

How schools can identify and provide for high-ability students

Q&A with John Munro

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Introductory notes

The content of the webinar is based on a model of high ability learning in the classroom. These notes unpack the model. Dr Munro's responses to the questions raised are based on this model.

What does gifted knowing and learning look like?

Learning in the classroom requires students to interpret and convert teaching information to knowledge. Students differ in how they do this. Most students interpret the teaching literally. Their new knowledge is essentially programmed by the teaching.

Gifted students interpret the teaching information differently. Their interpretations contain more ideas than what was in the teaching. It has more inferred concepts, linked into more complex relationships. These are organized around one or more inferred main or big ideas, sometimes hierarchically. Some of the inferred relationships may be logically inaccurate.

Their interpretations are speculative; some of the relationships express options and possibilities. They tell the students how to test or investigate their interpretations, for example, by asking questions, researching or trialling. The students are motivated intrinsically to do this, and when given this opportunity, they can modify, correct, rationalise and update their interpretation. It becomes 'validated knowledge' for them; they now 'know more'.

They form these interpretations by thinking in particular ways. It includes linking with topics not mentioned in the teaching information and synthesising ideas from these topics with the teaching content. This is part of a gifted learning profile.

Their interpretations have the characteristics of an 'intuitive theory of action' (ITA). It is their richer, deeper understanding of the inferred possibilities, that leads to talented outcomes.

Talented outcomes are not possible without one or more ITAs.

Gifted students form ITAs about information both in and beyond the classroom. They are more prepared to share them when they believe the context or climate permits this and will value and respect their interpretations.

Teachers can collect and evaluate students' ITAs. You can compare and match the relationships in a student's understanding with what was in the teaching information. How far an ITA at any time differs from the teaching indicates the extent of high ability knowing and thinking used.

Some gifted students experience emotional and social issues because they think in this way. They infer possible events that might occur. These can cause anxiety, particularly when they believe they lack the ability to cope with them. They may receive negative feedback from their peers and others who don't form their interpretations and do not value or respect how they see things.

Forming and validating ITAs explains high IQ and intelligence. Most IQ measures assess what students have learnt. These students have learned more than their same age peers, because they have been self-teachers. They have been forming, trialling and modifying ITAs about the world from infancy. This leads to a richer and a broader knowledge base.

What are the different ways in which students can be gifted?

Students can be gifted in multiple ways. These have been categorized in various ways. Sternberg's framework identifies three main gifted learning profiles: the academic, creative, and practical types. These profiles are based on how we store knowledge in our brain; in symbolic, verbal ways, in imagery ways in specific contexts, and in action sequences that we use to solve problems. The profiles differ in the intuitive theories they form.

Academic or verbal high ability comes from knowledge that is organised in text-like ways. It comprises concepts that are linked into relationships. These in turn are linked into more general meanings and organised around topics or themes within a genre.

Knowledge in all subjects can be organized in this way. It includes the symbolic systems used in maths, music, poetry, art, information technology and sport. The symbolic systems differ, and verbal giftedness is often domain specific. Symbolism in art, for example, operates differently from symbolism in music or maths.

Verbally gifted students learn efficiently at school and use their knowledge at a high level. They form ITAs by inferring, analysing and generalizing in text-like ways. They are the 'school-house gifted', 'analytically intelligent'. They show their gifted learning capacity on achievement tests.

A second type of giftedness is imagery-spatial or creative giftedness. Its contents are images, linked in time and space in experiences. These students think at a high level by manipulating images spatially and temporally. They infer how images in two or more experiences are similar or match; they make fluid analogies and combine them to form high-level imagery possibilities ITAs.

Their intuitive theories are unique to them; creative, lateral, or unusual. They see shared features and possibilities that other people don't see. The images can be visual, auditory or action images in context.

Most great discoveries in the sciences and arts came from this learning profile. It has been called 'visual-spatial' giftedness and creative-productive giftedness.

A third type of giftedness is practical or performance giftedness. Its contents are action sequences. Students with this profile show an advanced ability to think, learn and understand ideas in practical ways. They use their action knowledge in novel ways to solve problems and form original productions. Practical giftedness leads to innovative 'problem-solving' talent.

They generate intuitive theories by inferring how a set of actions that works for one type of purpose can be modified for other purposes. This leads to creative, innovative, or talented outcomes. The actions may be about using paint, a musical instrument, gymnastic movements, a science or technology tool, ball skills, or applying information technology to solve problems.

Some gifted students have co-occurring learning issues that mask their gifted learning capacity, the 'twice exceptional' or 'dual exceptional' learners. The co-occurring issues can be emotional, social, or cognitive and often lead to academic underachievement, social and behavioural problems, and a disengagement from regular classroom participation. Some show 'asynchronous development' - advanced development in some areas and immature development or underachievement in others. Some become alienated from regular schools.

Who are the high-ability students who are least likely to be identified by their schools/teachers?

These are the students who are imagery spatial gifted, practically gifted, or twice exceptional. All teaching makes assumptions about how students learn. All classrooms provide specific opportunities for students to show their knowledge and thinking. When assumptions made do not match how the students learn, the students are less likely to engage or be prepared to trust the classroom with what they know or think.

This applies particularly to imagery spatial, performance and twice exceptional gifted students. Their unique, creative, lateral, or unusual interpretations are disconcerting or perplexing for teachers. They need alternative opportunities for displaying their knowledge and also need to see that the classroom recognises and values what they know.

Contemporary classrooms are largely verbal. Many practically gifted students show their high-level thinking by acting, innovating and producing, and by solving problems. They often don't get the opportunity to display their knowledge in these ways in regular classrooms.

Twice exceptional students need the classroom to recognise all that they do know, and how they learn best. They need the opportunity to show what they know in ways that work for them first and then to learn how to display their knowledge in conventional ways.

There are key benefits for making sure that these students are recognised. The interpretation they bring to a particular topic can enrich and broaden the understanding and knowledge of all students. These are the students who as adults have the potential for contributing substantially to developments in our culture.

Risks can arise if these students are not identified by schools. First, they are likely to disengage from formal education. This is a loss to them personally, to the classroom community and more generally. Second, they can become behaviour and management challenges in the classroom.

What are some strategies schools/teachers can use to accommodate these students?

High level outcomes come from students' ITAs about the teaching. These have more knowledge, skill and possibilities and options than the outcomes of regular students. Students can convert their ITAs to talented outcomes when they have the opportunity. Without the ITA, you don't get high level outcomes, but outcomes that are programmed by the teaching.

Schools can improve identification practises when teachers have the professional knowledge necessary to identify instances of gifted understanding and outcomes and when the classrooms provide high ability students with the opportunities to display them.

Many schools use achievement and cognitive tests to identify gifted students. These identify some high ability students. My focus here is on identification by monitoring how students interpret the teaching. This provides invaluable in situ formative assessment of students' learning potential.

Leading Improvement for Gifted and Talented Students: High-impact strategies to improve high-level outcomes unpacks how regular curriculum, teaching, and classroom culture can be differentiated to optimise high level outcomes for all learning profiles. It provides schools with a systematic framework and professional learning map for evaluating and improving current provision.