Twice Exceptional Children

Dr Yariv Doron, 2017
Twice Exceptional
Giftedness

- Gagné (2008) defined gifts as “the possession and use of outstanding natural abilities, in at least one ability domain, to a degree that places an individual at least among the top 10% of age peers”.

- He defined talents more specifically as the outstanding mastery of systematically developed abilities, called competencies (knowledge and skills).
**Terminology**

**Giftedness**

- For the purpose of giftedness, the mere IQ measure is not always relevant. It is only a rough measure of one’s *cognitive potential*, and not necessarily his/her actual performance.

- Plus – being “exceptional” can be manifested in sports, art, cooking, etc. and not just in the classroom.

- Being “Gifted” is not always a gift.. So perhaps the use of “exceptional” will capture those kids’ essence in a better clarity.
Disability

According to the WHO:

- Disabilities is an umbrella term, which includes:
  - An impairment: a problem in body function or structure;
  - An activity limitation: a difficulty encountered by an individual in executing a task or action;
  - A participation restriction: a problem experienced by an individual in involvement in life situations.

- Disability is thus reflecting the interaction between features of a person and features of the society in which he or she lives.
Terminology

Disability

According to the American IDEA Act (Individuals with Disabilities Education Act):

- A child with a disability means a child evaluated as having mental retardation, a hearing impairment (including deafness), a speech or language impairment, a visual impairment (including blindness), a serious emotional disturbance (referred to in this part as “emotional disturbance”), an orthopaedic impairment, autism, traumatic brain injury, any other health impairment, a specific learning disability, deaf-blindness, or multiple disabilities, and who, by reason thereof, needs special education and related services.
The term refers to a child who is showing both giftedness and a “disability”, at the same time.

Or put it simply – the child is both highly-able and dis-able at the same time.
Twice Exceptional

A graphic representation of what it truly means to be twice exceptional
Twice Exceptional Famous People

Walt Disney - Dyslexia
Eisenhower - Dyslexia
Thomas Edison – Dyslexia and ADHD
Robin Williams - ADHD
Stevie Wonder - Blindness
Beethoven - Deafness
Why is it a unique problem?

Giftedness can mask disabilities, while disabilities can mask giftedness.
Why is it a unique problem?

Difficult to diagnose, and even more difficult to attend to.
## Typical characteristics of twice-exceptional children

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Deficits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superior vocabulary</td>
<td>Poor social skills</td>
</tr>
<tr>
<td>Advanced ideas and opinions</td>
<td>High sensitivity to criticism</td>
</tr>
<tr>
<td>High levels of creativity and problem-solving ability</td>
<td>Lack of organizational and study skills</td>
</tr>
<tr>
<td>Extremely curious, imaginative, and inquisitive</td>
<td>Discrepant verbal and performance skills</td>
</tr>
<tr>
<td>Wide range of interests not related to school</td>
<td>Poor performance in one or more academic areas</td>
</tr>
<tr>
<td>Penetrating insight into complex issues</td>
<td>Difficulty with written expression</td>
</tr>
<tr>
<td>Specific talent or consuming interest area</td>
<td>Stubborn, opinionated demeanor</td>
</tr>
<tr>
<td>Sophisticated sense of humor</td>
<td>High impulsivity</td>
</tr>
</tbody>
</table>
The Neurology of Learning Disabilities
Types of Learning Disabilities

- **Dyslexia**
  A language and reading disability

- **Dyscalculia**
  Problems with arithmetic and math concepts

- **Dysgraphia**
  A writing disorder resulting in illegibility

- **Dyspraxia (Sensory Integration Disorder)**
  Problems with motor coordination

- **Central Auditory Processing Disorder**
  Difficulty processing and remembering language-related tasks

- **Non-Verbal Learning Disorders**
  Trouble with nonverbal cues, e.g., body language; poor coordination, clumsy

- **Visual Perceptual/Visual Motor Deficit**
  Reverses letters; cannot copy accurately;

- **Language Disorders (Aphasia/ Dysphasia)**
  Trouble understanding spoken language; poor reading comprehension
Language  
Emotion  
Comprehension  
Expression

Logics  
Construction  
Understanding 3D Math

Left lobe

Right lobe
Language Disorder

Language
Emotion
Comprehension
Expression

Logics
Construction
Understanding 3D
Math

Dyscalculia

Left lobe

Right lobe

??
Language Processing
My eyes see a sentence

Separate the words

Process each word/sentence for:

- Vocabulary
- Emotion
- Facts
- Association
- Grammar

Comprehension
"Harry was afraid"

1. My eyes see a sentence
2. Separate the words
3. Process each word/sentence for:
   - Vocabulary
   - Emotion
   - Facts
   - Association
   - Grammar
4. Comprehension
What can possibly go wrong ?!
Corrective lenses
ADHD and the case of the dancing letters

Irlen lenses
<table>
<thead>
<tr>
<th>Table</th>
<th>2 bits</th>
<th>5 bits</th>
</tr>
</thead>
<tbody>
<tr>
<td>T - A - B - L - E</td>
<td>(Building Blocks)</td>
<td>Leads to “Reading Fatigue” and reading avoidance</td>
</tr>
</tbody>
</table>
If you can’t grasp a Word as an Entity (or its phonetics), then spacing has no meaning....

A simple, yet efficient marker for a learning disorder!
Automated Brain

- In order to read in a proficient manner, the brain needs to reach a maturity and try not to read the word at all...

- Basically we would like for the brain to identify the word as a picture

("...it doesn’t seem right... am I missing an L ?!")
Dyslexia

- NO identifiable causes in most cases
- Might be caused by:
  - Hereditary
  - Teratogenic
  - Medical
  - Environmental

- 6-8% (estimated) in the school population
- 15% in the total population
Characteristics

Students who have learning disabilities may exhibit a wide range of traits, including:

- problems with reading comprehension
- spoken language
- writing
- reasoning ability
- Hyperactivity
- Inattention
- perceptual coordination problems may also be associated with learning disabilities.
Symptoms of Dyslexia

- Problems with grammar, such as learning prefixes or suffixes.
- Tries to avoid reading aloud in class.
- Doesn't like reading books.
- Performs below their expected level, mainly in Language-Based subjects.
Diagnosis

- In NZ requires a psychological assessment, though the ministry of education will not be able to provide it in all of the cases.

- The Americans are actually keeping it simple and elegant (RTI):
  - Learning disabilities can be characterized by a discrepancy between a student’s ability and his or her achievement in areas such as reading, writing, mathematics, or speaking. This option is up to the individual school, or agency doing the assessment (American Ministry of Education)
  - RTI = Response to Intervention, rather than pursuing costly diagnostic procedures.
Some solutions

- **Alternative Education** – MOE funded or private
- **Audio books** – a simple, yet highly effective way to overcome written-language processing
- Keeps on training the language centres with words, meaning, vocabulary, imagination, etc.
Dyscalculia

a mathematical disability in which a person has a difficult time solving arithmetic problems and grasping math concepts.
Dyscalculia-Symptoms

- Inconsistent results in addition, subtraction, multiplication and division.
- Poor mental math ability.
- Poor with money and credit.
- Poor execution of abstract mathematical reasoning.
- Poor understanding of 3D computation, geometry, etc.
Dysgraphia

a writing disability in which a person finds it hard to form letters or write within a defined space.
Dysgraphia - Symptoms

- Strange wrist, body, or paper position
- Talking to self while writing, or carefully watching the hand that is writing
Dysgraphia

- Generally illegible writing (despite appropriate time and attention given the task)

- Inconsistencies: mixtures of print and cursive, upper and lowercase, or irregular sizes, shapes, or slant of letters

- Unfinished words or letters, omitted words
ADHD in a nutshell
Left lobe

Right lobe

Executive Function
Executive Functions

A broad array of classes, used by the brain to manage and prioritise stimulus and responses (I/O), via a set of functions which include: attention, timing, planning, prioritising, modulation, etc.
The Executive Hall
The Executive Hall
Splitting of attention

- Driving
- Radio
- Cell phone
- Kid in the back

Teacher

- Amy is talking
- I have to pee
- Bird
Planning

1 ➔ 2 ➔ 3 ➔ 4 ➔ 5 ➔ 6 ➔ 7 ➔ 8 ➔ 9

1 ➔ 2 ➔ 3 ➔ ??? ➔ 6 ➔ 7 ➔ 8 ➔ ???

Play the XBOX ?!
EXECUTIVE

Response Inhibition

Output
Let’s connect the dots...
## Categories of 2e students

<table>
<thead>
<tr>
<th>Gifted students who are labelled as underachievers</th>
<th>Gifted students with severe learning disabilities (LD)</th>
<th>Students whose giftedness and learning disability overshadows each other</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Their learning difficulties are often attributed to personality and character development problems</td>
<td>• They are enrolled in special education programs designed for LD students;</td>
<td>• Presents as an overall mediocre academic performance due to this “mutual compensation”</td>
</tr>
<tr>
<td>• Eventually, reaching the point where they are linked to a disability</td>
<td>• Therefore, their giftedness is usually ignored</td>
<td>• These students are not identified as gifted and,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• as a consequence, they are not selected for gifted educational programs most of times.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• “fall through the cracks” of the educational system</td>
</tr>
</tbody>
</table>
2e – The Problem

- By definition, 2e students will be simultaneously developmentally behind and ahead of their age peers and present a complex asynchronistic pattern of learning need.
2e – The problem

- 2e are exposed to underachievement and at risk at being school drop-out (20%)
- Considering their potential – this is quite concerning.
- Twice exceptional children can also exhibit behavioural issues in the classroom, as well as develop clinically significant anxiety, depression, etc.
- Based on recent report to MoE (NZ):
  - “…Where children have been identified, they have been stuck between the health and education systems, and very few have ended up with access to publicly funded services”
2e – The Problem

- One of the biggest issues is the actual diagnosis.
- IQ tests are heavily relying on language skills.

- One possible solution is to focus on the “Exceptional Qualities” of the child, rather than zooming in on the IQ.
Possible Solutions
IN NO SPECIFIC ORDER
2e – Possible solutions

- It takes a team: Baldwin, Omdal, and Pereles (2015) outline a **team problem-solving approach** with the student, family, and a team of professionals that may include general education teachers, special and gifted education teachers, administrators, related service providers, counsellors, and specialty area teachers.

- This multidisciplinary team works together while “. . . (a) defining areas of need, (b) collecting and analysing data, (c) implementing a plan and (d) evaluating the progress” to understand the diverse array of strategies necessary to meet the unique needs of the 2e student.
Compacting is the process of allowing highly capable students to demonstrate their previous mastery of some of the required curriculum. Compacting also occurs when students are allowed to demonstrate that they need less time than their peers to learn new material.

Differentiation allows for planning a different plan for different students, based on their unique set of skills and weaknesses.

One way to design for differentiation is through having pre-assessment opportunities which will be made available for students who volunteer to demonstrate prior knowledge and mastery of concepts, ideas, and skills.
2e – possible solutions

- Pursue systematic diagnostic approach, not necessarily based on costly psychological assessments.
- Having genuinely quiet spaces to work in, enabling children to concentrate. Alternatively, noise cancelling earphones.
- Grouping children with similar strengths and challenges together – providing like minds, peer support, and reduces isolation.
2e – possible solutions

- Emphasizing process over product, as they benefit from celebrating real learning (process), not just achievement (product).

- Alternatives to timed tests – allow 2e students extra time to compensate for their processing speed. Or base your assessment on projects and submission.
2e – possible solutions

- **Communities of schools** – primary and secondary schools working in partnership to design and promote teaching and assessment resources, science fairs, etc.

- Taking time to **genuinely listen to children** when they talk about their challenges and frustrations – don’t assume they are lazy, or disrupting the class for no reason.
National Standards don’t necessarily work for these kids. Alternatively – you may want to depend on an individual teacher’s ability to test and track the individual’s progress.

Utilize Reader/Writer assistance (requires funding) or embrace unique technologies (cost effective), to allow students maximize their ability to show their “true” strength and competency.

Provide more professional development for teachers on the needs of children with SLDs
Treatment strategies

SGC, CAMHS, Paed, CAMHS, GP
Therapy (1:1, Family), Medication
Learning
RTL B, Private, Social
2e - Treatment strategies

- Therapy
- Enrichment
- Stimulation
- Medication
- Social
- Learning
Assistive Technologies
Welcome to iWordQ

We have writing.
Begin a document by tapping the Folder icon in the menubar.

iWordQ has two modes: use: writing and reading.

In Writing mode a simple text editor is used to write and take advantage of word prediction, abbreviation-expansion and speech feedback features. Spell-check and dictionary access is included. Use speech recognition with newer iPads.

Text documents are saved automatically and are retrieved from the File menu. Dropbox support is included for sharing documents across systems. Documents may also be shared through several other connections.

In Reading mode, text is displayed in a more visually pleasing manner designed to improve comprehension. This is useful for proofreading, reading text aloud, and casual reading. Here you can review individual sentences, words, read/listen to your document by manual stepping, or read/listen to your document continuously.

A novel Reading mode option enhances the text by presenting the text as a sequence of segments that allows you to focus on one segment at a time. This is intended to mimic a good public speaker, where pauses are inserted in places that are not necessarily standard clauses, but rather mid-clause break points, for phrasing, emphasis and provision of time for the comprehension of what has just been said.

Use **Speak** to review by sentences or by words with word-by-word highlighting.

In **Reading mode**, tap an individual word or **swipe** across multiple words to hear them spoken.
OpenDyslexic

OpenDyslexic is a new open source font created to increase readability for readers with dyslexia. The typeface includes regular, bold, italic, and bold-italic styles. It is being updated continually and improved based on input from dyslexic users. OpenDyslexic is free for Commercial and Personal use.

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