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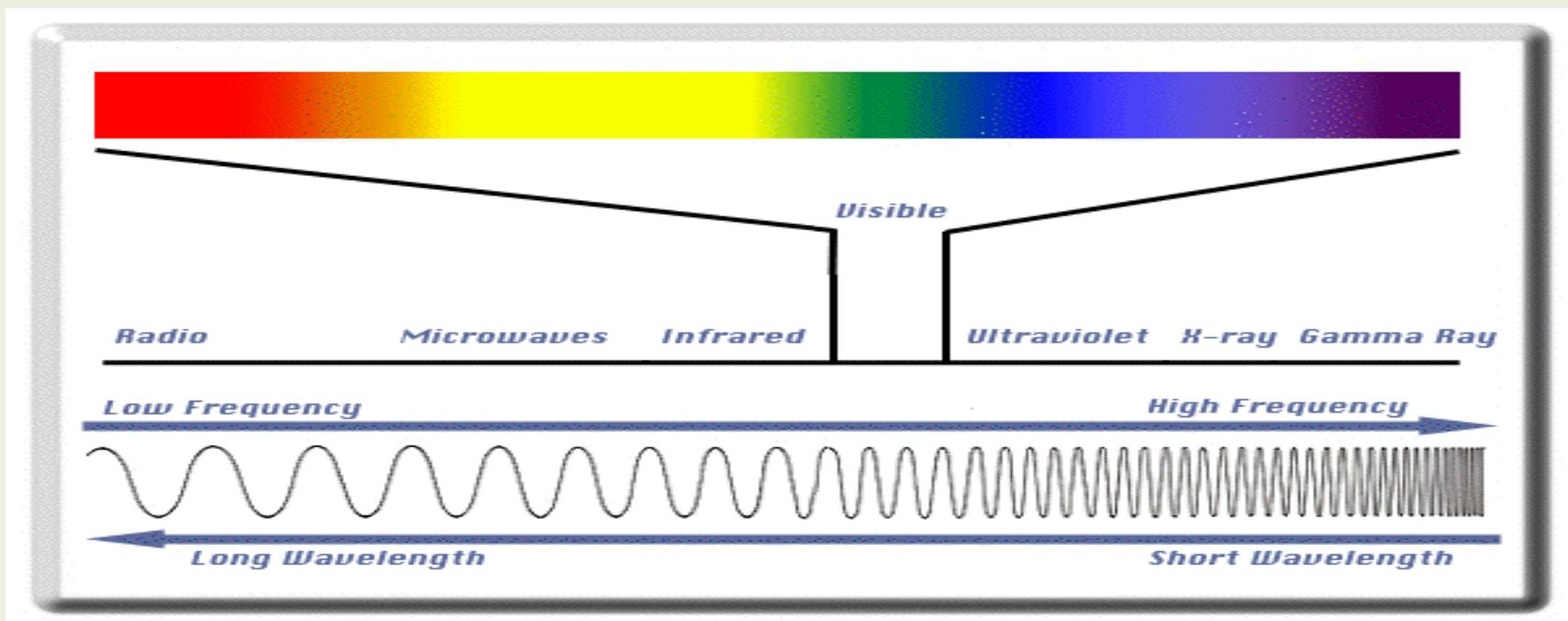
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Helping student with Autism Spectrum Disorders



What is Spectrum?

- The disorders are recognized as a “spectrum”—a group of disorders with a range of similar features, based on a set of features that represent broad descriptive areas rather than particular behaviours.



Asperger Disorder
亞氏保加症

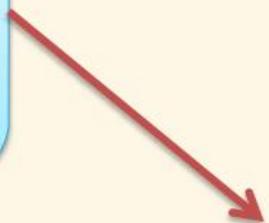
Autistic Disorder
自閉症

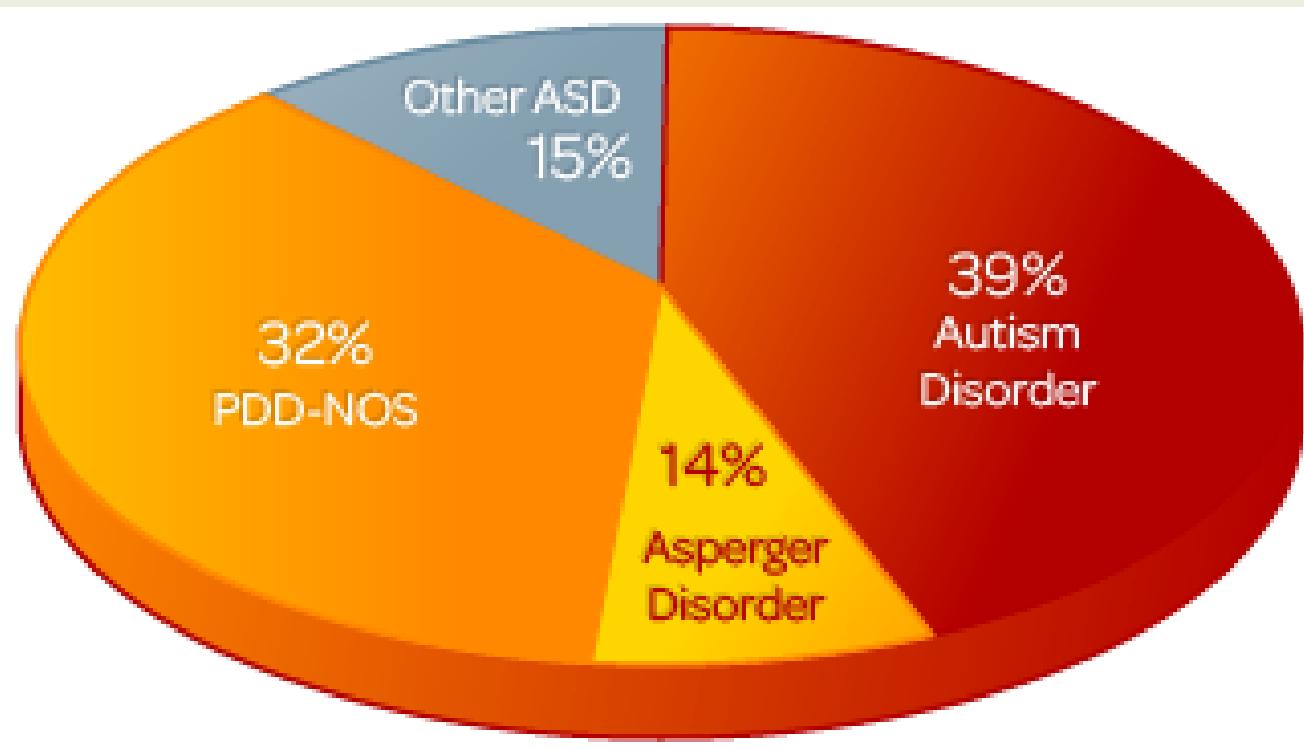
Pervasive Developmental
Disorder – Not Otherwise
Specified (PDD-NOS)
廣泛性發展障礙

Autism Spectrum
Disorders
自閉症譜系障礙

DSM-5

DSM-IV-TR





The percentage share of each initial diagnosis of children with ASD

Asperger Disorder
亞氏保加症

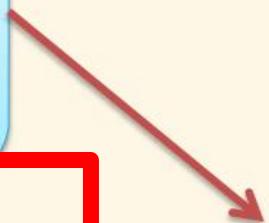
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Videos to know more about ASD/ Asperger





The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5)
As of May 2013

Social communication and interaction

1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions
2. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.
3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

Restricted, repetitive behavior, interests, or activities

1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns or verbal nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat food every day).
3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interest).
4. Hyper- or hyporeactivity to sensory input or unusual interests in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

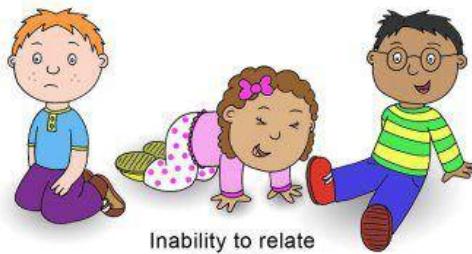


The signs of Autism..

Inappropriate playing with toys



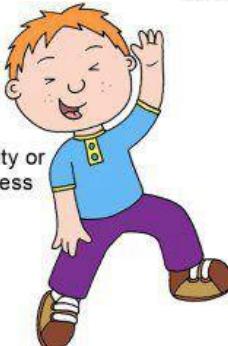
Inability to relate to others



Hyperactivity or Passiveness



Inappropriate laughing or crying



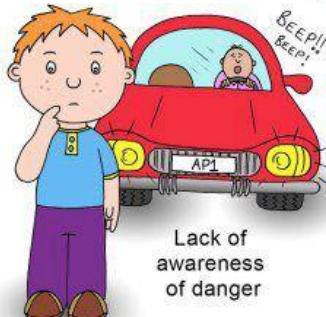
Oversensitive or undersensitive to sound



Strange attachment to objects



Poor speech or lack of speech



Difficulty dealing with changes to routine



AUTISM PUZZLES

Registered Charity No: 1148010
Support when you need it the most.
www.autismpuzzles.co.uk
Tel: 07971 045128

Lack of awareness of danger

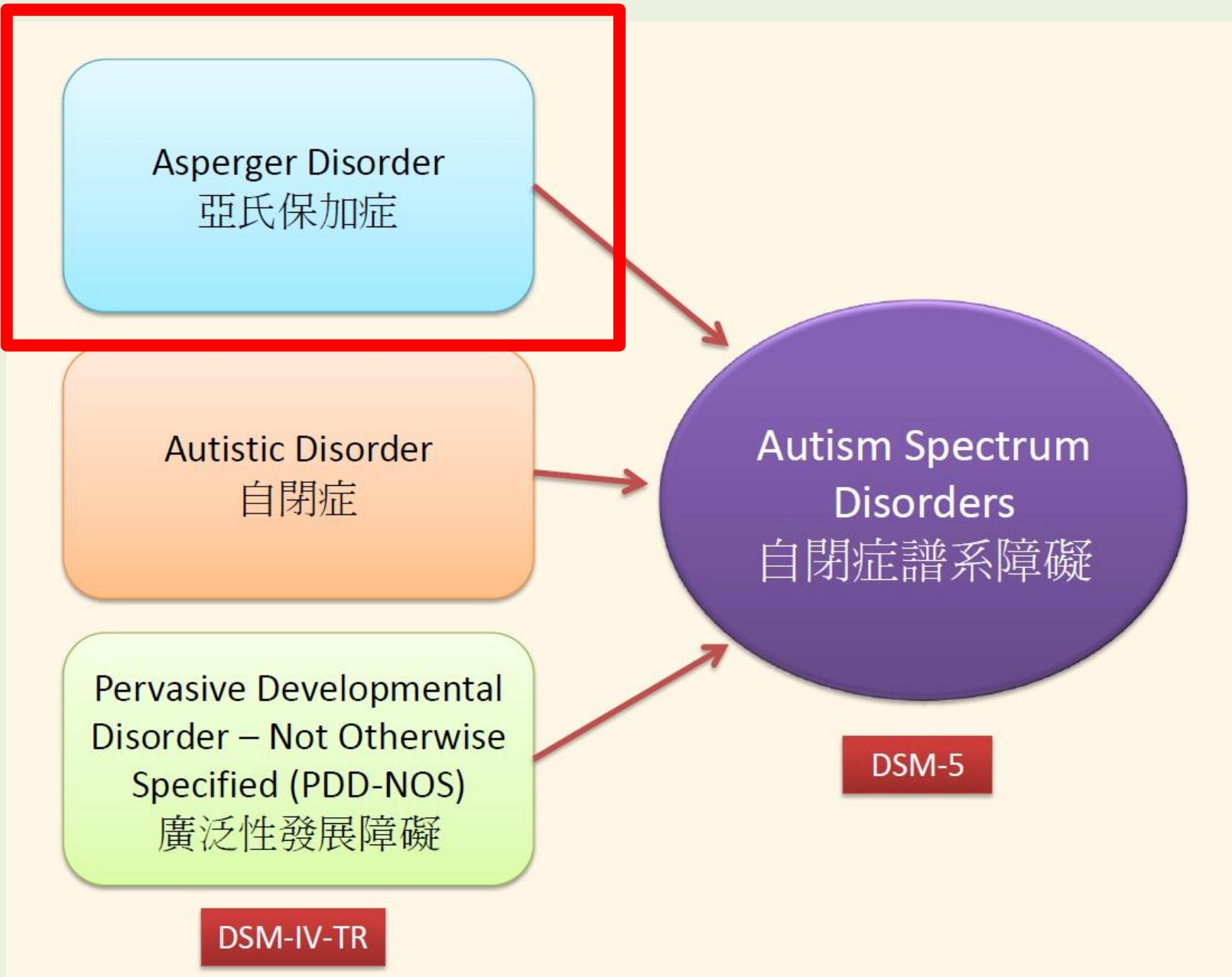
halcyon
Registered Charity No: 1141655
Providing accredited training to people dealing with challenging behaviour
www.halcyon-foundation.org.uk
Tel: 02920 553919

Other Criteria

1. Symptoms must be present in the early developmental period <18 months> (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).
2. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.
3. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay.
4. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

Cognitive characteristics

- ¾ of autistic children have IQ lower than 70.
- Autistic children with normal IQ – high-functioning autism or Asperger syndrome
- Some are gifted or have special talents.
- Often do well with visual activities such as drawings, puzzle construction and rote memory but poor in tasks requiring verbal skills and symbolic thinking
- Inflexible thinking and rigid
- Difficult to understand abstract concepts
- Pay attention to small details, feel difficult to comprehend a picture/event as a whole



Asperger Syndrome

- Asperger Syndrome is an autistic disorder named after Hans Asperger a child psychiatrist from Austria.
- The **average age** in which children are diagnosed with Asperger, is **8** years old. The Asperger Syndrome diagnosis appears to be given **later in life** than diagnosis of other autistic disorders.
- The signs and symptoms are **not always that clear** to parents and teachers and may become more obvious when the child gets older.
- Up till now there is **no consensus** or agreement on which diagnostic criteria will define the Asperger Syndrome in total. There are several lists of criteria researchers can choose from.

Signs and Symptoms of Asperger Syndrome

1. Social isolation (at least two of the following):

- a. no close friends
- b. avoids others
- c. no interest in making friends
- d. loner

2. Impaired social interaction (at least one of the following):

- a. approaches others only to have own needs met
- b. clumsy social approach
- c. one-sided responses to peers
- d. difficulty sensing feelings of others
- e. indifference to the feelings of others

3. Impaired non-verbal communication (at least one of the following):

- a. limited facial expressions
- b. impossible to read emotions through facial expression
- c. inability to convey message with eyes
- d. avoids looking at others
- e. does not use hands to aid expression
- f. large and clumsy gestures
- g. infringes on other people's physical space

Signs and Symptoms of Asperger Syndrome

4. Speech and language peculiarities (at least two of the following):

- a. abnormalities of inflection
- b. over-talkative
- c. non-communicative
- d. lack of cohesion to conversation
- e. repetitive patterns of speech
- f. idiosyncratic use of words
(uses words in a different way than what they would normally mean)

NORMAL VERBAL COMMUNICATION

Autism Spectrum Disorders

PDD—NOS

Impaired social interaction

or

Impaired communication

or

Restricted repetitive and stereotyped patterns or behaviors, interests and activities

AUTISTIC DISORDER

Impaired social interaction

and

Impaired communication

and

Restricted repetitive and stereotyped patterns or behaviors, interests and activities

ASPERGER'S DISORDER

Impaired social interaction

and

Normal communication/language development

and

Restricted repetitive and stereotyped patterns or behaviors, interests and activities

Asperger Disorder
亞氏保加症

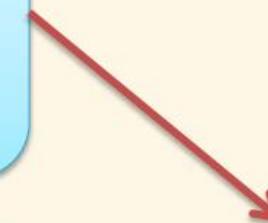
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DSM-5

DSM-IV-TR



Pervasive Developmental Disorders

Also called “subthreshold autism”

General symptoms include:

- Difficulty with verbal communication
- Difficulty with non-verbal communication
- Difficulty with social interaction, including relating to people and surroundings.
- Unusual ways of playing with toys and other objects.
- Difficulty adjusting to changes in routine or familiar surroundings.
- Repetitive body movements or patterns of behavior
- Changing response to sound.
- Tantrums
- Difficulty sleep
- Aggressive behavior
- Fearfulness or anxiety (nervousness)

Autism Spectrum Disorders

PDD—NOS

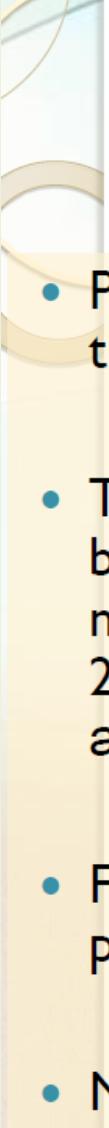
Impaired social interaction
or
Impaired communication
or
Restricted repetitive and stereotyped patterns or behaviors, interests and activities

AUTISTIC DISORDER

Impaired social interaction
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Autism Spectrum Disorders

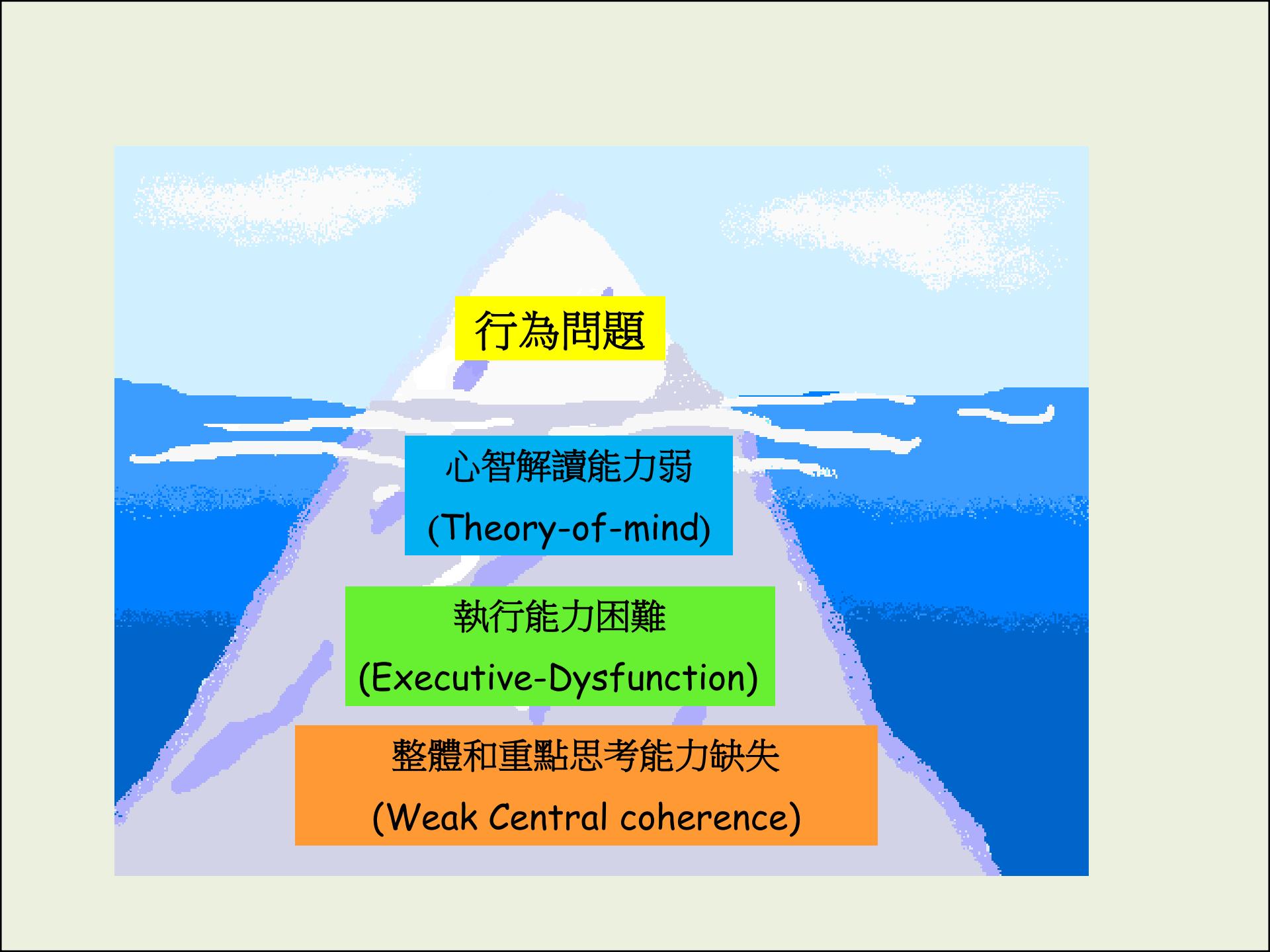
Causes

- Previously (1960s), many people believed that **bad parenting** is the cause of children's problems, including ASD
- Today, we still do not precisely know what is wrong with the brain in ASD, but scientists have established that the cause is neurological, not interpersonal (National Research Council, 2001). Known brain differences in amygdala, hippocampus and cerebellum
- Furthermore, strong evidences have been found that heredity plays a role in many cases.
- No single neurological or genetic cause.



Hereditary Basis

- When one family member is diagnosed with autism, the chances are 50-200 times higher that another family member also has autism
- When a monozygotic (identical) twin has autism, the chances are much greater that the other twin will also have autism than is the case with dizygotic (fraternal) twins.
- Even not diagnosed as autism, the family members are more likely to exhibit autistic-like characteristics, such as a lack of close friends, narrow interests, and a preference for routines



行為問題

心智解讀能力弱
(Theory-of-mind)

執行能力困難
(Executive-Dysfunction)

整體和重點思考能力缺失
(Weak Central coherence)

社交缺損

Social Deficit

1. Attention and encoding of social information

What happened?

2. Emotion identification

What did the character feel?

3. Social reasoning

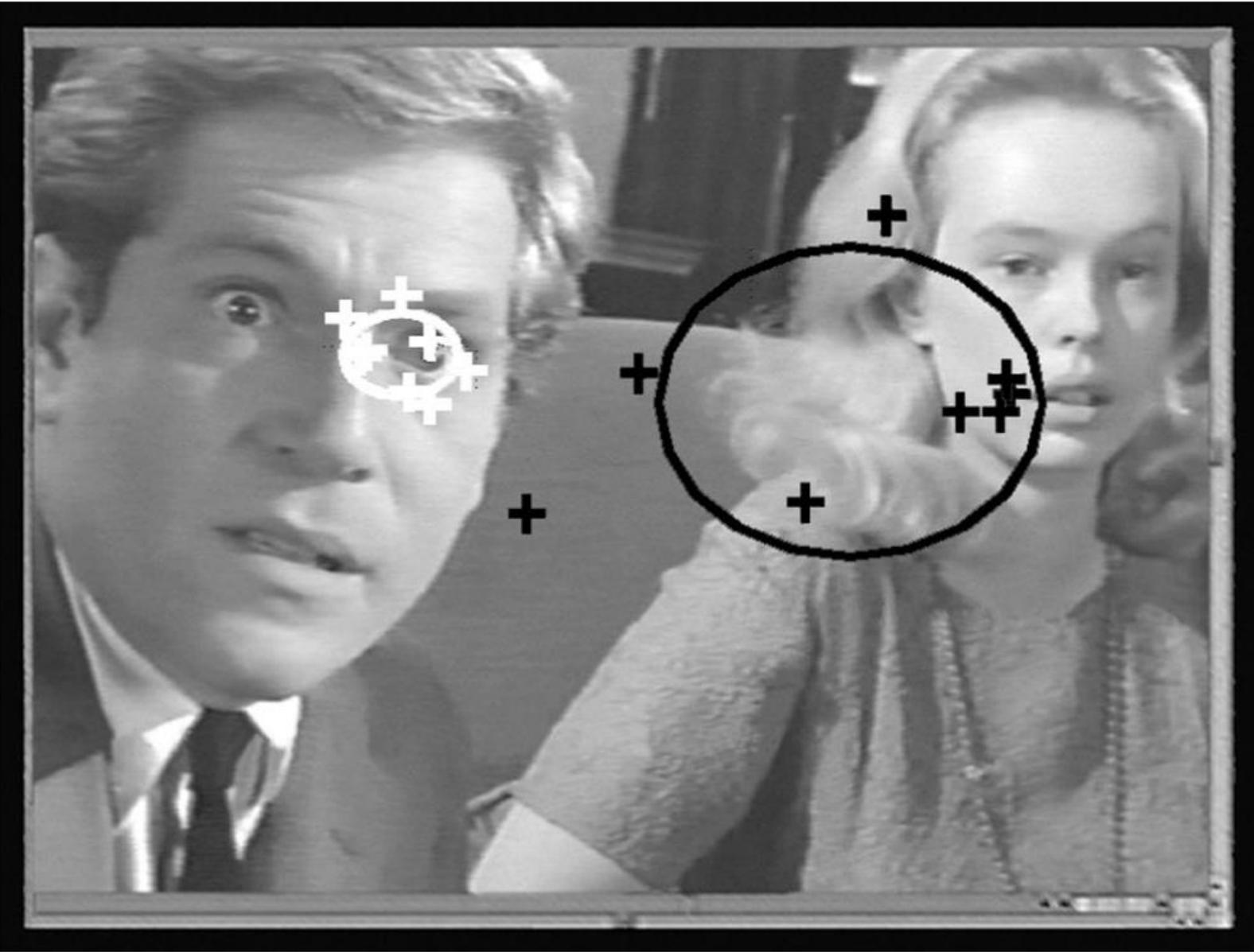
*Why did this happen? Do you think what the character did is appropriate or not?
Why? If that happened to you, would you have a better alternative reaction?*

4. Goal formulation

5. Social enactment

(Initiation → implementation → problem solving → termination)





Joint attention

互聯專注



a



b



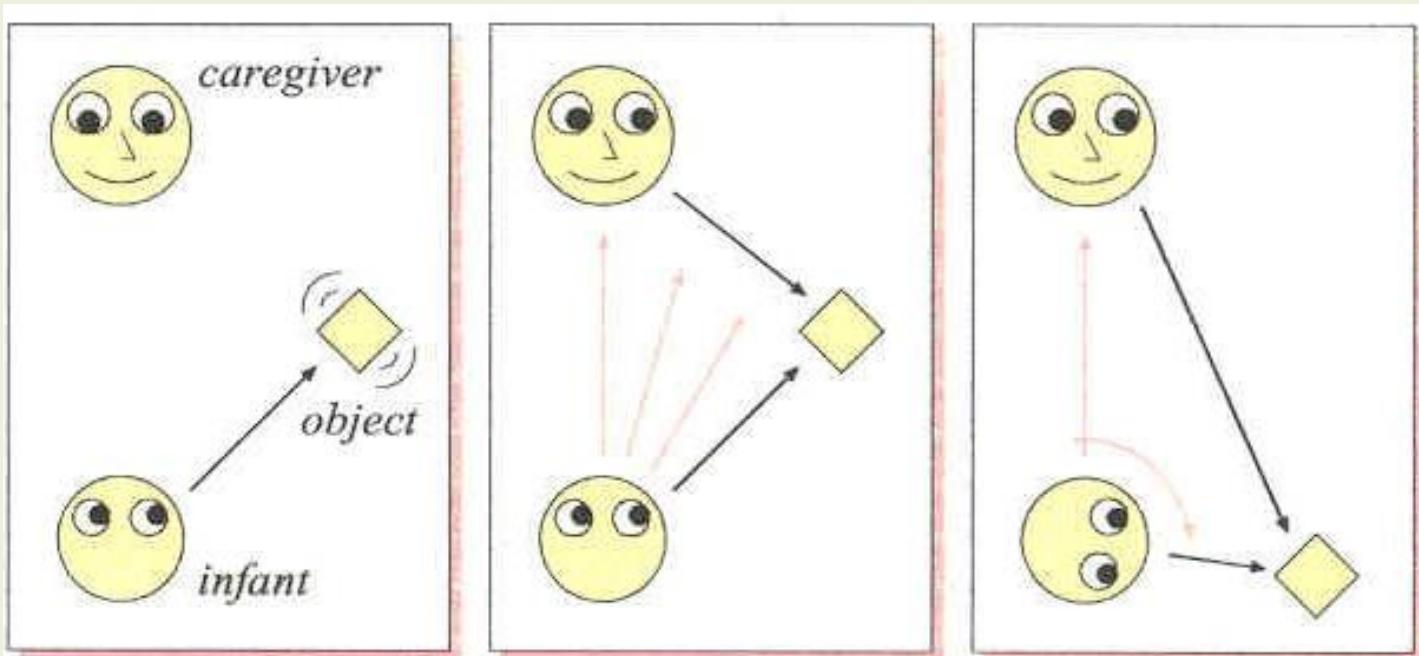
c1



c2



c3



(a) 6th month

(b) 12th month

(c) 18th month

- (a) an infant has a tendency to respond to an interesting object regardless of the attention of the caregiver.
- (b) the infant will react to a caregiver's attention to an object, although typically only when the object is within its field of vision.
- (c) the infant is able to turn around and devote attention to an object even if it is outside the infant's immediate view

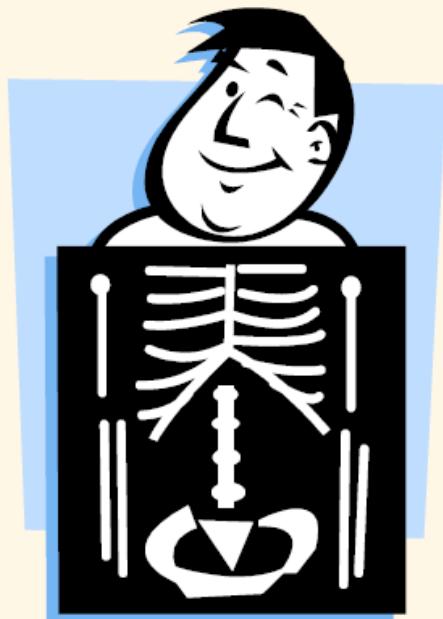
Theory of Mind (TOM)

心智解讀能力弱

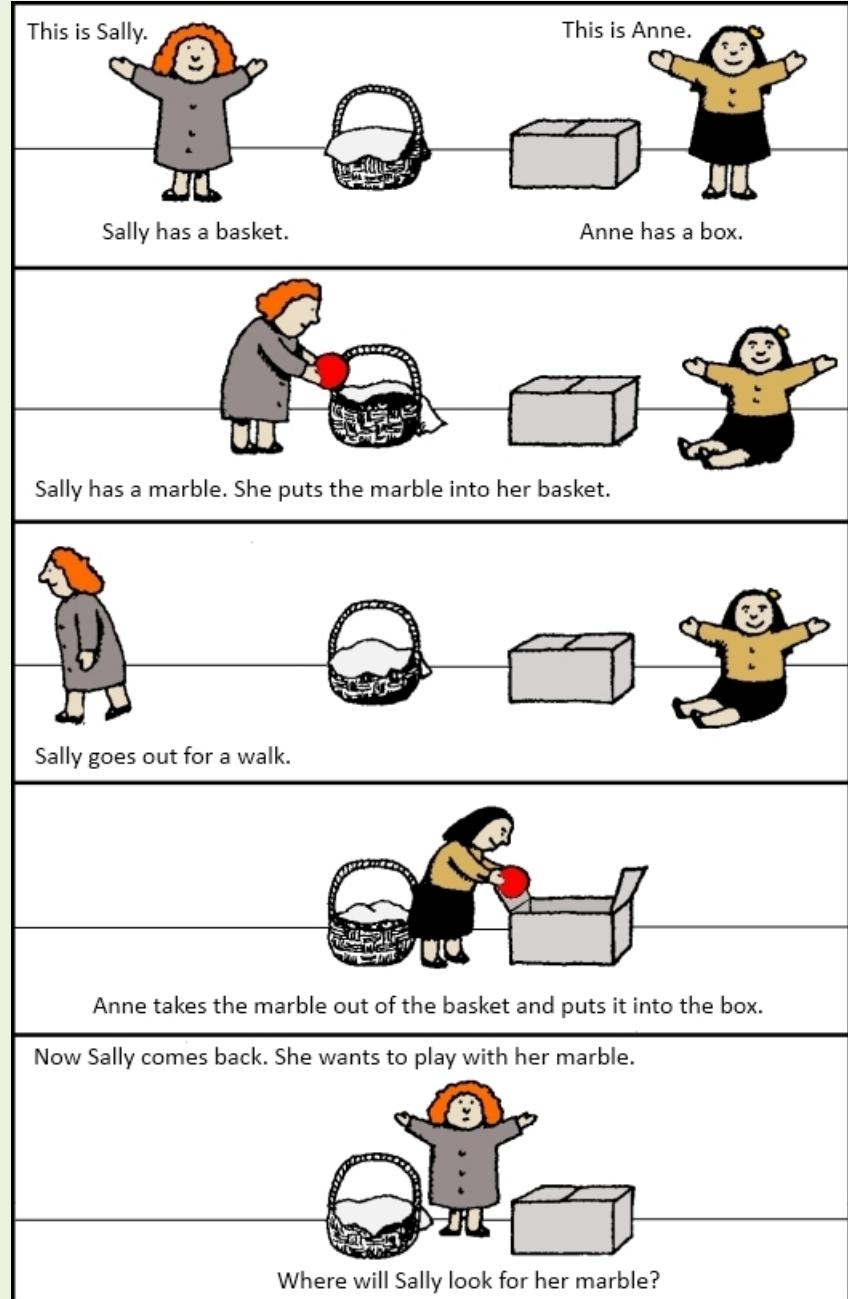
- The ability to attribute mental states—beliefs, intents, desires etc.—to oneself and others (Wikipedia)

Examples

- Have difficulty understanding the perspectives of others
- Insensitive to the feelings and preferences of other people
- True to themselves
- May frequently make social mistakes
- Simple and good-natured



Theory of Mind



偏執行為

Rigidity/ Inflexibility



Central Coherence Theory

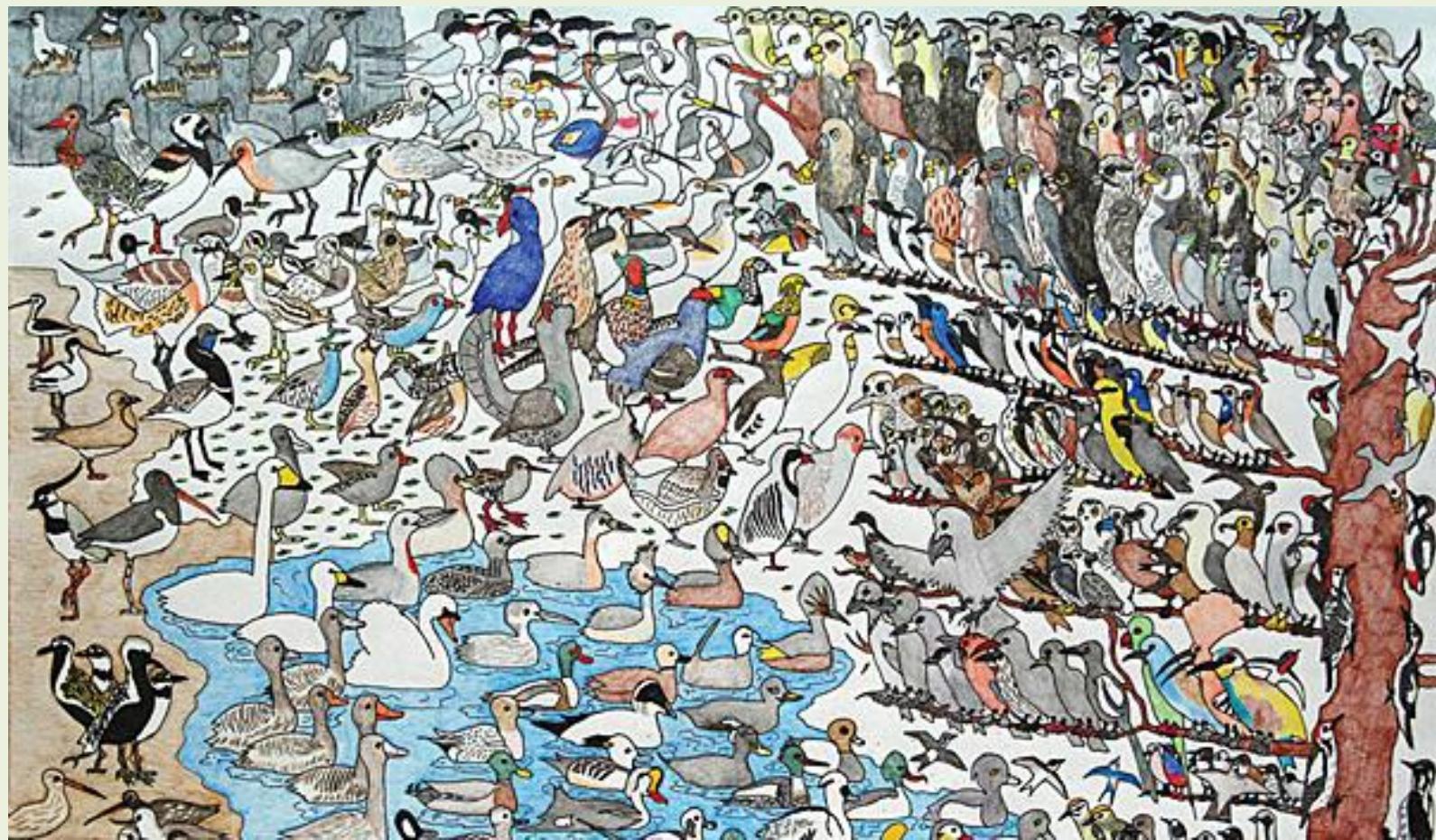
整體和重點思考能力缺失

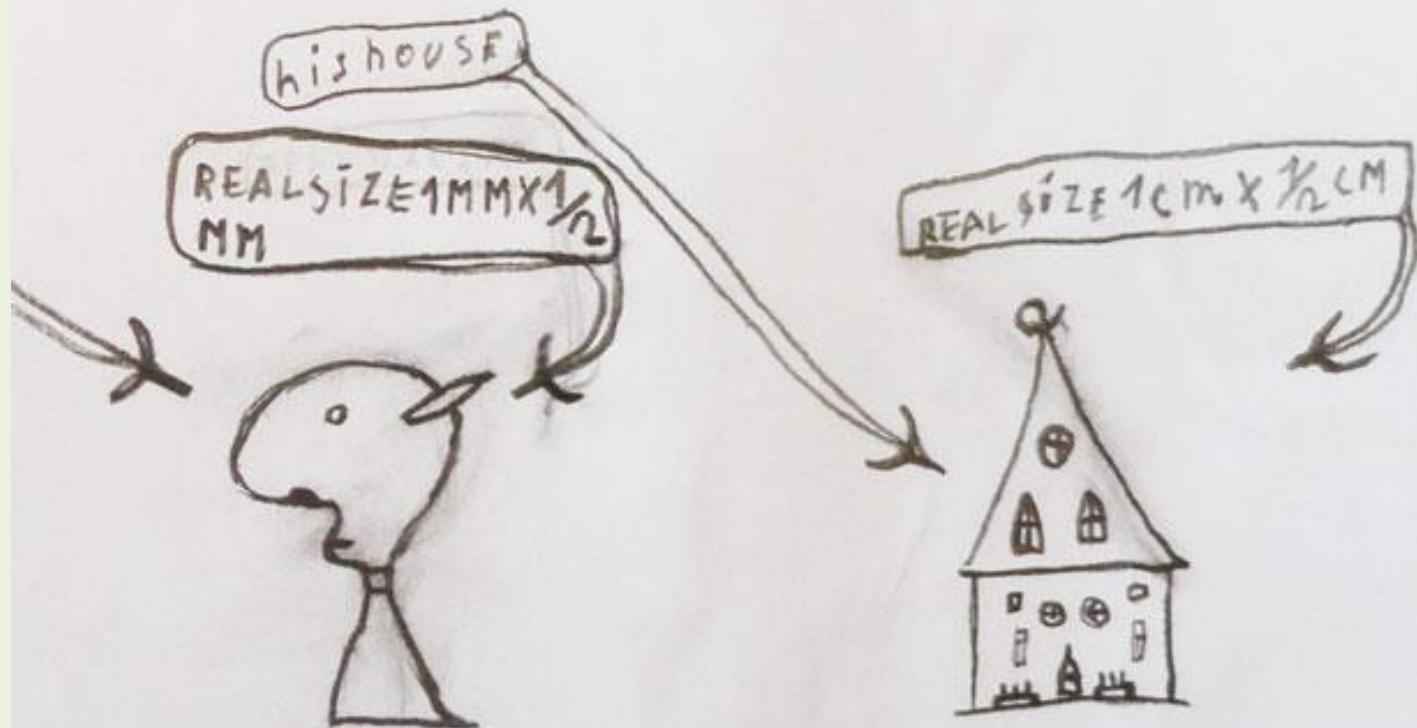
- Seeing the “big picture” as compared to details



Examples

- Attentive to details
- Good memory e.g. dictation/rote memorization
- Weaker at comprehension/ listening
- Difficulty seeing the “big picture” of stories, conversations or social situations
- Strong vocabulary base





Weak Executive Function

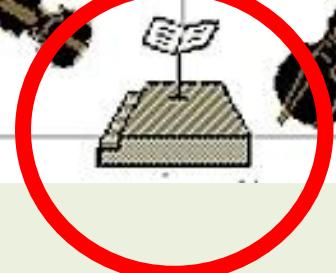
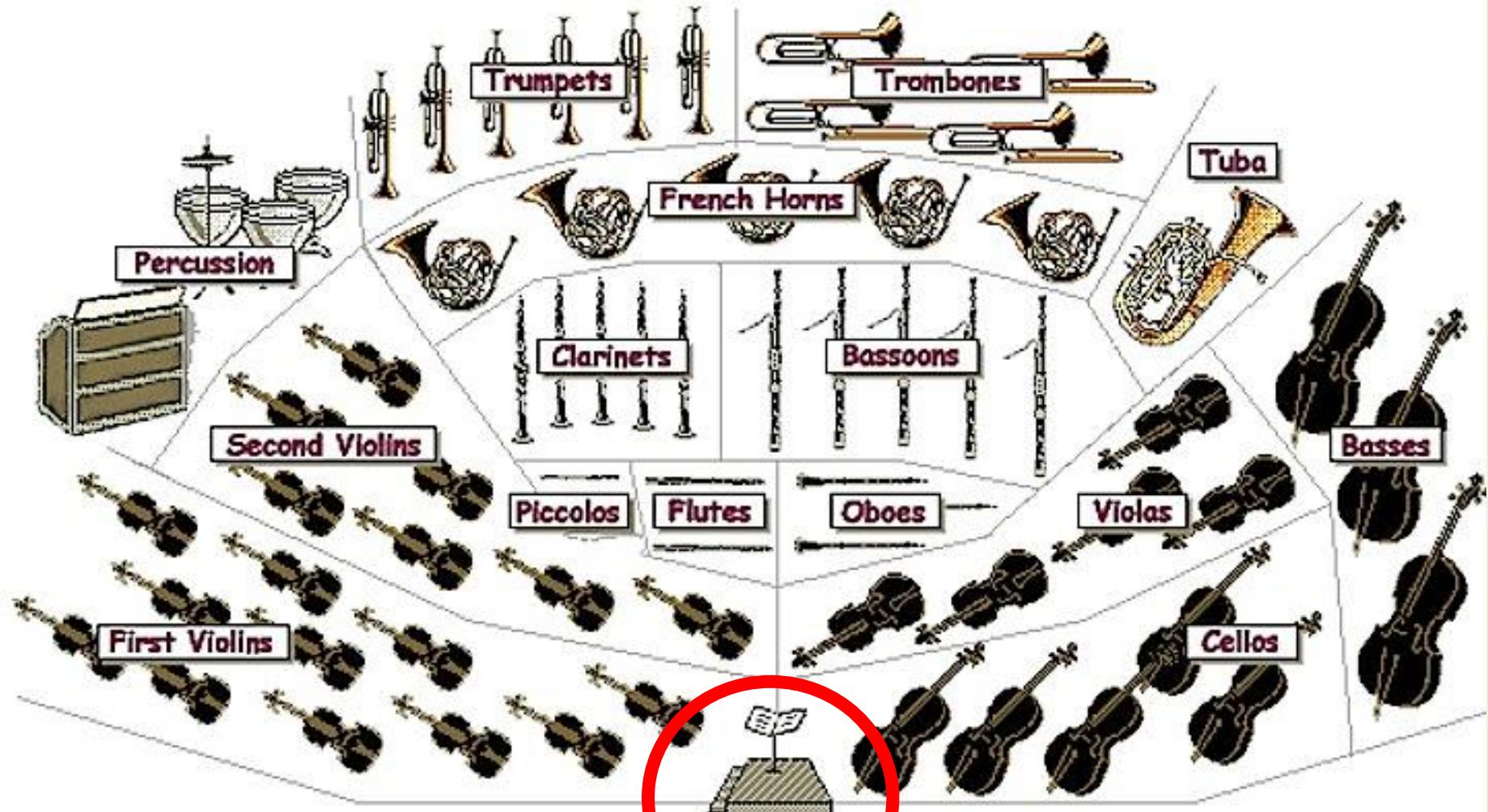
執行能力困難

- EF is the ability to control and manage different tasks in order to reach a goal
- It includes planning, execution, control, inhibition and monitoring

Examples

- Impulsive
- Enjoys repetitions/routines
- Easily anxious
- Easily distracted





Educational Psychological Strategies for ASD



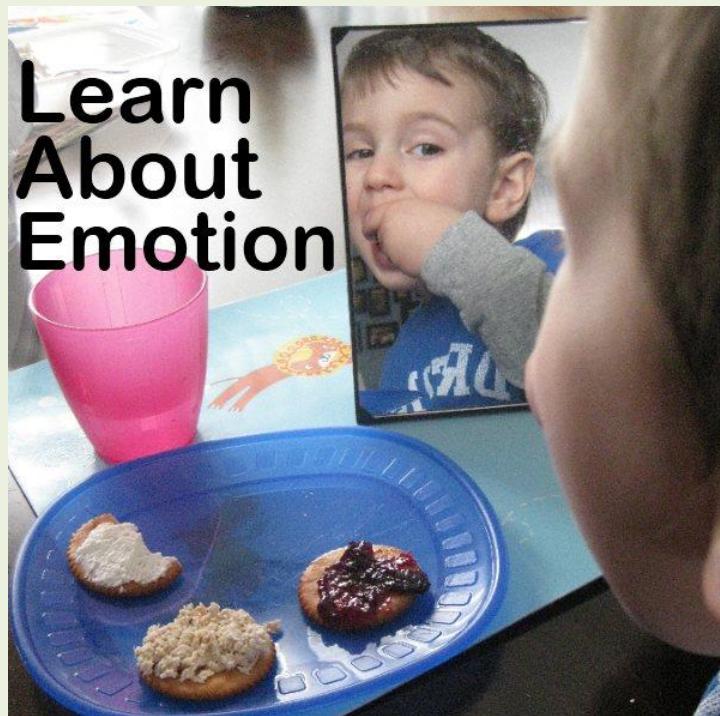
社交缺損

Social Deficit

Imitation



...making faces



用眼睛去思考



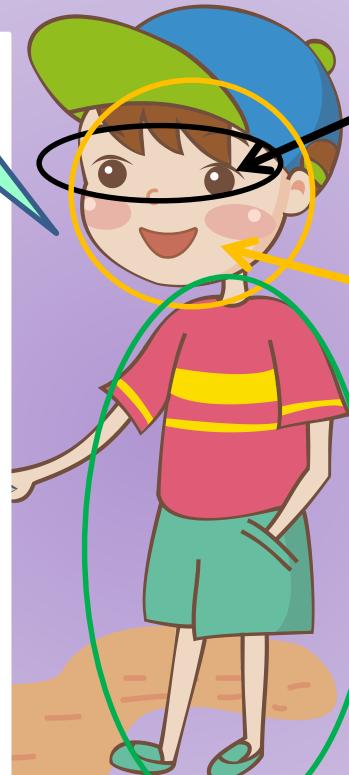
環境

聲線

視線

表情

身體語言



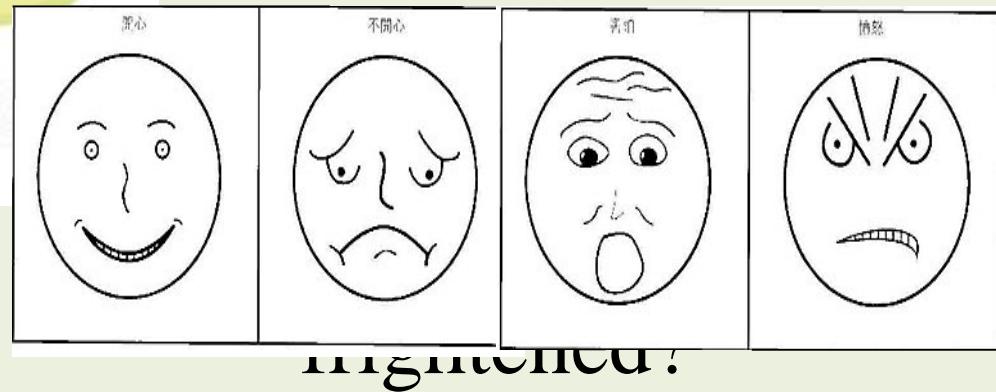
Emotional Understanding: Identifying “Situation-based” emotions

Picture: The dog is chasing Dan down the road



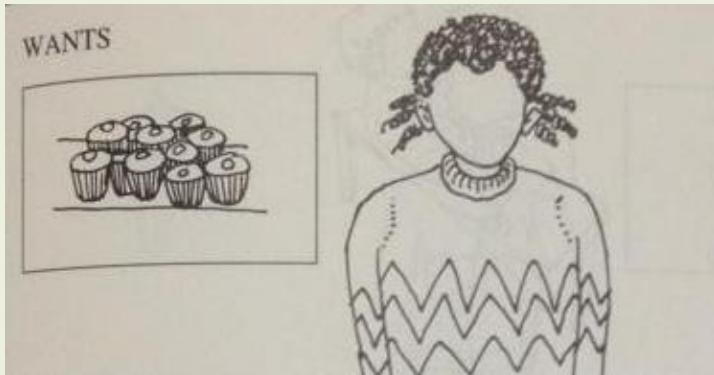
Emotion Question:

- How will Dan feel when the big dog chases him?



Level 4 of Emotional Understanding: Identifying “Desire-based” emotions

Desire: Jenny wants cake



Jenny's father gives her cake



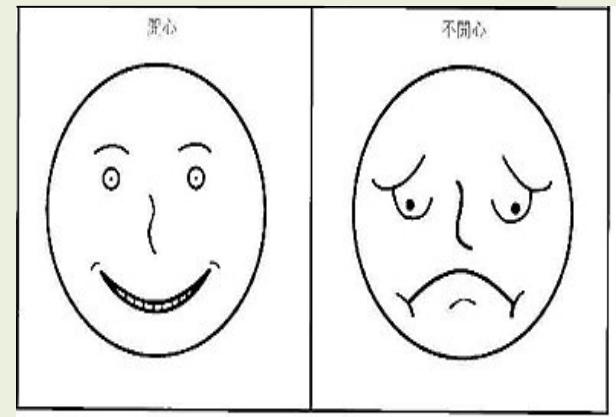
- Desire Question

What does Jenny want?

- Emotion Question

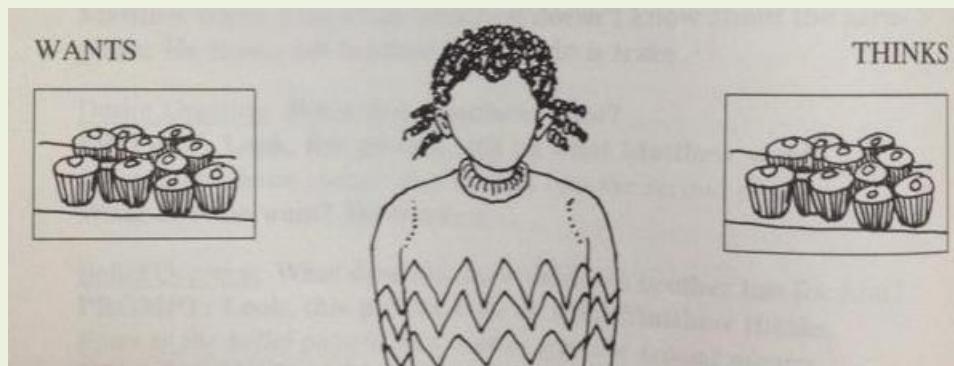
How will Jenny feel when daddy gives her cake for tea?

Will she feel happy?

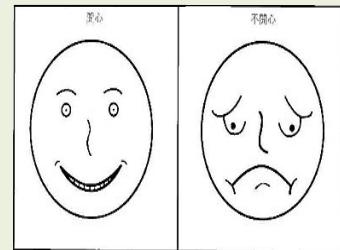


Emotional Understanding: Identifying “Belief-based” emotions

Actual Situation: Jenny’s daddy buys her cake for tea



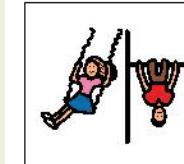
Outcome



Social Story

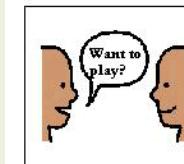
Aims:

- Use storytelling to children with autism by describing a particular social situation
- Guide them to imitate the proper social behavior
- By repeating the social story, enhance their understanding of the social situation and spontaneously react to the corresponding situation

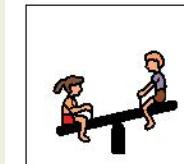


Playing

Sometimes I like to play with other kids.



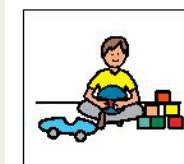
I can ask them, "Do you want to play with me?"



If they say "yes", I can play with them. I will have fun.



If they say "no", it's ok.



I can ask someone else or play by myself.

Tracy Boyd, 2009

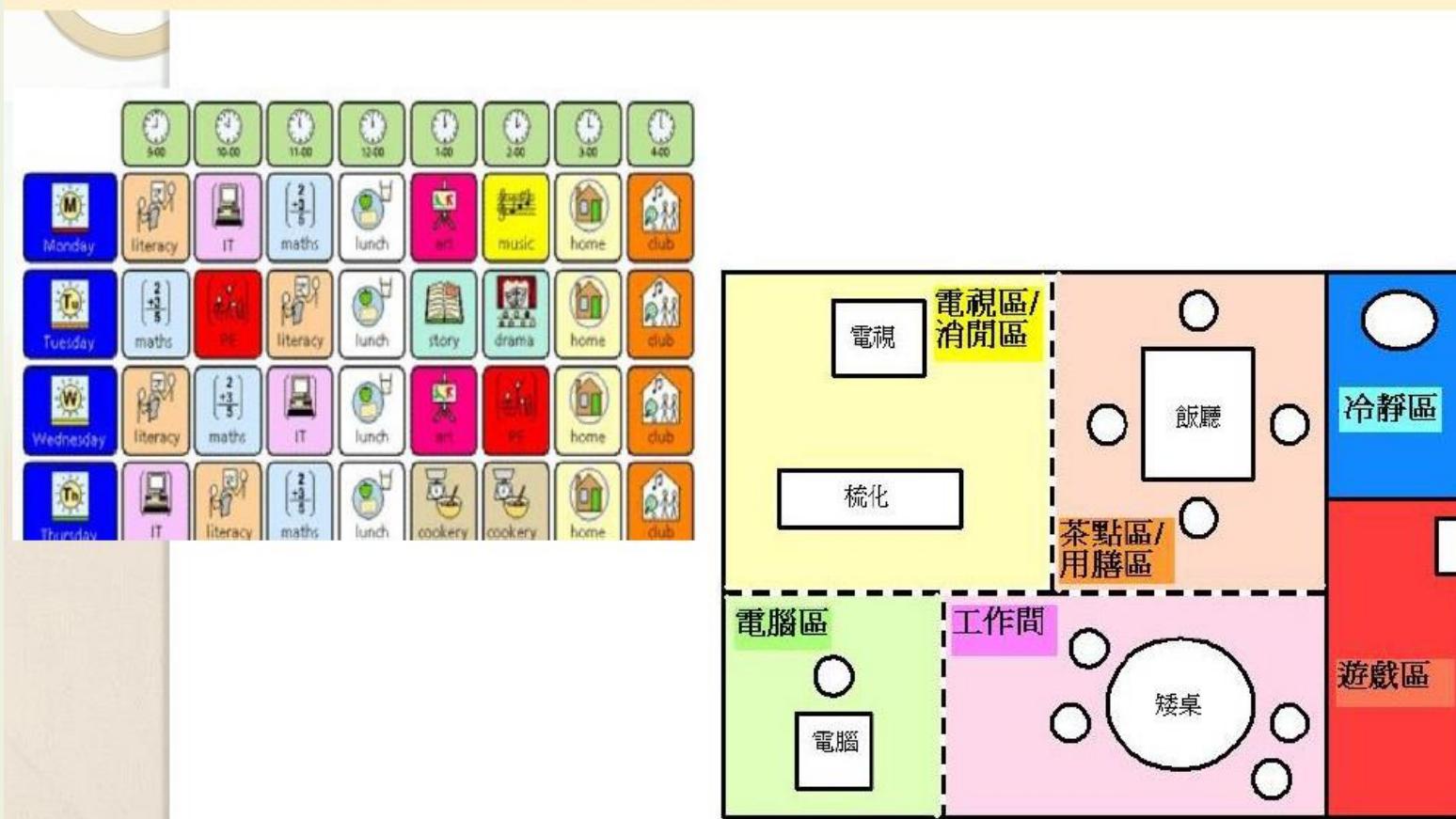
偏執行為

Rigidity/ Inflexibility

結構化教學法 (TEACCH)

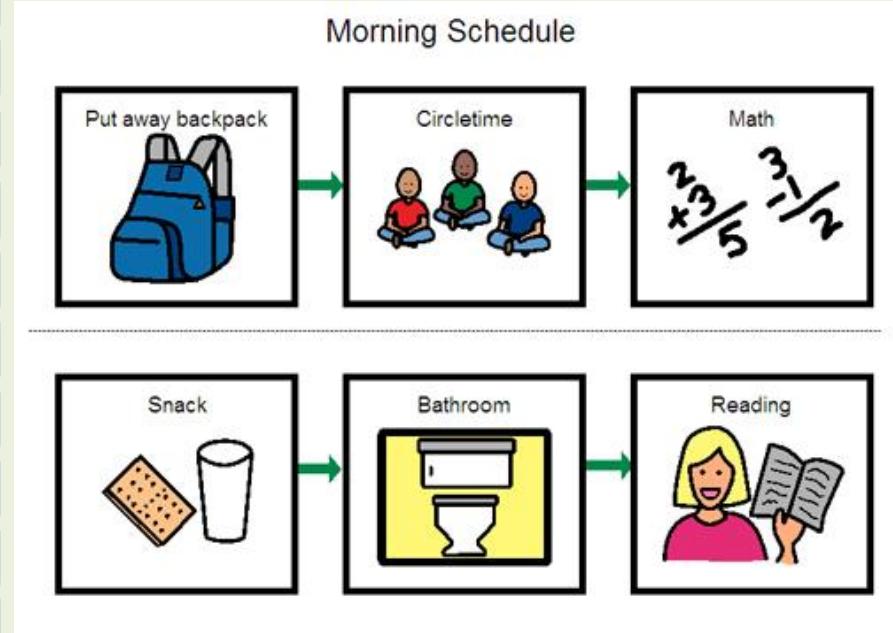
Treatment and Education of Autistic and Communication handicapped Children

- (1) structured environment 結構化的學習及作息環境
- (2) learning routine and timetable 學習及作息時間表
- (3) individual task sequence 個別工作系統



Clear schedule

Daily schedule: Monday	
8:00	Group sharing
8:30	Game time
9:00	Story time
9:30	Snack time
10:00	Outdoor activity
10:30	Music
11:00	Work

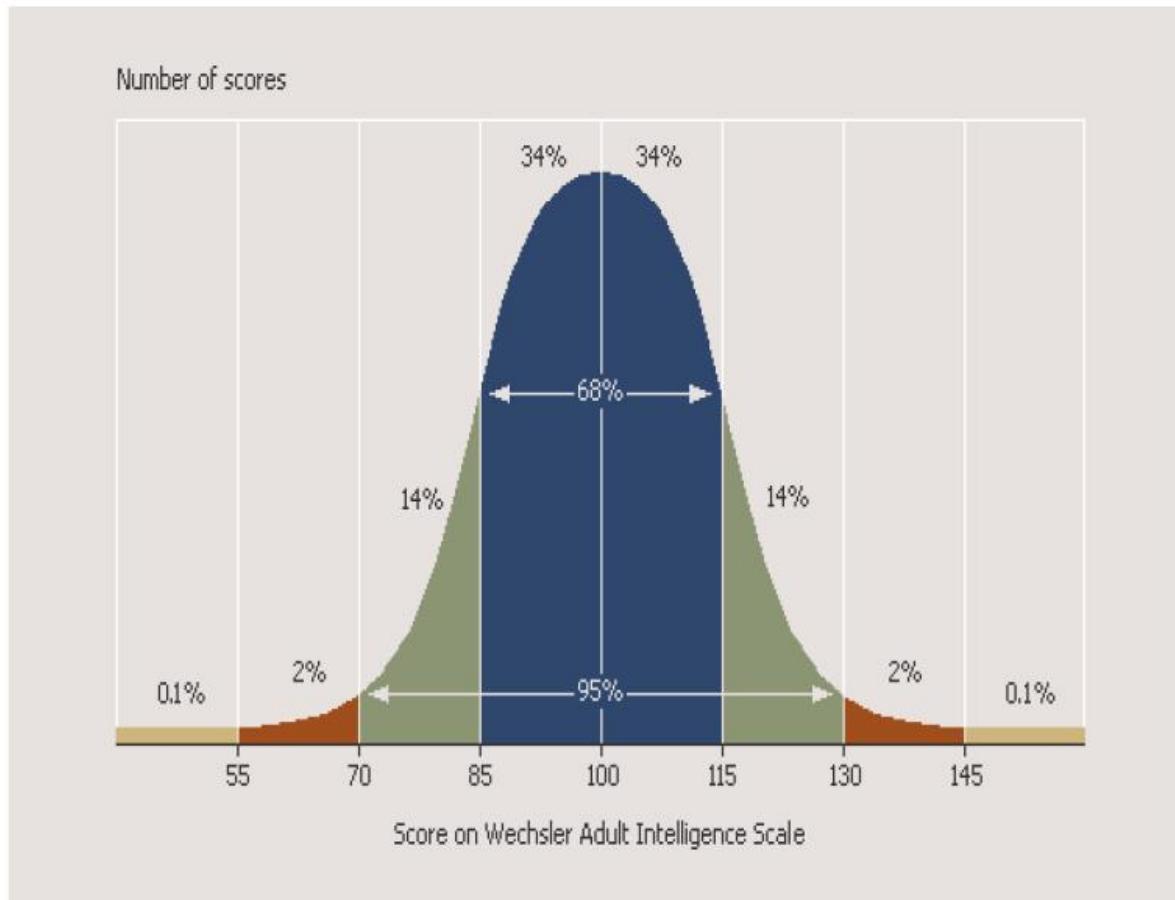


Helping student with Intellectual Disability

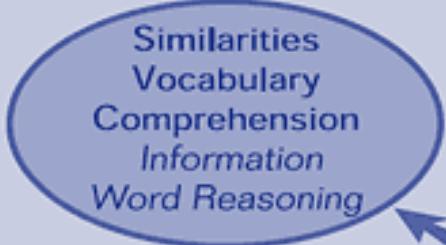




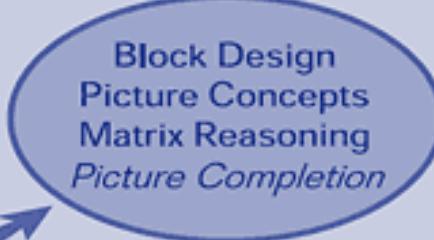
Intellectual Disability



Verbal Comprehension Index



Perceptual Reasoning Index

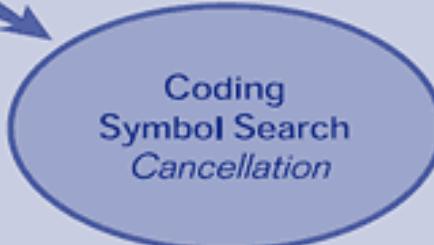


Working Memory Index



FSIQ

Processing Speed Index



Note: Supplemental subtests are shown in italics.

處理速度

工作記憶

知覺推理

言語理解

How to measure IQ

A. Hong Kong-Weschler Intelligence Scale for Children, HK-WISC

- for aged 5- 15
- 香港韋氏兒童智力量表【標準化測驗】
- 語言智商 **Verbal I.Q.**
- 操作智商 **Performance I.Q.**

B. Standford Binet Intelligence Scale 史丹福 - 比奈智力量表

- For aged below 6, no local norm in HK

C. Merrill - Palmer Pre-School Performance Scale 梅柏二氏學前操作測驗

- For aged 3-5, no local norm in HK

Intellectual Disabilities



Standardized IQ test below 70

Two disabling conditions occur before the age of 18 which does not include any intellectual disabling conditions caused by disease and accident after childhood or by aging.

- 1. Significant sub-average limitation in intellectual functioning**
- 2. Limitations in adaptive behaviour**

Intellectual functioning

- Conceptual skills: language and literacy, calculation and number concepts, verbal comprehension and expression, etc.
- comprehension,
- memory,
- use of information,
- problem solving, etc.

People with intellectual disabilities are less and slower than average to perform in these areas

Adaptive behaviour

- Social skills: Interpersonal skills, social responsibility, the ability to follow rules / obey laws and to avoid being victimized, etc.
- Practical skills: activities of daily living (personal care), occupational skills, travel / transportation, etc.
- Impact an individual's daily life and affect the ability to respond to the living environment.

Classification of children with ID

Level	IQ	Mental Age	Academic Level
Mild Grade (85%)	50 to 70	8 - 11	Sixth grade
Moderate Grade (10%)	35 to 49	6 – 8	Second grade
Severe Grade (3-4%)	20 to 34	4 – 6	--
Profound (1-2 %)	Below 20	0 - 4	--

What is the Prevalence of Mental Retardation/Intellectual Disabilities?

- 1% of students in school are classified as having mental retardation.
- Overrepresentation of some minority groups – greater likelihood of identification as having mental retardation among African Americans.
- 56% males (aged 6-17)

The American Association on Mental Retardation

- AAMR proposed a reconceptualization of levels of mental retardation based not on IQ scores, but instead on the level of support the individual requires in order to function successfully in society. This system included the following four levels:
 1. Intermittent support (episodic need)
 2. Limited support (needed for specific periods of time)
 3. Extensive support (needed regularly for an extended period of time)
 4. Pervasive support (life-long, intense need)

To date, this system has not been accepted as widely as the traditional system based on IQ scores (Conyers, Martin, Martin, & Yu, 2002).

What is Mental Retardation? (AAMR, 2002, p. 48)

In summary, mental retardation is not something you have, like blue eyes or a bad heart. Nor is it something you are, like being short or thin. It is not a medical disorder, although it may be coded in a medical classification of diseases; nor is it a mental disorder, although it may be coded in a classification of psychiatric disorders. *Mental retardation* refers to a particular state of functioning that begins in childhood, is multidimensional, and is affected positively by individualized supports (see Figure 1.1). As a model of functioning, it includes the structure and expectations of the systems within which the person functions and interacts: micro-, meso-, and macrosystems. Thus a comprehensive and correct understanding of the condition of mental retardation requires a multidimensional and ecological approach that reflects the interaction of the individual and his or her environment, and the person-referenced outcomes of that interaction related to independence, relationships, contributions, school and community participation, and personal well-being.

System of Support

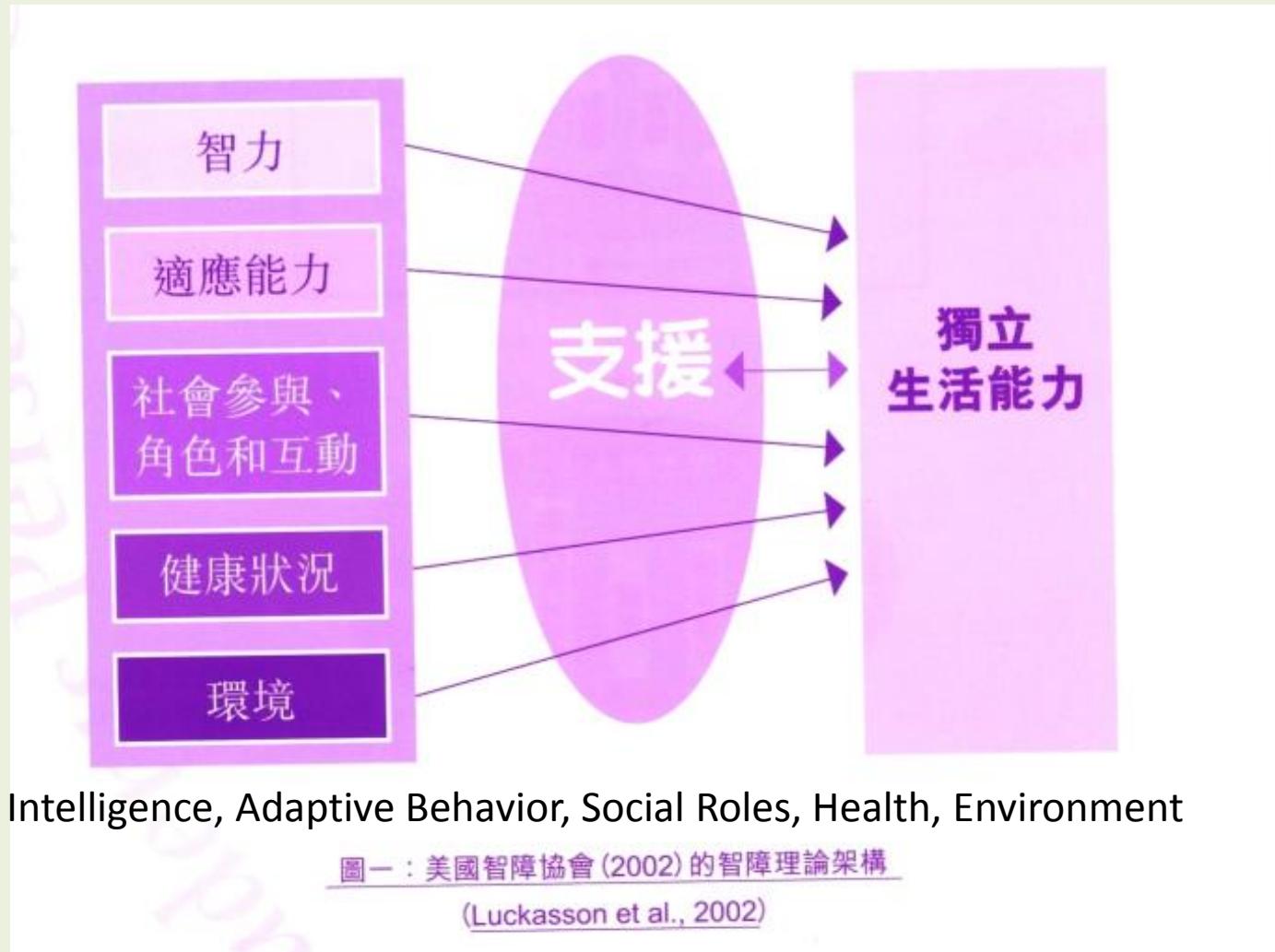
Supports are resources and strategies that aim to promote the development, education, interests, and personal well-being of a person and that enhance individual functioning. Services are one type of support provided by professionals and agencies. Individual functioning results from the interaction of supports with the dimensions of Intellectual Abilities; Adaptive Behavior; Participation, Interactions, and Social Roles; Health; and Context. The assessment of support needs can have different relevance, depending on whether it is done for purposes of classification or planning supports.

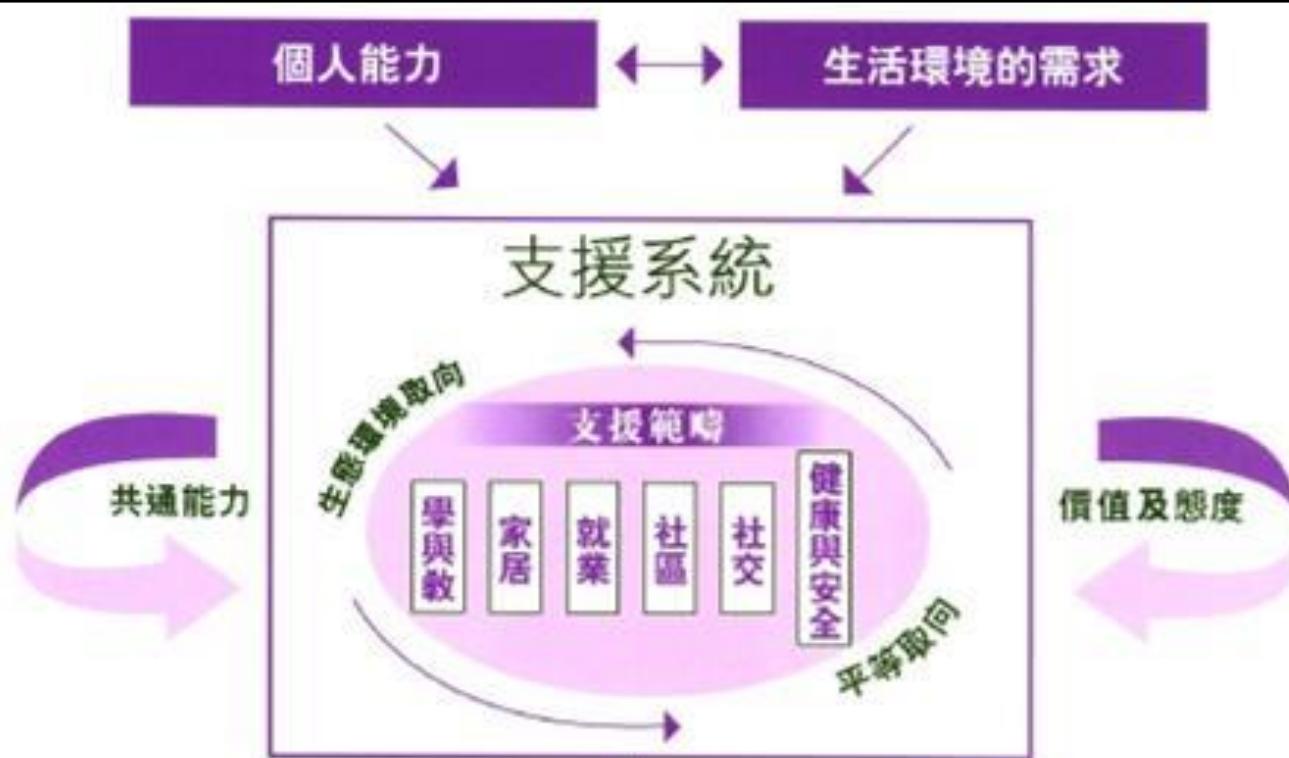
Personal Support Outcomes

TABLE 9.4
Key Indicators for Personal Support Outcome Categories

Outcome Category	Indicators	Outcome Category	Indicators
Independence	Autonomy Choices Decisions Personal control Self-direction Personal goals	School and community participation	School presence Community presence School activities Community activities School involvement Community involvement Acceptance Role status
Relationships	Intimacy Affection Family Interactions Friendships Mentors	Personal well-being	Emotional well-being Interpersonal relations Material well-being Personal development Physical well-being Self-determination Social inclusion Rights
Contributions	Employment status Vocational activities Volunteerism Ownership Possessions Hobbies		

AAMR (2002) Conception of Mental Retardation





Independence Relationships Contributions
School and community participation, personal well-being



圖二：參照美國智障協會(2002) 支援系統及理想個人成果理念架構

Causes

- **Infections** - Congenital rubella syndrome(CRS) or spontaneous abortion due to rubella infection
- **Virus** - Cytomegalovirus Infections (CMV) passes the placental barriers into the developing embryo and causes severe neo-natal illness
- **Intoxication** - Spontaneous perinephric haemorrhage and acute renal failure in pregnancy due to cocaine intoxication
- **Chromosome abnormalities**
- **Complications during child birth**
- **Unknown**

Range of heterogeneity in the MR population

- Mild MR (75% to 89%) vs. moderate to profound MR (11% to 25%)
- Within Mild MR, for 25-40% has an identifiable cause for MR vs. within moderate to profound MR, about 60-75% have identifiable specific cause.
- Cultural-familial causes vs. organic causes
- Some argue that individuals in the two groups might have very different developmental trajectories and very different ways of learning and adapting in the context of schools and society

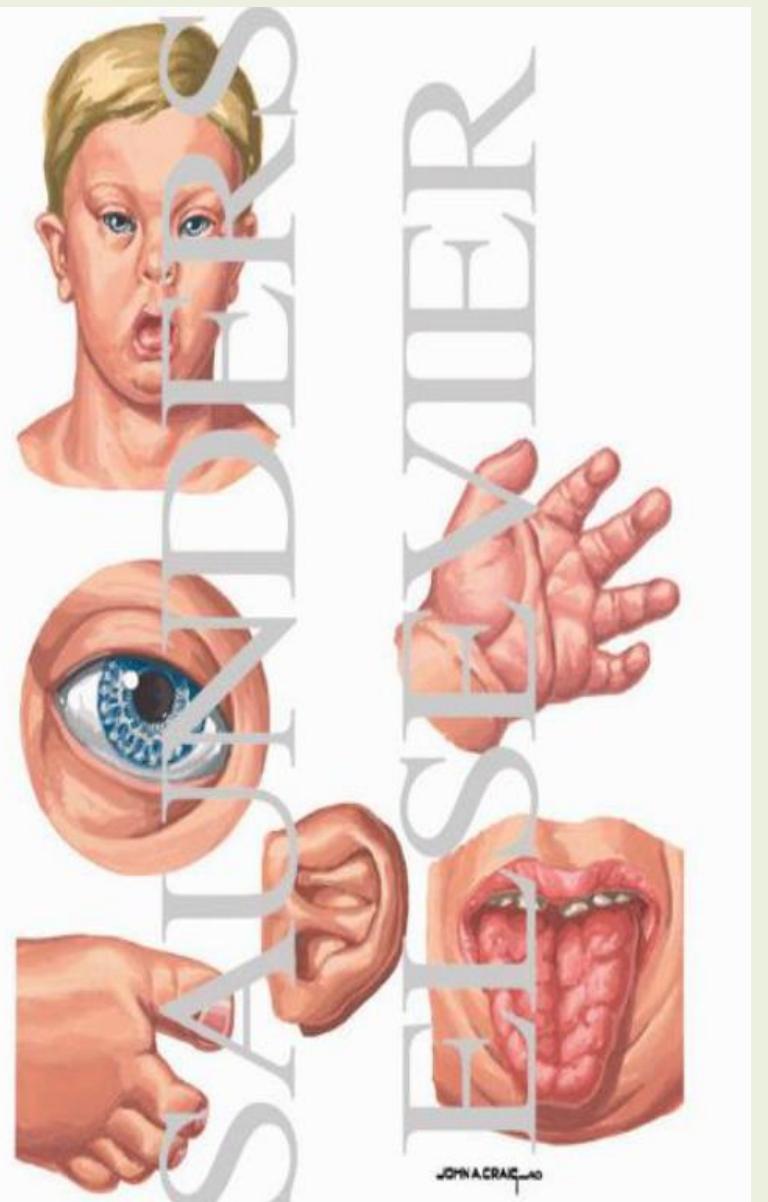
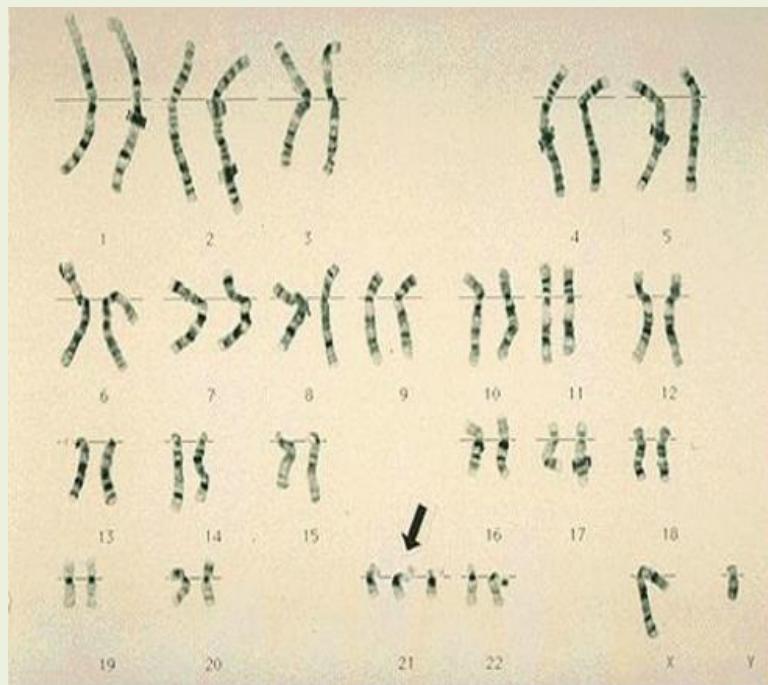
Can Mental Retardation/Intellectual Disabilities Be Prevented?

- Medical Technology and Testing
 - Magnetic imaging and computer tomography
 - Amniocentesis and Chorion villus sampling
- Good Prenatal Care and Early Intervention Services

Down Syndrome

- Named after Langdon Down in 1866
- Related to the age of the mother
- Caused by a presence of an extra set of genes on the number 21 chromosomes (Trisomy 21 / 廿一三體症)
- 95% of cases – regular development of trisomy 21; 5% of cases – mosaicism / translocation
- Physical characteristics – short board neck, slanting of the eyes, very thick eyelids, flat face and nose, small ears, small mouth and large tongue, small square hands with short fingers
- Intellectually impaired – mild, moderate, severe
- Health problems, e.g. obesity, poor eye sight etc.



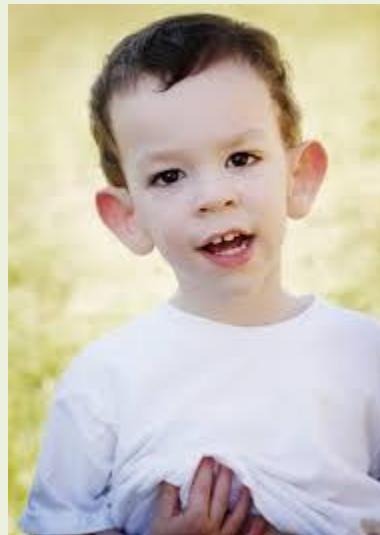


What is fragile X syndrome?

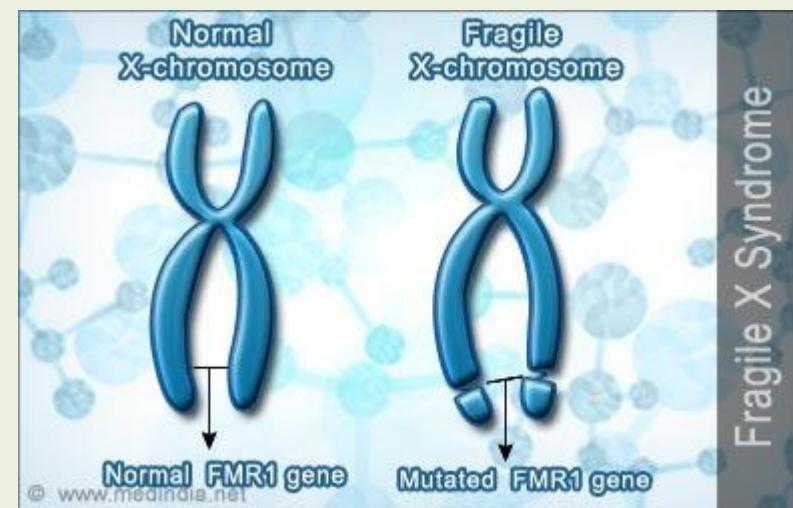
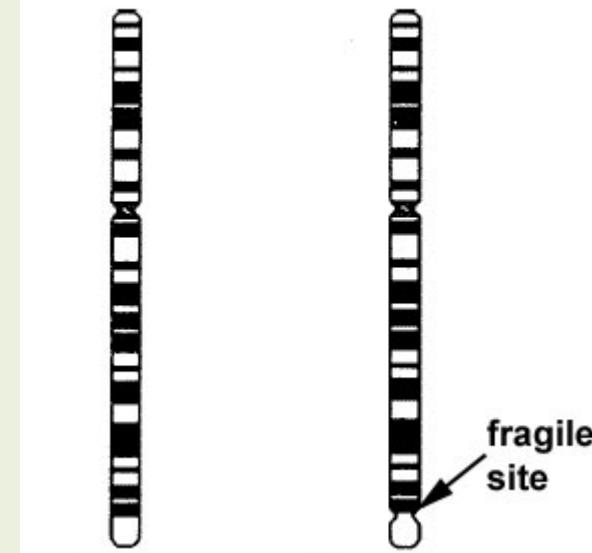
- Fragile X syndrome is the most common form of inherited mental retardation in males and is also a significant cause of mental retardation in females.
- It affects about 1 in 4,000 males and 1 in 8,000 females and occurs in all racial and ethnic groups.
- Both boys and girls can be affected, but because boys have only one X chromosome, a single fragile X is likely to affect them more severely.
- Nearly all cases of fragile X syndrome are caused by an alteration (mutation) in the FMR1 gene where a DNA segment, known as the CGG triplet repeat, is expanded.

What are the symptoms of fragile X syndrome?

- A boy who has the full FMR1 mutation has fragile X syndrome and will have moderate mental retardation.
- They have a particular facial appearance, characterized by a large head size, a long face, prominent forehead and chin and protruding ears. In addition males who have fragile X syndrome have loose joints (joint laxity), and large testes (after puberty).
- Affected boys may have behavioral problems such as hyperactivity, hand flapping, hand biting, temper tantrums and autism.
- Other behaviors in boys after they have reached puberty include poor eye contact, perseverative speech, problems in impulse control and distractibility.
- Physical problems that have been seen include eye, orthopedic, heart and skin problems.
- Girls who have the full FMR1 mutation have mild mental retardation.



Normal X Fragile X



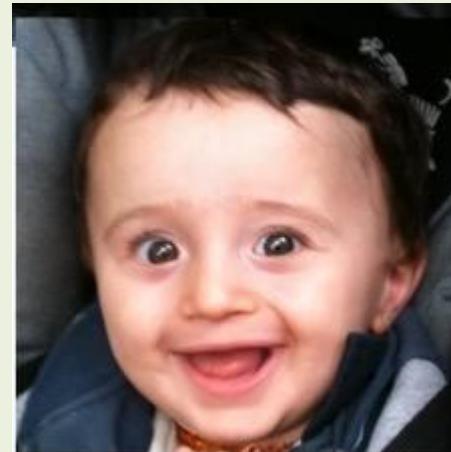
Angelman syndrome is a neuro-genetic characterized by severe intellectual and developmental disability, sleep disturbance, seizures, jerky movements, frequent laughter or smiling, and usually a happy demeanor.

Signs and symptoms

- Developmental delay, functionally severe
- Speech impairment, no or minimal use of words; receptive and non-verbal communication skills higher than verbal ones
- Movement or balance disorder, usually tremulous movement of limbs
- Behavioral uniqueness: any combination of frequent laughter/smiling; apparent happy demeanor; easily excitable personality, often with hand flapping movements; hypermotoric behavior; short attention span

Appearance

- Delayed, disproportionate growth in head circumference by age 2
- Seizures, onset usually < 3 years of age
- Abnormal EEG, characteristic pattern with large amplitude slow-spike waves



Characteristics and Concomitant Problems of MR

Table 4.1 Representative Characteristics and Concomitant Problems of Mental Retardation

<i>Area</i>	<i>Characteristics</i>	<i>Potential Problems</i>
Cognitive	Limited memory Limited general knowledge and information Concrete rather than abstract thinking Slower learning rate	Inattention Inefficient learning style Difficulty communicating Prone to failure Standard teaching practices ineffective
Academic	Difficulty learning most academic content Limited performance in most content areas Limited problem-solving ability Limited content mastery	Limited attention, organizational skills, questioning behaviors, direction following, monitoring of time, and other school coping skills
Physical	Some discrepancies between physical and mental abilities	Performance often less than expected, based on physical appearance
Behavioral	Limited social and personal competence Limited coping skills Limited personal life skills and competence	Tardiness, complaints of illness, classroom disruptiveness, social isolation, inappropriate activity
Communication	Lower levels of language development, limited listening and speaking vocabularies	Difficulty following directions, making requests, interacting, or communicating

Learning difficulties of children with ID

- Learn at a slower pace than their peers
- Shorter attention span
- Poor memory skills
- Difficulties in abstract thinking and complicated learning strategies
- May have difficulties motor co-ordination
- Lower ability in generalizing newly acquired information
- Slower language development
- Lower learning motivation

General Principles of Teaching

- a. Teachers may devise individualized educational programmes according to students' learning abilities and progress.

- b. The teaching content should increase its degree of difficulty gradually, so that students can make progress according to their abilities and needs. Each learning target could be broken down into a number of small targets to make them easier for students to follow and enhance their sense of achievement.



General Principles of Teaching

- c. The learning content should be **specific** (具體的) and **experiential** (經驗的) to **align** (排成直線) with students' thinking ability.
- Use appropriate teaching materials and aids
 - Situational activities (such as those related to daily life examples) should be conducted to help students understand abstract concepts.



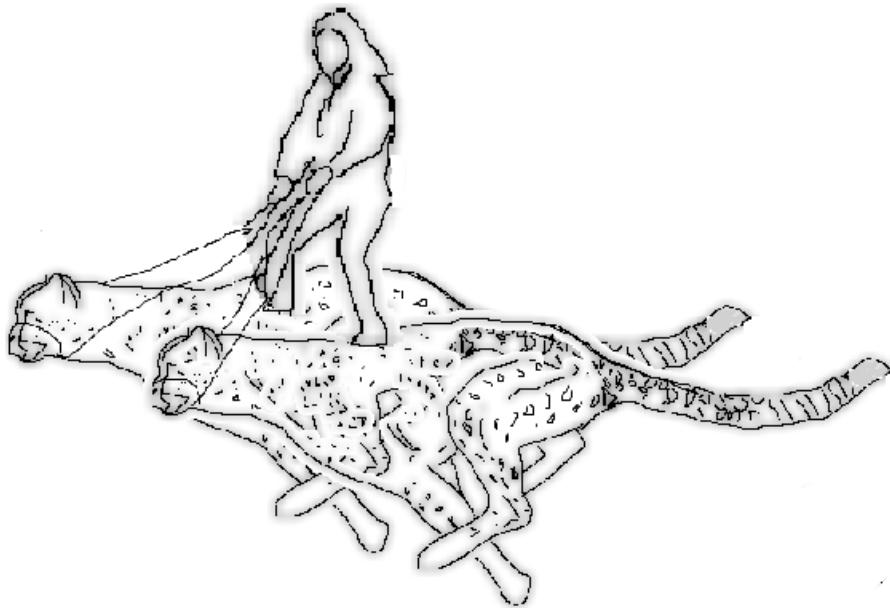
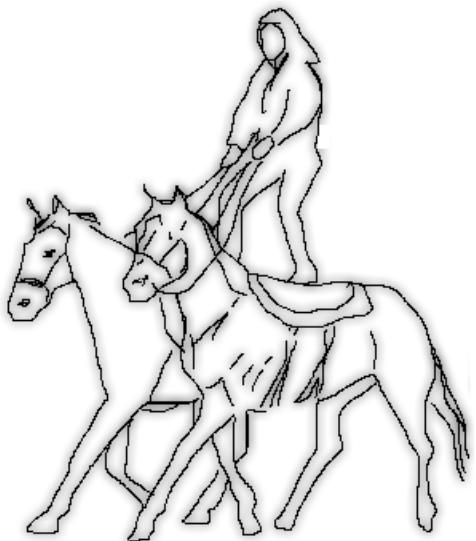
Curriculum Characteristics

- Person-centered planning
- Basic academic skills
- Functional curriculum
 - Functional academics, independent life skills, self-determination, self-advocacy
- Community-based instruction
- Transition planning

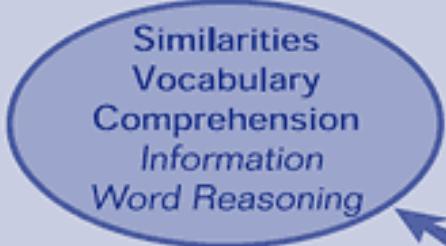
BRIGHT

VS.

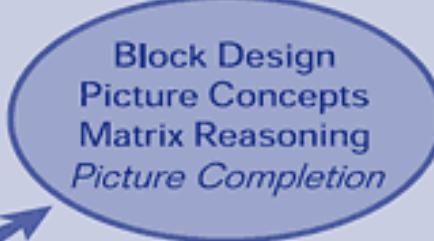
GIFTED



Verbal Comprehension Index



Perceptual Reasoning Index

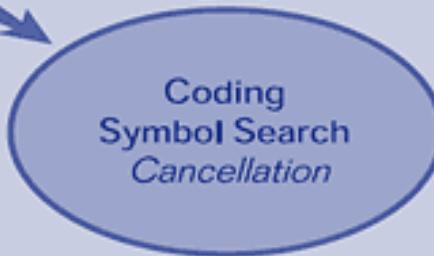


Working Memory Index



FSIQ

Processing Speed Index



Note: Supplemental subtests are shown in italics.

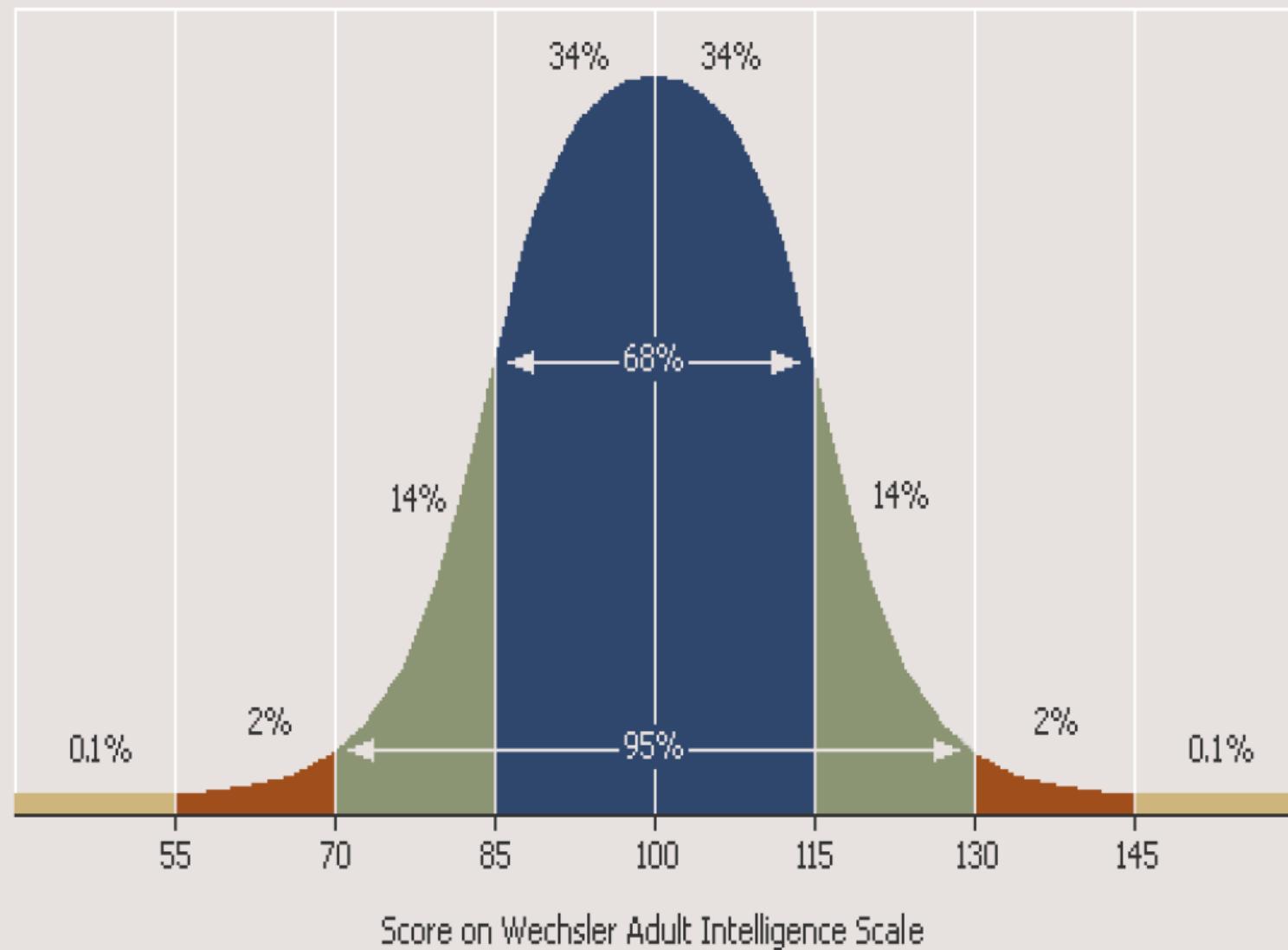
處理速度

工作記憶

知覺推理

言語理解

Number of scores



智力等級

IQ score	Percentile	Category	
> 130	2.2%	特優智能	Very Superior
120-129	6.7%	優異智能	Superior
110-119	16.1%	中上智能	High Average
90-109	50%	中等智能	Average
80-89	16.1%	中下智能	Low Average
70-79	6.7%	有限智能	Borderline
< 69	2.2%	低弱智能	Extremely Low

儘管能夠判斷學生是否資優，然而以此判斷是什麼程度的資優則仍有不足。縱然韋氏智力測驗的最高值是160，但對象是以智商70-130的人為主。普遍而言，資優的智商值被定為130以上。

What is gifted?

Giftedness is **multidimensional** and **should not be only defined by an Intelligence Quotient**. Gifted students **may have exceptional achievement or potentials in one or more of the following areas:** certain intellectual domains, a specific subject area, original thinking, visual spatial and artistic areas, social and leadership capacities, athletics, mechanical skills or other areas requiring motor coordination.

‘Giftedness’ = All-round excellence?

However, ‘giftedness’ is not equivalent to all-round excellence. Some gifted students may have special educational needs such as physical or sensory disabilities, specific learning disabilities, motional or behavioural difficulties, hyperactivity, etc.

Definition of gifted children

- The Education Commission Report No. 4 (ECR4) adopted a broad definition of gifted children who are described as children with exceptional achievement or potentials in one or more of the following:
 - (a) a high level of measured intelligence;
 - (b) specific academic aptitude in a subject area;
 - (c) creative thinking;
 - (d) superior talent in visual and performing arts;
 - (e) natural leadership of peers; and
 - (f) psychomotor ability – outstanding performance or ingenuity in athletics, mechanical skills or other areas requiring gross or fine motor coordination.

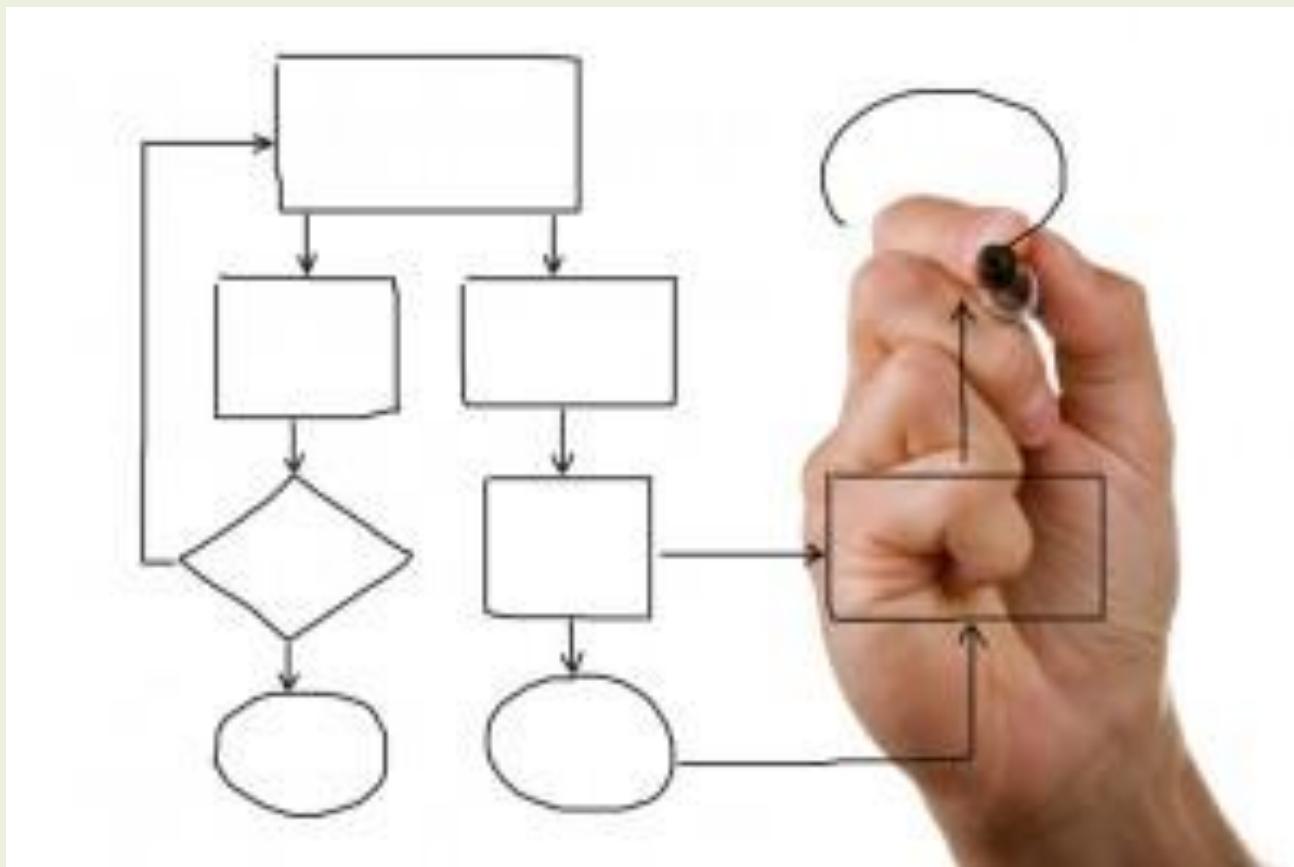
Characteristics of Gifted Students

Gifted students generally possess certain characteristics, which enable them to learn at **a fast pace** when appropriate learning environment and teaching resources are available. On the other hand, these characteristics can become **obstacles** to students learning and social development, or even lead to adjustment difficulties if the students' learning needs cannot be properly met and challenged. Listed below are some examples of the gifted students' characteristics and the possible difficulties that these students may encounter:

1. Learning

- Advanced in language development and language ability compared to their peers.
- They usually like reading. The scope and content of the books they read are broader and deeper than their peers.
- They are very observant and highly curious. As they raise questions frequently, and are articulate in expressing ideas and opinions which are advanced for their age, they are often misunderstood as ‘loving to show off .
- They have exceptionally good memory, comprehension and information processing abilities.
- They are knowledgeable and able to analyze subtle cause-and-effect relationships.

概念化



2. Affective Characteristics

- Can concentrate intensely on things that interest them and carry out investigations persistently.
- Seldom satisfied with their own performance since they pursue perfection in everything.
- Value fairness, justice, right and wrong, and criticise people and things frequently.
- They often behave “stubbornly”, hence, peers may not accept them.
- Normally have high expectations for both themselves and others. This will easily lead to frustration and disappointment.
- Difficulties in establishing good relationship with their peers.

3. Creativity

- Gifted students are **curious** and always have original and novel ideas.
- They are bold to **attempt** and **investigate**, active to express views,
- fearless to hold dissenting views, having a **sense of humour**, and in
- Extremely strong aspiration for **achievement**.
- Some students may fully concentrate on attainment of perfectionism and hence become **unrealistic**.
- If their peculiar thoughts are not accepted by their peers, the resultant **lonely** and **solitary feelings** may affect their confidence and self-image.

4. Leadership

- Gifted students love to **direct or lead** other people, and will perform
- with a high degree of **self-confidence**. They can function as leaders in group activities.
- Nevertheless, gifted students may occasionally be **confused of their roles and those of adults**. Therefore, they may lose their rightful naivety.

Bright Learners

Knows the answers
Is interested
Is attentive
Has good ideas
Works hard
Answers the questions
Top group
Listens with interest
Learns with ease
6-8 repetitions
Understands ideas
Enjoys peers
Grasps the meaning
Completes assignments
Is receptive
Copies accurately
Enjoys school
Absorbs information
Technician
Good memorizer
Enjoys straightforward, sequential presentation
Is alert
Is pleased with own learning

Gifted Learners

Asks the questions
Is highly curious
Is mentally and physically involved
Has wild, silly ideas
Plays around, yet tests well
Discusses in detail, elaborates
Beyond the group
Shows strong feelings and opinions
Already knows
1-2 repetitions for mastery
Constructs abstractions
Prefers adults
Draws inferences
Initiates projects
Is intense
Creates a new design
Enjoys learning
Manipulates information
Inventor
Good guesser
Thrives on complexity
Is keenly observant
Is highly self-critical

by Janice Szabos

The three core elements

- The three core elements advocated in gifted education are:
 - higher order thinking skills
 - creativity
 - personal-social competence
- ALL students as the basis for nurturing talents and giftedness among our youngsters should be immersed in the curriculum for these core elements.

Evaluate



JUDGE THE VALUE - OF ALTERNATIVES

Synthesize



PUT TOGETHER KNOWLEDGE - INTO A NEW WHOLE

Analyse



BREAK DOWN KNOWLEDGE - TO FIND MEANING.

Apply



USE YOUR UNDERSTANDING - IN A NEW WAY.

Comprehend



SHOW UNDERSTANDING - SUMMARIZE OR EXPLAIN.

Know



RECALL INFORMATION.

Higher order thinking skills

Principles of Gifted Education

- (a) Gifted education should be seen as part of quality education. The **needs of gifted students**, like their less able counterparts, **should basically be met in their own school**;
- (b) **A broad definition using multiple intelligences (MI) instead of a restrictive one**, confining only to the academically gifted, should be adopted;
- (c) **Nurturing MI** is a fundamental goal of quality basic education and should be the mission of ALL schools;
- (d) **Special provisions** will be made for:
 - (i) the very exceptionally gifted students whose learning needs cannot be fully stretched in school, and
 - (ii) gifted yet with emotional/behavioural or learning (e.g. dyslexic) difficulties. These students will be identified through professional assessments provided by educational psychologists or specialists;

Principles of Gifted Education

- (e) Teachers are to identify and select students for extension work and enrichment activities in schools;
- (f) Enrichment and extension activities should be seen as one way of catering for individual learning differences at the upper end of the ability range. The label “gifted” should not be used to name a child joining these activities;
- (g) Resources from various stakeholders should be pulled together to support schools in stretching the potential of gifted students;
- (h) A more generic approach is recommended especially in primary schools.

Basic conditions

- Basic conditions required for the effective implementations of gifted education based on the above principles are:
 - (a) Strengthening and enhancement of existing **curriculum** and school activities;
 - (b) **training** for teachers and school heads;
 - (c) **networking** various stakeholders; and
 - (d) developing **assessment guidelines** and **related tools** for use by teachers and professionals.
- Apart from positive changes detected among identified students and their peers, teachers' growth in terms of attitude, teaching strategies and skills are also important.
- However, the pace and extent of provisions expansion are subject to various resource constraints in particular in the present economic climate.

Promotion of gifted education

- Enrichment and extension activities should be provided **across ALL subjects** by breadth and depth to allow **differentiated teaching strategies** and **learning opportunities** for our high potential students inside the regular classroom; matching the needs of students with the appropriate programme or learning materials in school is basically the task of all teachers;
- **Additional pull-out programmes conducted outside the regular classroom is needed** to ensure that gifted students can be given systematic training as a homogeneous group, in which they are exposed to mutual challenges, cross-discipline exploration, in-depth studies and co-operative work. The nature of these programmes can range from generic to a specialized area e.g. The International Mathematical Olympiad.

Promotion of gifted education

- While the needs of the majority of gifted students are accommodated in mainstream schools, we should also have provisions for a minority of them with other types of **special educational needs**.
- They need **educational psychologists' assessment, special educational arrangement** (e.g. early entry to primary, mentorship, etc.), **counselling service** and **school consultation service on Individualized Educational Programmes (IEP)**, etc.;
- **A mechanism to network and mobilize various stakeholders** has to be built up so that activities such as competitions, scholarships, mentorship schemes, summer camps, etc. can be sponsored or developed in partnership with tertiary institutions and various business sectors;