



Teaching Students with Autism Spectrum Disorders in Inclusive Physical Education

自閉症學生的融合體育教學

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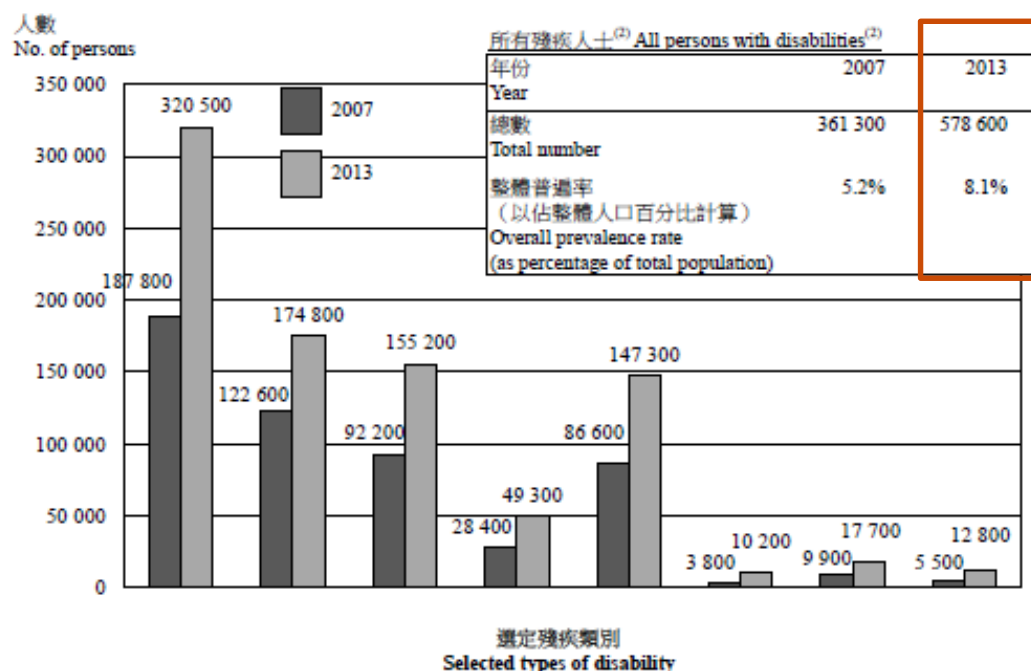
壹、自閉症學生之特徵，運動/體能表現

Prevalence of Disability 殘障患病率

- Hong Kong

圖 1 有選定殘疾類別的人士⁽¹⁾數目

Chart 1 Persons with selected types of disability⁽¹⁾



年份 / 普遍率 Year / Prevalence rate	身體活動能力受限制 Restriction in body movement	視覺有困難 Seeing difficulty	聽覺有困難 Hearing difficulty	言語能力有困難 Speech difficulty	精神病／情緒病 Mental illness/ mood disorder	自閉症 Autism	特殊學習困難 SpLD	注意力不足／過度活躍症 AD/HD
2007	2.72	1.77	1.33	0.41	1.25	0.05	0.14	0.08
2013	4.47	2.44	2.16	0.69	2.05	0.14	0.25	0.18

(HKSAR, 2015)

Note: People with ID 智障人士 are not included.

Prevalence of Disability殘障患病率

- 在2013-2014學年就讀於公營主流中小學的特殊教育需要學生，約有33,830人，並且有持續上升的趨勢。

SEN類型	小學	中學
聽障	260人	400人
視障	30人	100人
肢體殘障	120人	240人
智力障礙	750人	930人
專注力不足/過度活躍	2,850人	3,010人
自閉症	3,310人	1,660人
言語障礙	1,880人	210人
特殊學習困難	8,190人	9,890人
總數	17,390人	16,440人

（立法會融合教育小組委員會，2014）

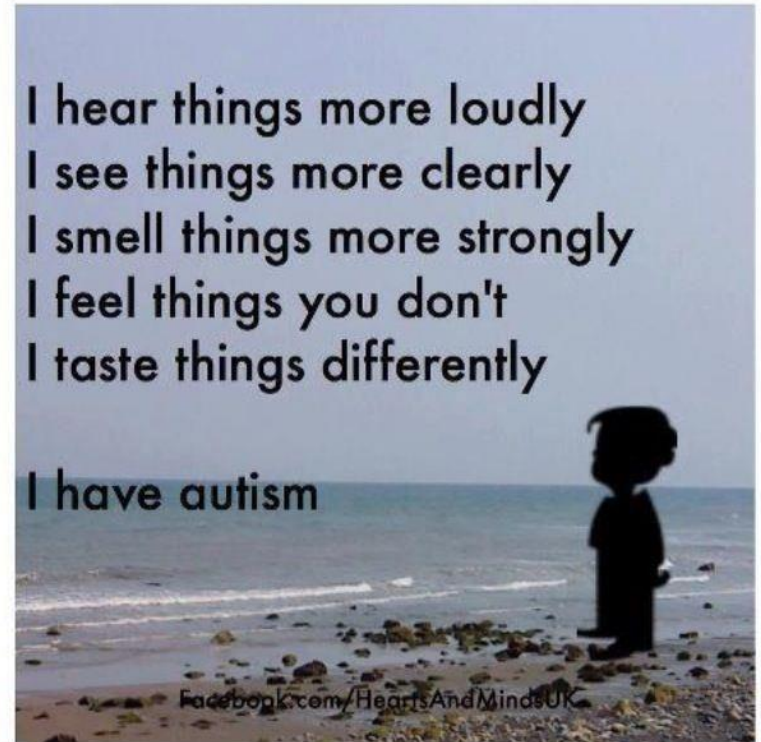
Autism Spectrum Disorders (ASD) 自閉症譜系障礙

- ASD類型
 - Autistic disorder 自閉症
 - High-functioning autism 高功能自閉症
 - Asperger's disorder 亞斯保加
 - Pervasive developmental disorder not otherwise specified 廣泛型發育障礙（非典型自閉症）(DSM-5, 2013)
- Diagnosis 診斷
 - No medical test available
 - Diagnose with **tests** and **observations**; may be detected at 18 months or younger



Autism Spectrum Disorders (ASD) 自閉症譜系障礙

- Diagnosis (cont')
 - Comorbidity 共病
 - ① Sensory problems 感知問題
 - ② Intellectual disabilities
 - ③ Seizures 癲癇
 - ④ Anxiety 焦慮
 - ⑤ ADHD
 - ⑥ Etc.



Sensory **Overload** Experiment

Autism Spectrum Disorders (ASD) 自閉症譜系障礙

- Symptoms 症狀

1. Social and communications

- ① Avoid **eye-contact** and/or **physical contact**
- ② Prefer to **play alone** and do not share **interests** with others
- ③ Do not understand personal space **boundaries**
- ④ Have trouble understanding other people's feelings or talking about own **feelings**
- ⑤ Delayed **speech and language** skills (echolalia 模仿言語)
- ⑥ Give **unrelated answers** to questions
- ⑦ Do not **understand** jokes, sarcasm, or teasing
- ⑧ Etc.



Autism Spectrum Disorders (ASD) 自閉症譜系障礙

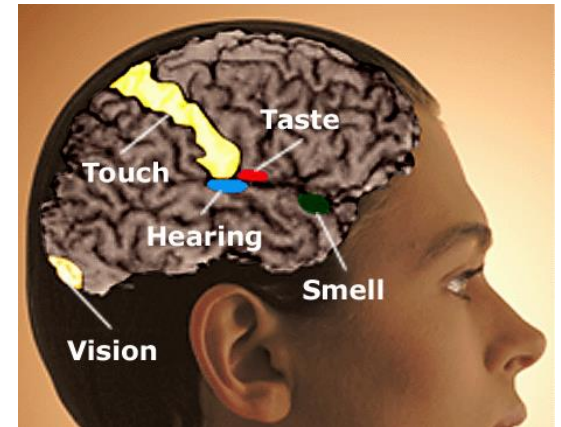
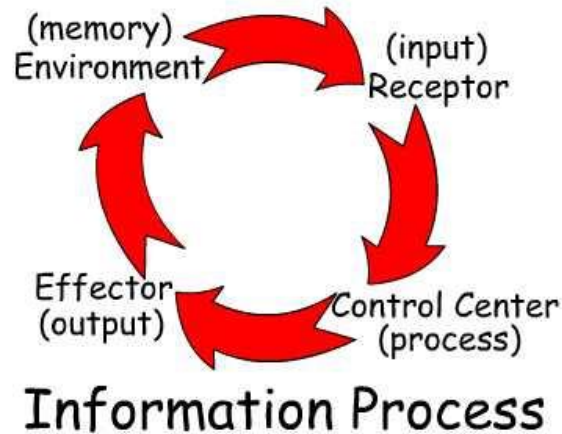
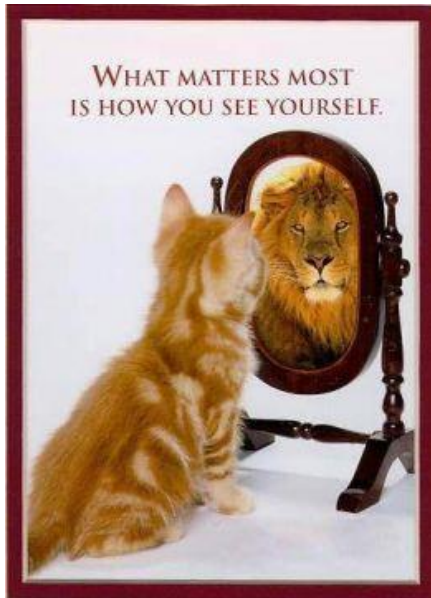
- Symptoms (cont')

2. Interests and behaviors 刻板行為

- ① Likes **parts** of objects (e.g., wheels)
- ② Have **obsessive** 強迫性的 interests (e.g., **lines up** toys or other objects, plays with toys the **same way** every time)
- ③ Has to follow **certain routines** → Gets **upset** by minor changes
- ④ Flaps hands, rocks body, or spins self in circles
- ⑤ Etc.

Autism Spectrum Disorders (ASD) 自閉症譜系障礙

- 運動/體能表現
 - ① Information processing & perceptual development 信息處理及知覺發展
 - ② Motor development & control 動作發展與控制
 - ③ Physical fitness 體適能



Autism Spectrum Disorders (ASD) 自閉症譜系障礙

- Treatment 治療
 - Medical treatment: **No medications** 藥物 that can cure ASD
 - Other treatments:
 - ① Behavior and communication approaches (e.g., applied behavior analysis 應用行為分析, sensory integration therapy 感統訓練)
 - ② Dietary approaches 膳食療法 **MAY** help
 - ③ Medication 藥物: to treat related conditions, e.g., depression, anxiety
 - ④ Education (e.g., social story 社交故事)



TREATMENT & CARE

貳、自閉症學生之評估和教學策略

Assessment評估

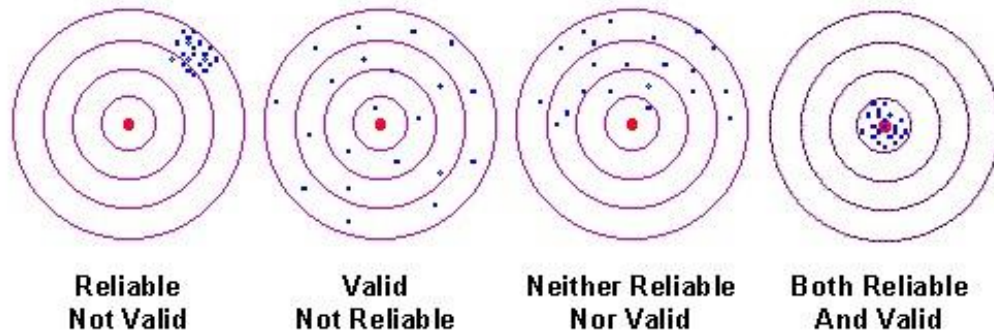
- Procedures
 - Determining **objectives**評估目標
 - **Planning**計劃 (e.g., tool selection, equipment, manpower, administration, interpretation)
 - **Administration**實施 (e.g., timing, instruction)
 - Interpretation 解釋
 - Report評估報告



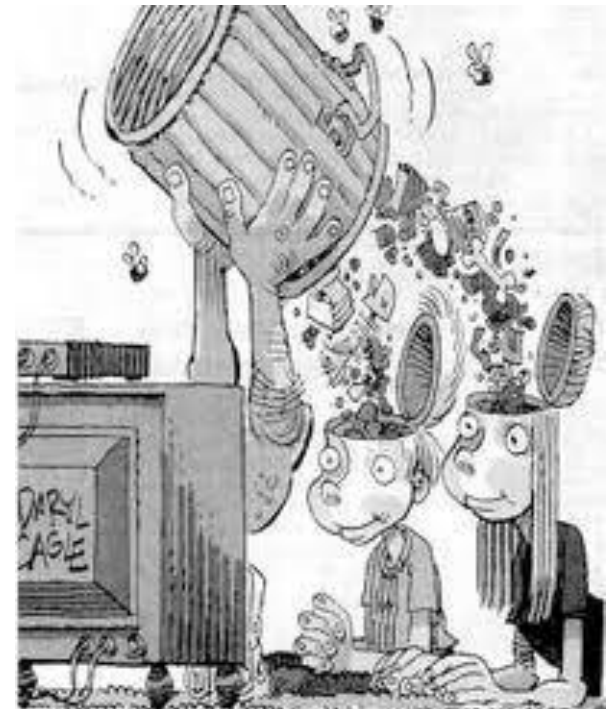
Assessment評估

- Tools評估工具

*Be confident that the assessment is **valid**效度 & **reliable**信度*



Garbage in, garbage out!




Assessment 評估

- Constructing tools 設計評估工具
 - Rubric
 - Checklist
 - Rating scale
 - ...



Assessment 評估

Level of performance	Characteristic behaviors
Mastery	Can perform the isometric push-up with proper mechanics and is able to <u>hold without assistance</u> for 25 seconds
Intermediate	Can perform the isometric push-up <u>without physical assistance</u> for 15 seconds
Intermediate/beginner	Can perform the isometric push-up with <u>some physical assistance</u> for 5 seconds
Beginner	Can perform the correct position with <u>physical assistance</u> for 3 seconds



Sample Rubric (push up)

Assessment 評估

Goal: Nick (in manual wheelchair) will demonstrate functional competence in one or more bowling games in a community facility with family.

Assessments: Observe the student and determine if he is able to:

- (a) travel to bowling facility
- (b) locate retractable bowling ball, lanes, and scoring system
- (c) bowl independently

Skills Checklist

Date Completed
Yes No

1. Selects correct retractable ball size		
2. Selects a bowling lane		
3. Aligns wheelchair up in lanes		
4. Rolls retractable ball safely		
5. Scores the number of pins knocked down		
6. Takes turn in correct order		
7. Completes a 10-frame game independently		

Sample Checklist (wheelchair bowling)

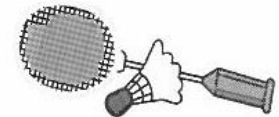
Assessment 評估

Carefully observe your assigned player and assess the listed components of game play. The purpose of this assessment is to provide honest feedback about the player's strengths and weaknesses. This is not for a grade. Use the 1–3 scale for your assessment:

1 = weakness

2 = neither weakness nor strength

3 = strength



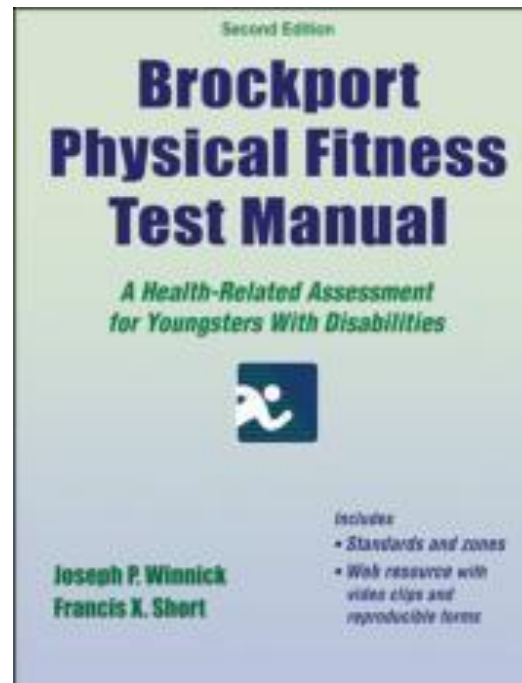
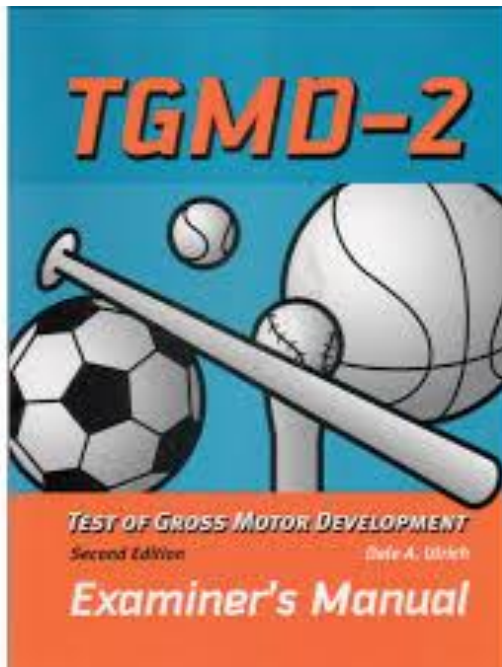
Circle your rating for each question. Does the player do the following?

Hit to the open space (where there is no opponent)	1	2	3
Vary strokes by hitting long and short to move the opponent	1	2	3
Hit left and right to move the opponent	1	2	3
Move back to home position after each stroke	1	2	3
Vary serves so that the opponent does not know what to expect	1	2	3
Keep short serves very low	1	2	3

Sample rating scales (badminton)

Assessment評估

- Selecting existing tools選取現成的工具
- Test of Gross Motor Development-2 (TGMD-2)
- Brockport Physical Fitness Test (BPFT)



Assessment評估

- Special considerations特別考慮
 - ① Provide a **positive** testing **atmosphere** 積極的測試氣氛
 - ② Avoid **fatigue** 避免疲勞
 - ③ Avoid **comparisons** 避免互相比較
 - ④ Aerobic tests come **last**
 - ⑤ Provide other assistances if necessary



Figure 5.1 PACER test: (a) touching a sighted guide and (b) with guide-rope assistance.



Figure 5.16 Modified pull-up: (a) starting position and (b) raised position.

Teaching Strategies教學策略

- Suggested physical activities
 - Walking or hiking
 - Bike riding
 - Swimming
 - Weighted backpack/vest 負重背包或背心



Teaching Strategies教學策略

- General teaching strategies
 - Create a highly **structured environment (boundaries)** and instructions結構化環境(e.g., TEACCHing)
 - ① Physical structure物理結構: actual layout or **surroundings**
 - ② Scheduling時間表: a planner indicating **what/when to do**
 - ③ Work system工作系統: what is expected **during/after an activity**
 - ④ Routine常規: a routine involves **checking one's schedule**
 - ⑤ Visual structure視覺結構: visually-based **cues**視覺提示

Teaching Strategies教學策略

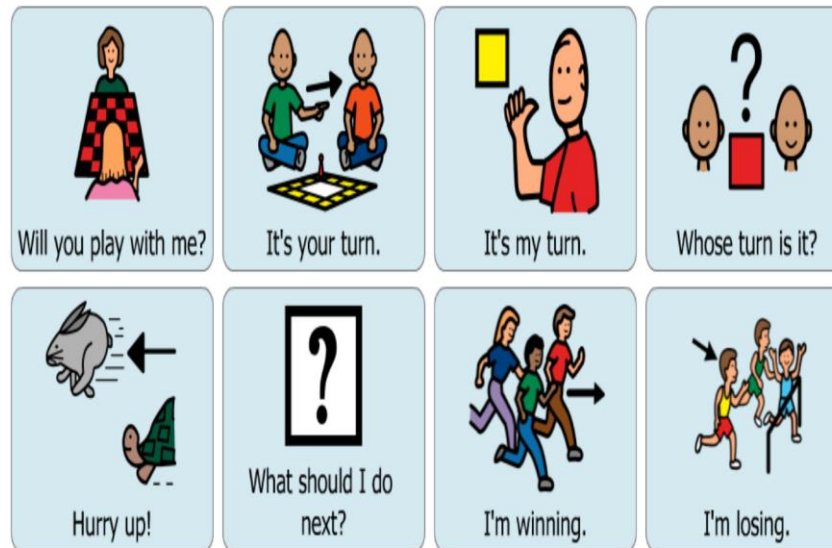
- General teaching strategies (cont')
- Offer a “preview” 視覺時間表 of the PE lesson before the class



(Houston-Wilson, 2014, p. 207)

Teaching Strategies教學策略

- General teaching strategies (cont')
 - Use selected **sensory stimulation** 感官刺激 to increase attention span
 - Instruct in an **environment** where noise, smells, lights will not interfere with learning 避免環境過度刺激學生感官
 - Use the **Picture Exchange Communication System** 圖像交換通信系統

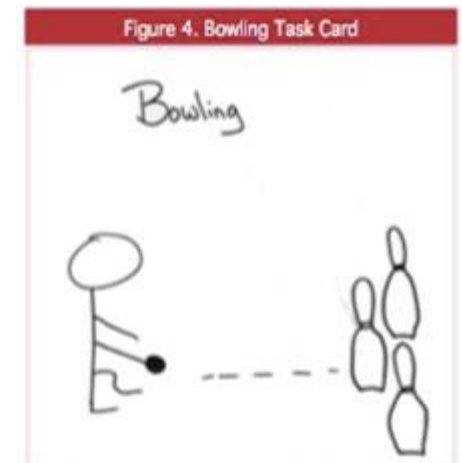


Software/Apps:

- Boardmaker
- Proloquo2Go
- First Then

Teaching Strategies教學策略

- General teaching strategies (cont')
 - Use **teaching stations** 分站 during activities
 - Use **task cards** 任務卡片
 - Keep **directions short** 講解精簡
 - Provide **ample practice time** with a high success rate



Teaching Strategies教學策略

- General teaching strategies (cont')
- Use **peer tutors** 小老師

Job description: peer buddy

Peer buddy: Molly Pyfer


Student: Cole Huettig

Physical education teacher: Dave Auxter

Physical education: Monday, Wednesday, and Friday, 8:00 to 8:45

Every time your class goes to PE,

1. Walk behind Cole in line. Take his hand if he starts to get out of line. Tell him, "Cole, walk with me, please." If he says, "No," drop his hand.
2. Sit next to Cole in the gymnasium.
3. Follow Mr. Auxter's direction so that Cole can watch you and learn from you.
4. If Cole is not doing what the class is doing, tell Cole, "Watch me."
5. During free play, ask Cole, "Will you play with me?" If he says, "No," leave and go play with other friends.
6. If Cole does play with you, tell him, "I like playing with you, Cole."
7. If Cole hits, spits, or tries to wrestle with you, leave him and tell Mr. Auxter.



Training peer tutors
in advance is
necessary!

Sample peer tutor instruction
(Auxter et al., 2010, p.194)

Teaching Strategies教學策略

- General teaching strategies (cont')
- Use **peer tutors** 小老師

Sample:

1. Locker room 更衣室: Help student **change clothes**. **Accompany** student to gymnasium
2. Beginning of class: Help student find floor spot. **Retrieve** 回收 task card.
3. Warm up: **Encourage** student to jog with the class.
4. Learning task: Provide **word cues**/directions as needed. Cue for start and stop of activity.
5. Game play: Reminder student of **rules**. Redirect **social interaction** if needed.
6. Closure: Remind student to **stay** with the class. **Reword** 重述 **questions** if necessary.
7. End of class: Assist student in **changing clothes** and **leave** locker room in a timely manner.

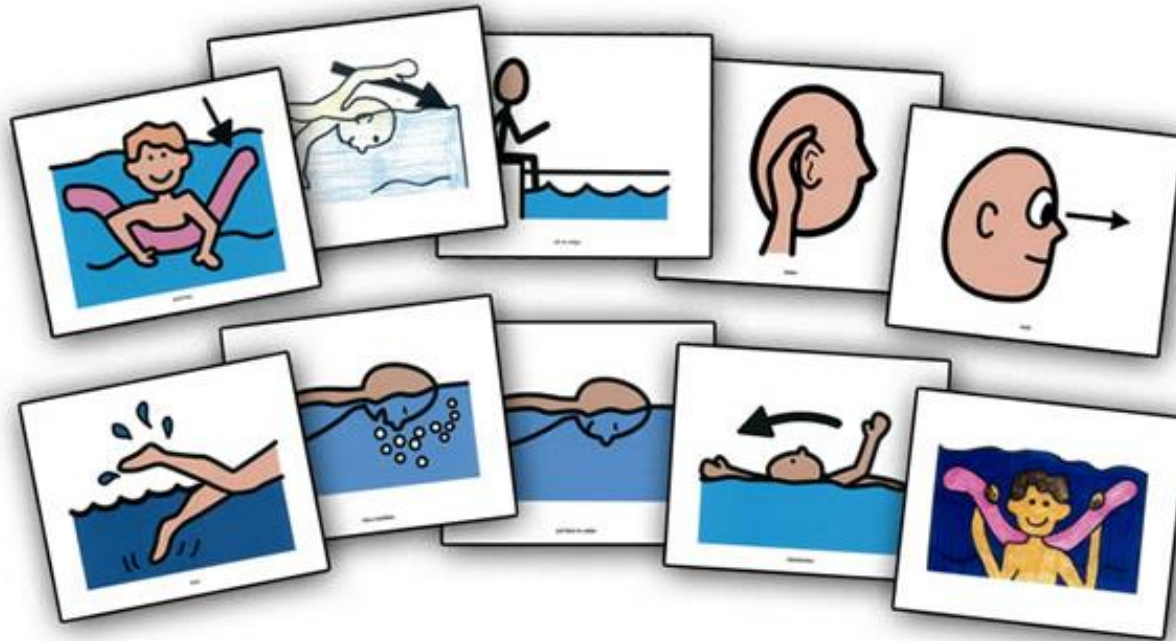
Teaching Strategies教學策略

- General teaching strategies (cont')
 - Use a **consistent behavior management**行為管理 system
 - a. Set **realistic** goals and expectations
 - b. Make sure students **know** expectations
 - c. Use **proximity control**距離控制 if a problem is arising
 - d. Provide a **reward system** for good attitudes/behaviors
 - e. Be **consistent and fair** with your rules and consequences
 - f. **Get to know** the students and show interest toward them **outside of** the PE classes

Teaching Strategies教學策略

- 自閉症學生出現以下問題，如何處理或解決問題？
 1. 體育課前下大雨，必須取消，他/她堅持要去球場。
 2. 上課鈴聲響起后，會不停地在課室門口來回走動。
 3. 進入更衣室之後不想離開，或離開時表現得很焦慮。
 4. 熱身活動開始之後，除了他/她之外都在跑圈。
 5. 上課過程中經常捂住耳朵或咬自己的手。
 6. 突然間地大叫，扔東西，或破壞東西。
 7. 進行接力活動（ $A \rightarrow B \rightarrow A$ ），從A跑到B后停住，不跑回A處。
 8. 分組時候，沒人願意跟他/她一組。
 9. 分組活動進行時，跑到其他組的活動區域。
 10. 下課前集合哨響，不懂得要站哪裡。

Teaching Strategies教學策略

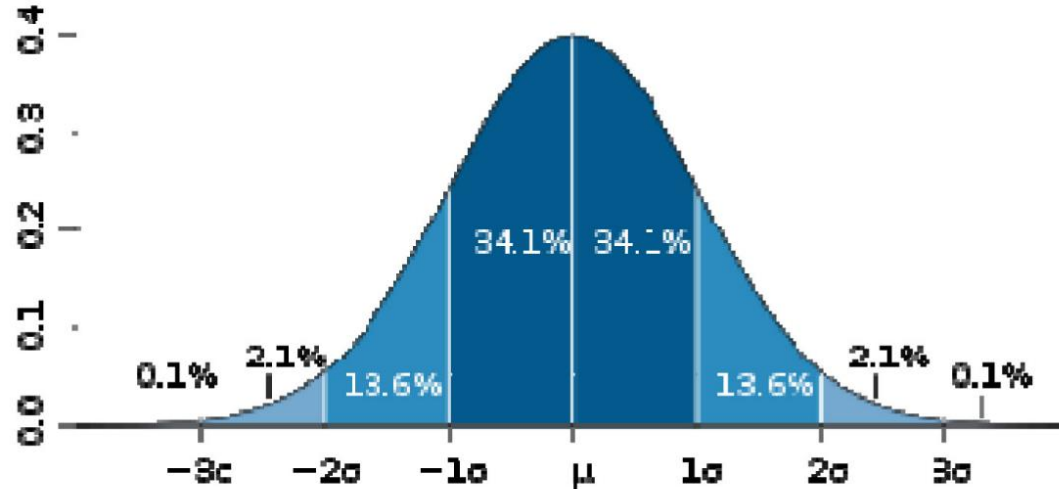


Putting all together!

How to apply the aforementioned strategies in teaching an inclusive PE class (P5; fitness lesson) with a student with ASD including in?

Final Remarks結束語

- 自閉症學生個個好吾同！
- Some need **a lot of help** while others need **less**



- 透過適當的教學調試很可能能滿足自閉症學生的學習需要
- Let's be brave in taking one more step further for the **Quality PE!**

Thanks

謝謝聆聽！



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