Abilities. She was also relatively weak in Perceptual Skills Areas, such as Visual Organization and Visual-Motor Coordination. In contrast, she showed relative strengths in the Auditory Discrimination and Visual Motor Integration subtests. The latter subtest distinguishes between students with visual motor problems and those with exceptional copying skills. Salwa showed average skills in Auditory and Visual Short-Term Memory.

Salwa's example reveals that her reading difficulties affect her performance in all areas and seem to override her high mathematical and intellectual ability. However, both her parents and the school were aware of her high mathematical ability, but not of her learning difficulty.