

## Interpreting Intelligence: Profiles and Performance

### Conference theme: Differentiating to maximise achievement:

Differentiation of activities, environment and curriculum is an important aspect in establishing appropriate social and learning contexts in which **gifted** children can thrive to maximise achievement.

What does 'gifted' mean?

**IS 'GIFTEDNESS' A DEFINABLE AND IDENTIFIABLE CONSTRUCT?**

Does it matter?

How we define giftedness directly relates to how we identify giftedness and directly relates to how we cater for giftedness.

How we define giftedness depends on how we define intelligence.

DEFINING ACHIEVEMENT.

**I think and think for months and years. Ninety-nine times the conclusion is false. The hundredth time - I am right** **Albert Einstein**

What does the word 'achievement' conjure for you?

James Delisle, Prufrock Press, 1994.

"The best description I ever heard of the word 'lazy' is "people who are not motivated in ways you want them to be." The same description could also be given to the word 'underachiever', one of the most overused and misapplied terms of our field."

What is underachievement?

"Underachievement is an adult term used to describe...

***a set of troublesome child behaviours that don't match some preconceived EXPECTATIONS of the level at which a gifted child is supposed to perform.***"

Underachieving gifted students are often not particularly concerned about their underachievement except for the fact that it may ***make their parents unhappy***

## Interpreting Intelligence: Profiles and Performance

**In the light of these questions regarding giftedness & achievement... this presentation will look specifically at interpretations of intelligence and types of tests used for identification. Different profiles of ability will be examined in terms of how these may translate into academic performance.**

**How do we define intelligence?**

- Ability to learn about, learn from, understand, and interact with one's environment

- Capacities for abstract thought, reasoning, planning, problem solving, communication and learning

### **Measuring intelligence/giftedness?**

The Stanford-Binet (SB5) and the Wechsler (WISC-IV) scales were founded on the conception of intelligence as abstract reasoning (**g**).

Research indicates that the Factors or Indexes with the richest loadings on general intelligence (**g**) are the most useful for identifying the gifted.

### **Fitting tests to Programs**

It is important to use a test that is compatible with the program offered.

If the program is a gifted classroom, emphasising conceptual complexity in discussion, debate, and in-depth writing, a nonverbal test may not identify the children who fit best

### **Screening tests:**

#### **Ravens Progressive Matrices**

A measure of educative ability – the ability to make sense and meaning out of complex or confusing data; the ability to perceive new patterns and relationships, and to forge constructs which make it easy to handle complexity. generally a nonverbal test of visual abstract reasoning and pattern recognition.

#### **The Slosson Intelligence Test (SIT)**

serves as a quick estimate of general verbal cognitive ability or index of verbal intelligence designed to facilitate the screening of children at risk (i.e., of educational failure) and to identify children who may be appropriate candidates for deeper testing services (such as gifted children).

The Cognitive Areas of Measurement include: Vocabulary, General Information, Similarities and Differences, Comprehension, Quantitative, Skills and Auditory Memory.

### **Testing - role in maximising potential**

§ To help identify intellectual strengths and weaknesses

§ To assist in educational planning for parents/teachers

§ To determine necessary adjustments in school curriculum and school placement (e.g., early entry, acceleration)

§ To determine eligibility for specific programs

### **Intelligence Testing**

#### **Criteria for “useful” psychometric tests:**

Validity–extent to which a test measures what it is intended to measure

Reliability–extent to which a test yields a consistent score

Standardisation–uniform procedures for administering and scoring a test, as well as creating norms

### **IQ Tests**

Tests vary in their content, their appropriateness with different populations, and their usefulness as a basis for educational requests

A good tester will choose tests carefully to document the strengths of the child, explore any relative weaknesses and demonstrate need for interventions

## **Assessing gifted kids**

Rapport-building is essential

Gifted students will not give their best when they do not trust or respect the individual sitting across from them

Gaining that trust and respect can make or break the assessment, greatly influencing the scores achieved on the test

Personality issues that can affect testing.

- Perfectionism, unwillingness to take risks, horror of being wrong
- Meticulousness - refusal to give up on a question
- Anxiety - an understanding of the weight placed on the test by parents and school
- Reflective and divergent thinking
- Wariness of being patronised
- Desire to blend in - underperforming to avoid identification

Other ways of identifying gifted students....

Looking for Creativity

Teachers often:

- overlook disruptive or unconventional creative students (Davis & Rimm, 1994).
- prefer gifted children who are low in creativity (Anderson, 1961; Getzels & Jackson, 1958)
- identify students who are achievers & teacher pleasers (Davis & Rimm, 1994; Oliphant, 1986; Rimm & Davis, 1976; Ritchie, 1980; Robinson, 1980).
- see energetic & unconventional students as having ADHD (Cramond, 1994).
- identify aloof, introspective, 'vagued-out' children as having ASD

## **Psychometric Tools**

### **Stanford Binet 5 (SB5)**

The SB5 provides comprehensive coverage of five factors of cognitive ability:

- Fluid Reasoning (FR)
- Knowledge (KN)
- Quantitative Reasoning (QR)
- Visual-Spatial Processing (VS)
- Working Memory (WM)

### **WISC-IV**

The WISC-IV provides comprehensive coverage of four Indexes of cognitive ability

- Verbal Comprehension Index
- Perceptual Reasoning Index
- Working Memory Index
- Processing Speed index

### **What is not measured:**

- Academic skills (e.g., reading ability, spelling ability, etc)

- Learning disabilities (e.g., dyslexia, ADHD, ODD, ASD, etc)
- Fine and gross motor skills
- “Emotional intelligence” (so-called EQ)
- Creativity
- Musical talent
- Sporting prowess

### **SB5 Factors.**

#### **Fluid Reasoning (FR)**

•Measures:

§Ability to solve novel problems

§Inductive and deductive reasoning skills

§Conceptual understanding

**Individuals with this strength may:**

§ Appear to think through problems and grasp concepts more quickly

§ Search for associations and relationships between concepts – have a thirst for “big ideas”

#### **Knowledge (KN)**

•Measures:

§General knowledge (science, nature, geography)

§Accumulated knowledge of concepts and language

§“crystallised ability” – learned material acquired and stored in long-term memory

**Individuals with this strength may:**

- Be highly proficient at absorbing & retaining information
- Rely on a large store of information as a basis for completing tasks
- Have an excellent vocabulary
- Have a large general knowledge – may be collectors of facts and/or things
- Love to share knowledge
- Read early and/or avidly

#### **Quantitative Reasoning (QR)**

Measures:

§Understanding of number concepts, number patterns & mathematical relationships

§Applied problem-solving & reasoning skills, rather than specific math knowledge

§Use of logic, algebraic principles, systems of equations to solve problems

**Individuals with this strength may:**

§ Show advanced mathematical reasoning ability

§ Pick up new problem-solving techniques quickly

§ Enjoy thinking about mathematics in a more abstract way (e.g., preference for problem-solving, algebra or geometry rather than concrete number work)

#### **Visual-Spatial Processing (VS)**

Measures:

§Ability to visualise and analyse patterns, relationships & spatial orientations

§Understanding of position and direction

**Individuals with this strength may:**

- § Demonstrate an advanced ability to manipulate abstract visual concepts
- § Be able to see relationships or the whole among diverse pieces of a visual display quickly
- § May create mental images and drawings to help think through problems

**Working Memory (WM)**

Measures:

§ Skill at inspecting, sorting & transforming diverse information in short-term memory

§ Maintenance of information in face of distraction

**Individuals with this strength may:**

- § Have good memories for details & may be able to juggle several small tasks at once
- § Be able to stay focused on duties they find engaging & interesting

**WISC –IV:****VCI (Verbal Comprehension)**

- a measure of *verbal concept formation, verbal reasoning, and knowledge acquired from one's environment*
- Most reliable of 4 indexes (.94)
- INF is supplemental – less emphasis on acquired knowledge

**PRI (Perceptual Reasoning)**

- a measure of *perceptual and fluid reasoning, spatial processing, and visual-motor integration.*

**WMI (Working Memory)**

- This is the ability to temporarily retain information in memory, perform some operation or manipulation with it, and produce a result.
- Involves *attention, concentration, mental control, and reasoning*
- Essential component of other higher-order cognitive processes

**PSI (Processing speed)**

- a measure of child's ability to correctly scan, sequence, or discriminate simple visual information
- Faster processing may conserve working memory resources
- This index also measures *short-term visual memory, attention, and visual-motor coordination*

**Problems with WM tasks**

Gifted children often show a preference for meaningful test materials, and may not perform well on short-term memory tests or other tasks that utilise non-meaningful material.

They usually perform so much better with meaningful material that their scores with non-meaningful material are difficult to interpret.

### **Problems with PS tasks**

Test authors have wrongly assumed gifted children are fast processors. Some are very quick; others are reflective or perfectionistic, slowing their speed. Wasserman (2006) reported that “over 70% of the students applying for gifted placement have Processing Speed Index scores in the average range or below” (Wasserman, 2006, p. 2).

### **Solutions...**

For the WISC-IV - Use the GAI - the General Abilities Index

For the SB5 - Use the GCS - Gifted Composite Score

### **Percentile ranks**

58<sup>th</sup> %ile = better than 58% of age peers = top 42% of age peers

86<sup>th</sup> %ile = better than 86% of age peers = top 14% of age peers

99<sup>th</sup> %ile = better than 99% of age peers = top 1% of age peers

99.6<sup>th</sup> %ile = better than 99.6% of age peers = top 0.4%

### **Beyond the Numbers...**

Your child's intensity, sensitivity and personality will also impact on learning in the classroom, socialising with friends and on interactions with family members

#### **•Asynchronous development: Columbus Definition, 1991**

Giftedness is asynchronous development in which advanced cognitive abilities and heightened intensity combine to create inner experiences and awareness that are qualitatively different from the norm.

This asynchrony increases with higher intellectual capacity.

The uniqueness of the gifted renders them particularly vulnerable and requires modifications in parenting, teaching & counselling in order for them to develop optimally.

#### **• Overexcitabilities - intensities**

Kazimierz Dabrowski a Polish psychologist, saw overexcitabilities (OEs) as inborn intensities indicating a heightened response to stimuli.

They are expressed in increased sensitivity, awareness and intensity in five domains - Psychomotor, Sensual, Intellectual, Imaginational and Emotional.

Overexcitability - premises

- OEs are inborn traits & can't be unlearned!
- They can be 'managed'.
- Acceptance of children's sensitivity and intensity provides validation and helps free them from feelings of 'weirdness' and isolation.
- They are not an excuse for poor behaviour or a mask for a learning difficulty

**Daniels, S., & Piechowski, M. M. (2009). Living with Intensity.**

“Gifted children and adults are often misunderstood. Their excitement is viewed as excessive, their high energy as hyperactivity, their persistence as nagging, their imagination as not paying attention, their passion as being disruptive, their strong emotions and sensitivity as immaturity, their creativity and self-directedness as oppositional.”

**Psychomotor/physically reactive**

- energetic
- restless
- fidgety
- always active mentally
- very expressive, gestures animatedly

Olivia Wilde – actress, interviewed by Joe Donnelly for Flaunt, Fall 2010

“...when I was a kid, I had all this unfocused energy that would come out in bouts of excitement or rage or in the form of a really overactive imagination, constantly coming up with alternate realities. My energy was such that I think that if I had other parents, I quite possibly would have been medicated. I was really frenetic. [And, yes, those big hands are flying around as she speaks.] The theater really calmed me and focused me, and to this day, I don’t think I could live without it. It’s my therapy.”

**Imaginational-Creative**

- *Loves daydreaming*
- *Has imaginary worlds and creates imaginary friends*
- *Mixes truth and fiction*
- *Creative, inventive*
- *Divergent thinking*
- *Has vivid recall of images in dreams*

**Emotional-affective**

- Is extremely empathetic and compassionate
- Prefers one-on-one play with a best friend
- Has strong feelings of joy, rage, excitement and/or despair
- Can feel different from age peers
- Can be perfectionistic

**Intellectual-cognitive**

- Loves to ponder
- Hates unfairness and injustice
- Questions everything
- Has an exceptional memory
- Loves to solve problems and develop new ideas
- Likes to dig beneath the surface of issues

**Profiles and performance**

Add intensity and sensitivity to ability and a child’s profile takes on a whole new dimension...

- Visible gifted children are more likely to be catered for through academic interventions
- Invisible gifted children are more likely to become more and more frustrated as their needs are undiscovered and unmet

### **Trickiest profiles in the classroom**

- High FR/VS with learning disabilities or learning difficulties
- High FR/VS with creative divergent thinking style

Sally Gardner (author)

“It wasn’t that I was naughty, ... No, my problem was much bigger, and went unrecognized, misunderstood and undiagnosed until I was about 12, when the term WORDBLIND was first used to describe my condition – I couldn’t read, or write, my brain wasn’t like other peoples. It had been compared to a sieve a description that I liked a lot and hoped that it might be an exit pass from having to ever go to school again.

Dreaming the impossible has led me to find something I love doing and make my living from. I am in the five percent of severely Dyslexic people. It will never go away, but these days I wear it with pride.”

### **Conclusions**

- An IQ test is an objective, standardised assessment of intellectual aptitude that can provide one piece of valuable information to help differentiate education for gifted children
- An IQ must be used in conjunction with other information to add to an overall profile of an individual child
- Giftedness comes in many and varied forms and is more than just an IQ score
- Gifted children are a unique population with unique needs
- How we define giftedness is important to how we identify gifted students and how we cater for them, differentiating according to degree of need
- How we perceive achievement is important to how we manifest and modify our expectations of gifted students and differentiating to promote student-led achievement is a subtle skill