

Twice-exceptional students

School resources

Twice-exceptional students are a group of neurodiverse students who are gifted and have an additional exceptionality that impacts upon their learning. It can be difficult to understand and recognise this group of students, and because of that it can be challenging to support them in classrooms and schools. Twice-exceptional students are vulnerable to social and emotional difficulties and under-achievement, and due to their unique combinations of giftedness and challenges they need careful support. There are some clear recommendations and strategies for how to approach meeting the complex needs of this group of students that emerge from current theory and practice.

What is meant by twice-exceptional?

Twice-exceptional students are a specific and identifiable group of students who are gifted and have an additional exceptionality or exceptionalities that impact on their learning. It is important that teachers, as well as parents and whānau, understand both of those terms to best support this group of students.

Gifted: There is a plethora of theory around what the term 'gifted' means but at the core are some very simple ideas that will help teachers to understand who gifted students are. Gifted students have **innate high abilities**¹. These abilities include a range of mental processes that underpin thinking and learning, such as reasoning (in a given context but also 'context-free' reasoning), comprehension (both verbal and visual), processing of information, memory, and the capacity to make connections. These are 'built-in' abilities, which is confirmed by emerging neuroscience, but they may show up at different times and in different contexts, often in response to conditions in a student's environment².

Gifted students also have **particular personal qualities**³. These qualities include emotional sensitivity and depth, intensity, curiosity, enthusiasm, and tenacity. They also include culturally-specific or culturally-valued qualities including [manaakitanga](#), [whanaungatanga](#), [pukumahi](#), appreciation of lineage, adaptability, and commitment to excellence⁴. These abilities and qualities can be seen in a **range of domains** and also in different contexts, not just in relation to formal academic learning⁵. These domains include the intellectual, creative, social (which also includes the cultural domain), perceptual, and physical domains.

This group of students has the potential for extraordinary achievement, but this requires particular circumstances and supports at home and at school, as well as internal characteristics such as motivation, tenacity, and curiosity. It is also important to be aware of and reject some of the [common myths](#) and misconceptions about gifted students.

Additional exceptionality: This can refer to any significant difference, in addition to giftedness, that impacts on learning. These differences can co-exist with giftedness but, while they may mask it, they do not negate it. Examples of these additional exceptionalities include:

- Learning difficulties such as [dyslexia](#), dyscalculia, and executive functioning difficulties. International research suggests that gifted students with these particular exceptionalities are statistically the most common group of twice-exceptional students⁶.
- [ADHD](#) or [autism](#)

- Sensory difficulties including blind/low vision, deaf/ hard of hearing, auditory or sensory processing differences
- Physical difficulties including developmental coordination disorder, cerebral palsy, and other physical disorders
- Emotional and mental health difficulties including anxiety and depression

It is worth remembering that the term 'twice-exceptional' may act as short-hand for multiple exceptionalities, such as a gifted student with both dyslexia and ADHD. It may also be the case that exceptionalities compound over time: for instance, a gifted student with dyslexia may also have anxiety.

What are twice-exceptional students like?

Twice-exceptional students are not a homogenous group. There is no universal set of identifying characteristics, as there is such a range of exceptionalities that might come under this umbrella term, but there are some common characteristics that teachers might notice in twice-exceptional students:⁷

- The abilities and qualities associated with giftedness appearing infrequently as 'flashes of brilliance' or at surprising times, as they may be masked by additional exceptionalities.
- The capacity and strong desire to learn in high interest areas, coupled with avoidance of areas of weakness.
- Very uneven achievement or inconsistent performance. For example, a student may verbally express great ideas but not follow through with them, or teachers may notice unusual creativity or originality, again particularly in conversations, that is not seen in written work.
- Performing well with complex or advanced ideas but relatively poorly on things considered as 'basics'. An example of this may be a high level of conceptual understanding in maths without reliable recall of basic facts and times tables.
- Big, intense emotions coupled with high emotional sensitivity, which may include strong expressions of frustration, anxiety, or stress.
- General disorganisation reflecting difficulties with executive functioning, including considerable difficulties with planning, identifying, and completing steps in a process, managing resources, and sustaining a focus on one task for a specific period of time, as well as difficulties with transitions between tasks or settings.
- Fatigue, often showing up as what parents know as '[after-school collapse](#)'.

Why is it important for teachers to know about twice-exceptional students?

Twice-exceptional students may be difficult for teachers to accurately or fully recognise. Their giftedness may mask or divert attention away from their additional exceptionality, so teachers may just address the giftedness and not the exceptionality, or vice versa, where the exceptionality over-shadows the giftedness. In the worst case scenario, neither the giftedness nor the exceptionality are fully understood.

Research in Aotearoa New Zealand unfortunately highlights that limited teacher understandings and confidence in providing for these students are key barriers to meeting the needs of these students⁸.

Specialist diagnoses or identification, such as accurate hearing assessment or assessment of attention difficulties, are often required, and as these assessments take place outside of educational settings, the information flow back to teachers and schools can be delayed, limited, or simply overly complex and clinical. Teachers can find it hard to interpret specialist reports and use the recommendations in these

in their classroom practice. Alongside these issues are the complexities of these students themselves, with unique and sometimes perplexing combinations of abilities and challenges. The impact of not understanding these students well is that teachers and schools find it hard to support them, which in turn can have a negative impact on the learning and wellbeing of this group of students⁹.

Supporting twice-exceptional students in classrooms and schools

There is a well-documented national and international lack of research into what works for twice-exceptional students. For instance, one recent review found fewer than 40 empirical studies into twice-exceptionality over a twenty-year period, and the vast majority of those focused on identification and characteristics rather than classroom-based practices¹⁰. Therefore, most practices used in supporting twice-exceptional students are extrapolated from theory and research, in which two key approaches are frequently highlighted.

Firstly, taking a **team approach** in working with this group of students is essential. Understanding and accepting that these students are complex means that teachers and schools need to work with a range of specialists¹¹. This helps to ensure early identification, provide flexible supports for neurodiverse students, meet the needs of gifted students, and improve education for those at risk of disengaging. The team around a twice-exceptional student is likely to include a range of specialists and allied professionals, including psychologists, audiologists, occupational therapists, speech language therapists, and counsellors. The team can also include specialist teachers, including those for deaf, vision-impaired, or gifted students. It is essential that families and, most importantly, students themselves are actively part of this team. Taking a team approach can also mean bringing in specialist expertise from out-of-school providers, such as the [New Zealand Centre for Gifted Education](#) and [Speld](#)¹².

Secondly, taking an **universal design for learning (UDL) approach** is a key strategy for inclusive education. An UDL approach ensures that the design of the learning environment and programme allows all students full access to learning. In practical terms, this involves specifically planning multiple and varied avenues for all students to engage in the learning environment, and to receive and respond to information. Many twice-exceptional students respond well to multimodal learning opportunities, rather than learning that is presented or represented primarily in writing. Assistive technologies are a fundamental support that can easily be part of a UDL approach, with speech to text (and text to speech) a simple starting point.

Alongside these broad approaches, three specific instructional strategies are commonly recommended:

Strengths-based strategies: The most effective and frequently mentioned instructional strategy for twice-exceptional students is to focus on developing strengths¹³. This does not remove the need for directly addressing any difficulties resulting from the additional exceptionality, but it does mean that students' strengths, abilities, and qualities are specifically identified and supported in a planned and consistent way. In practice, this means working closely with students (and all those working with them, using a team approach), to identify their particular strengths. Students often need help to specifically 'name' their strengths, and to distinguish these from their interests. For instance, a student might say they have a strength in Minecraft, but Minecraft is an interest, not a strength *per se*. The strengths that might be developed or fuelled by this interest include spatial reasoning, planning in 3D, visualising objects in space, and knowing how to combine objects.

Once strengths are identified and clearly articulated, teachers need to find ways to continue to develop them. Gifted students have the potential to achieve highly in their areas of strength, but it is essential that strengths are specifically developed as they may diminish over time without ongoing development.

To extend the Minecraft example, a teacher could plan a learning programme that connects maths, the arts, and digital technologies with deeper, more complex and more advanced content to further develop spatial reasoning and spatial relationships.

Similarly, working with students' interests gives a significant boost to [motivation](#), as interests are likely to build into passions and may provide opportunities to build strengths. For a student fascinated by dogs, a teacher could use dogs as a context for everyday learning opportunities in areas like maths, writing, and reading to boost motivation in a simple way. 'Open context' or 'BYO context' learning tasks, where students are invited to bring their own interests into the task, are another easy way for teachers to capitalise on students' interests. Interest- or strengths-based tasks are often offered as incentives for finishing or even participating in other work, but this should not be the case. Interest- and strength-based learning opportunities should be fundamental, not a reward.

Some of the more general recommendations for providing for gifted students can easily be incorporated into learning programmes with a UDL approach. These include enrichment as well as acceleration, where teachers move a group of students more deeply into topics as well as moving more quickly through simple content. Teachers can also take a more abstract and conceptual approach to content, which appeals to the preference of gifted students to understand the 'why' of everything, and there are ample tools to achieve greater depth and complexity¹⁴. Teachers can remove the 'ceiling' of learning with genuinely open-ended tasks. For instance, rather than asking for 'five pieces of information about the ANZACS, ask for 'intriguing or puzzling information'. Allowing for flexible pace, where students can easily move more quickly or slowly than others, is another common recommendation.

Social and emotional strategies: Another commonly recommended set of teaching strategies involve [social and emotional learning](#). These strategies are aimed at developing self-acceptance and social and emotional skills (such as strategies for managing frustration, or understanding and tackling big emotions). In the case of twice-exceptional students, they require explicit, direct teaching¹⁵, and are best taught in small like-minded groups rather than a whole class setting. They need to be an integral part of the support for twice-exceptional students¹⁶. Alongside this direct teaching, social and emotional coaching through specific situations is needed. This means that all who are part of the team around a twice-exceptional student know what strategies are being taught so they can also model and support them. These strategies should not be focused on blame or behavioural compliance, but instead on supporting students to consciously develop their own skills in this area.

A practical example may be small group teaching sessions, open to any who are interested or 'nudged' towards the sessions, and aimed at teaching and practising strategies for managing the big emotions that can be attached to winning and losing. The strategies taught in these sessions can be shared across the team working with twice-exceptional students, so that they can be modelled throughout the school day and students can be coached through using particular strategies as the need arises.

Executive functioning strategies: Teaching the specific skills of [executive functioning](#) is important for twice-exceptional students, because these skills may be delayed in development or lacking due to the nature of the particular exceptionality. Examples of these executive functioning skills include organisation (including even very basic organisation of the things needed for the school day), working memory, initiating a task, understanding the requirements of a task, breaking a task down into parts, recognising in advance which parts of a task might be difficult, and managing attention and emotion during a task. As an overarching strategy, the teaching of executive functioning skills has been empirically demonstrated to be effective for twice-exceptional students¹⁷.

Direct teaching of these skills is essential as part of the overall programme for twice-exceptional students. A very simple classroom example would be to pre-teach the use of a specific graphic organiser to a targeted small group, to use that graphic organiser with the whole class, and then to re-teach with the same small group and collectively reflect on the efficacy of this graphic organiser.

Putting supports in place when these skills are lacking is also essential. Supports can be very simple, such as giving an advance organiser of the time needed for parts of a task, reducing or removing distractions, providing additional sensory input to enhance attention, and supporting compensatory strategies, work-arounds, or 'life hacks'. An example of a simple classroom support for executive functioning is managing the 'attention-environment'. Teachers can invite students and specialists to collectively take a sensory 'stock-take' of the 'attention-environment' and make recommendations for how the environment can better support student attention. A deliberately lower stimulus environment can directly support executive functioning by 'freeing up' the working memory resources needed for executive functions.

Further reading

Te Kete Ipurangi. [Inclusive](#).

Te Kete Ipurangi. [Pacific giftedness](#).

Te Kete Ipurangi. [Twice-multi exceptional learners](#).

Ministry of Education (2012). [Gifted and talented students: Meeting their needs in New Zealand schools](#). Wellington: Learning Media.

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New Zealand Association for Gifted Children. www.giftedchildren.org.nz

Endnotes

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2 Duncan, S., Goodwin, C., Hasse, J., & Wilson, S. (n.d.). Neuroscience of giftedness: Physiology of the brain.

3 Bevan-Brown, J.M. (2009). Identifying and providing for gifted and talented Māori students. APEX, 15(4), 6-20.

4 Faaea-Semeatu, A. M. (2011). Celebrating gifted indigenous roots. In W. Vialle, Giftedness from an indigenous perspective. Selected papers from the 11th Asia Pacific Conference on Giftedness.

5 Gagné, F. (n.d.). Building gifts into talents: Brief overview of the DMGT.

6 National Association for Gifted Children (2009). Twice-Exceptionality White Paper.

7 Davidson Institute (2021). Twice-exceptional - definition, characteristics and identification; Speld (n.d.). Gifted and challenged.

- 8 Ng, S., Hill, M., & Rawlinson, C. (2017). Twice-exceptional learners in New Zealand schools: Teacher perspective. *Set: Research Information for Teachers*, 3, 3-8.
- 9 Ng, Hill, & Rawlinson, 2017.
- 10 Foley-Nicpon, M., Allmon, A., Sieck, B., & Stinson, R.D. (2011). Empirical investigation of twice-exceptionality: Where have we been and where are we going? *Gifted Child Quarterly* 55/1, 3-17.
- 11 In New Zealand, a team approach is specifically endorsed in the Ministry of Education (2012) 'handbook' about gifted students, and more recently in the Learning Support Action Plan (2019), which provides a strong foundational policy for this. The Learning Support Action Plan sets out key priorities for meeting the needs of all students with additional learning needs, which obviously includes twice-exceptional students. The role of the Learning Support Coordinator has been created as part of this plan and their remit is to build teams around students.
- 12 The New Zealand Centre for Gifted Education offers MindPlus programmes for gifted students and twice-exceptional students, as well as professional learning support for teachers and schools, while Speld offers assessment and tutoring, along with professional learning for teachers.
- 13 Winebrenner, S (2002). *Strategies for teaching twice-exceptional students*. Davidson Institute.
- 14 J. Taylor Education. *Depth & complexity framework*.
- 15 Nielsen, M.E., and Higgins, L.D. (2005). The eye of the storm: Services and programs for twice-exceptional learners. *Teaching Exceptional Children* 38(1), 8-15.
- 16 Postma, M. (2021). What does twice exceptional mean? Identifying and nurturing gifted children with ADHD.
- 17 Foley-Nicpon, et al., 2011.

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