

Bridging Educational Gaps: An AI-Powered Approach to Interactive Learning and Resource Equity

跨越教育鴻溝： 人工智能驅動的互動學習與教育資源均衡方案



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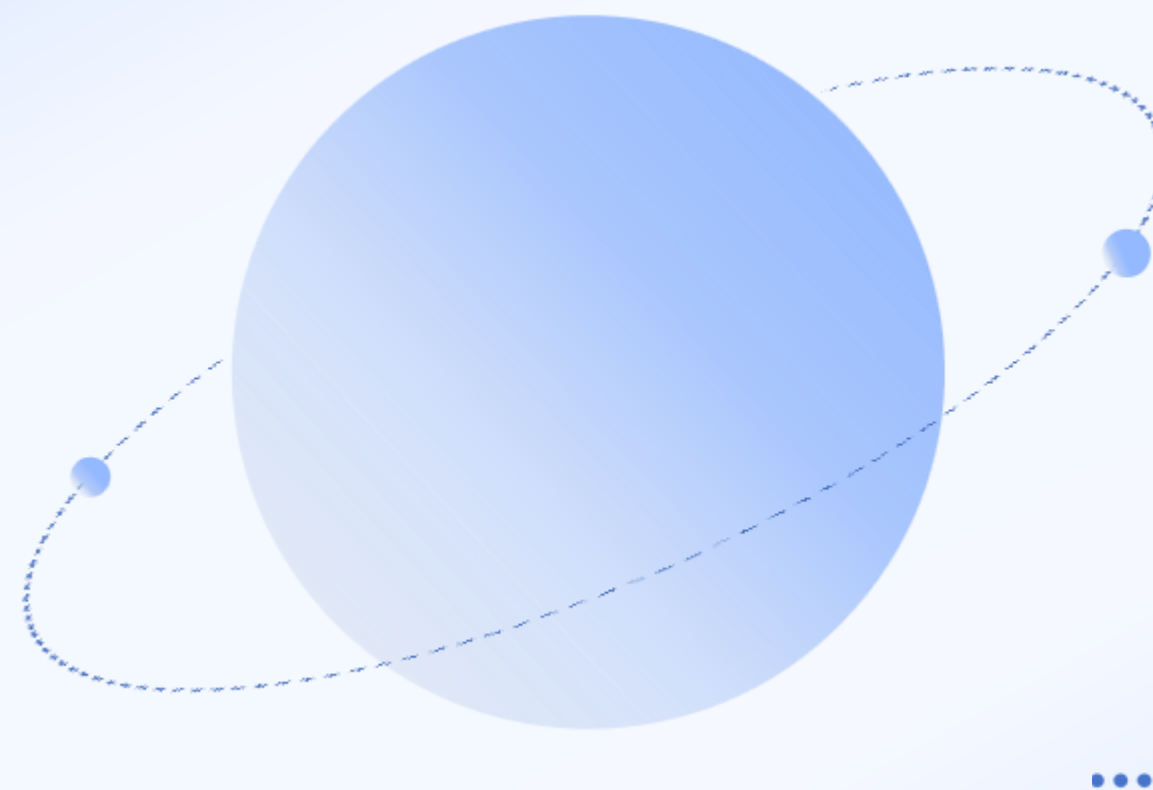
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01 Introduction

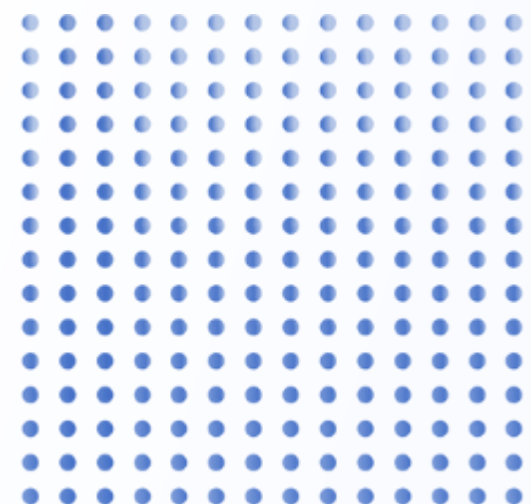
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The Problem



Tutoring Participation Rate and Economic Thresholds



High overall participation rate, but significant wealth gap:

67.5% of secondary school students in Hong Kong have participated in after-school tutoring, yet children from low-income families struggle to afford it due to financial constraints.

Tutoring dilemmas for impoverished children:

A 2018 survey by the Hong Kong Society for Community Organization showed that nearly 85% of impoverished children surveyed stated they "needed tutoring or homework guidance," but less than 60% actually participated. Among them, 80% relied on **free tutoring from schools or voluntary organizations**, but such resources had limited spots (only 26% of students were successful in securing a place), leaving nearly half of the students without tutoring support.

Tutoring Participation Rate and Economic Threshold			
Indicators	All Students	Households with Monthly Income < HK\$20,000	Data Source
Participation Rate of Paid Tutoring	71.3%	42.1% 15.2% (compared to 2023)	"Education Fairness Index" Hong Kong Institute for Policy Research
Proportion Unable to Afford Tutoring Fees	-	61.7%	Community Organization Association (March 2025)
Coverage Rate of Free Tutoring Quotas	18%	Only covers 12% of Low-income Students	Federation of Education Workers Survey Report (2025)

Private tutoring has long been a thriving business in Hong Kong. According to a 2012 survey conducted by the Federation's Youth Research Centre (YRC), it was noted that more than 50% of secondary students enrolled in private tutoring services, while approximately 22.1% of primary students in Primary Three or lower received private tutoring at the same time.

Another study by market research company Ipsos (2016) showed that up to 3,300 schools provide tutorial courses for primary school pupils, and about 2,900 schools targeted secondary school students.

There are significant numbers of education centres providing a wide variety of choice for the public, including classes in musical instruments, dancing, artwork, languages, sports, martial arts, or even actuarial science, often referred to as enrichment programmes. Many learning centres also offer classes in academic areas such as English, Mathematics, Chinese, and STEM, as well as for preparatory and admissions exams, including SAT and TOEFL.

From our study conducted with 342 students, 19 parents, 20 teachers, and 20 tutors this spring, we hope to shed new light on the existing factors that continue to contribute to the booming industry of private tutoring in Hong Kong.

Students' responses

342 students from the primary and secondary levels participated in our month-long survey, where statistics revealed that a high percentage of them have attended private tutoring lessons (96.7%), with 72.2% still attending tutoring classes.

Participation in Private Tutoring

Q1: Have you participated in private tutoring?



Q2: Are you currently still receiving in private tutoring?



Method of Private Tutoring

Q3: How did you have your private tutoring lessons? (More than one option can be selected)



a. The private tutor comes to my home
26%



b. Online
27.2%



c. Going to a tutorial class
77.5%



d. Going to tutor's home
9.4%

Time Allocation for Private Tutoring

Q4: How much time do/did you allocate time for private tutoring?



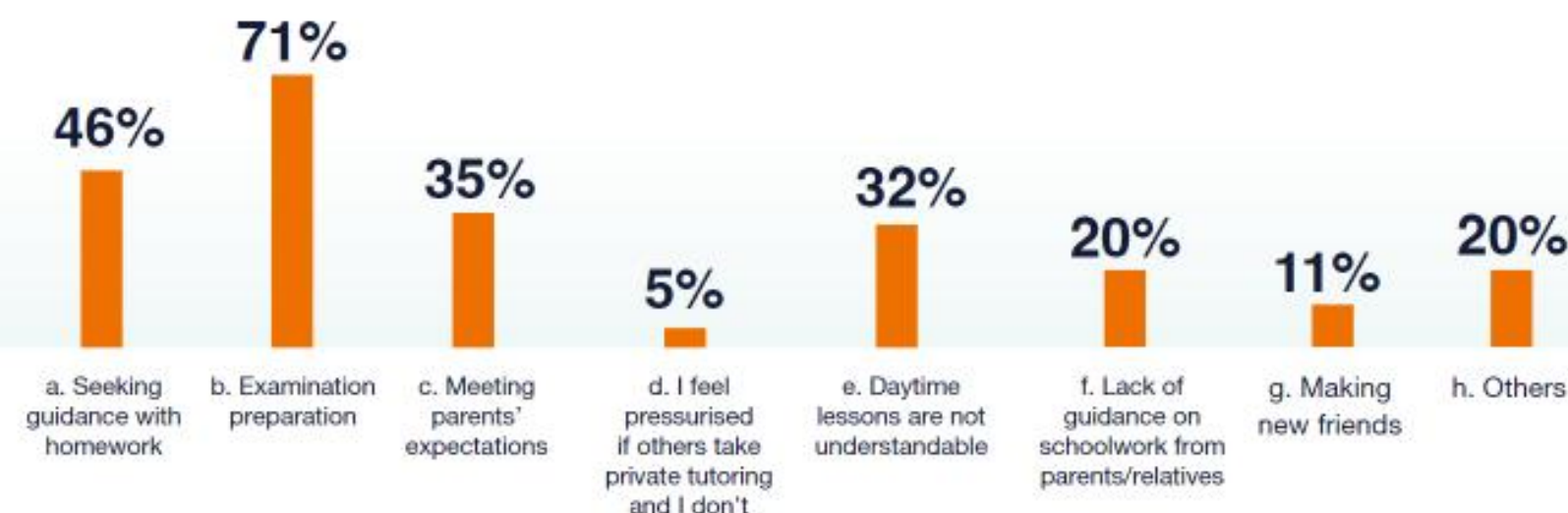
Number of Subjects Received for Private Tutoring

Q5: In how many academic subject(s) do/did you receive private tutoring?



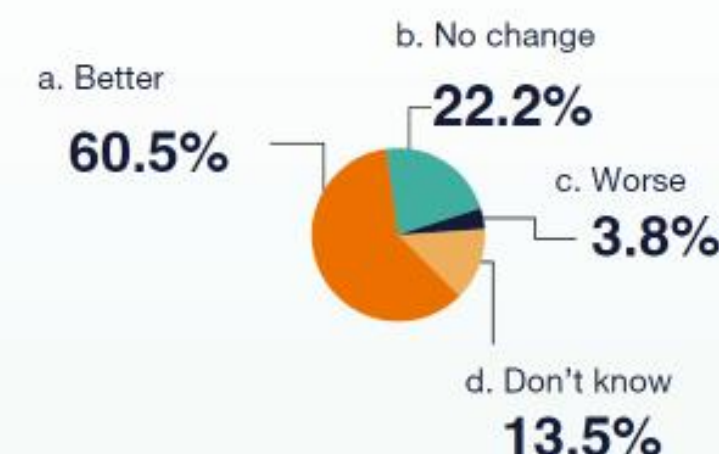
Top Reasons for Undertaking Private Tutoring

Q6: What are some of the reasons for undertaking private tutoring?
Please select up to three reasons.



Overall Academic Performance after Receiving Private Tutoring

Q7: Please rate your overall academic performance after receiving private tutoring.



2024 Tracking Report on Learning Engagement of Hong Kong Secondary Students

Research Subjects:

3,044 students from Secondary 1 to Secondary 6

Low Classroom Participation

- Only 19.5% of students indicated that they "often take the initiative to participate in classroom discussions";
- 43.1% admitted to "being easily distracted in class" (a 12.3% increase compared to 2019).

Technical Application and Interactive Needs

- 67.3% of students believe that "incorporating technological tools (such as VR/AR) can enhance interest";
- 58.4% expect "increased group cooperation or experimental sessions".



Deep-rooted One-Way Teaching

38.7% of classrooms still rely mainly on teacher lecturing, with less than 15 minutes of interaction per class.

Section 4.2: Classroom Participation and Distraction Behavior Data (43.1% are easily distracted in class)

Appendix B: Students' Demands for Technology-Interactive Teaching (67.3% support the introduction of VR/AR)



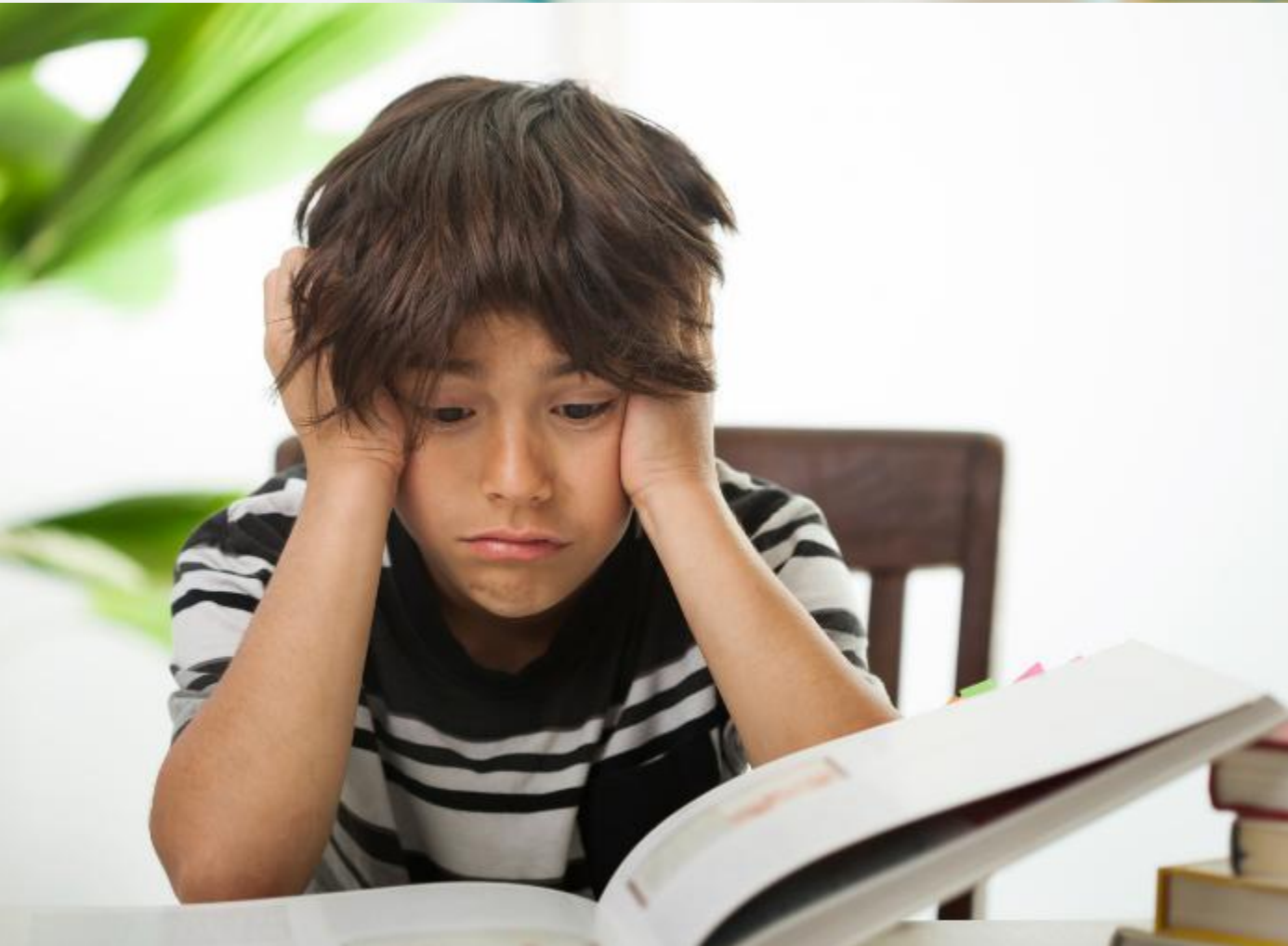
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Rote-Learning Limitations



Critical Thinking Deficit

Traditional memorization

- fails to foster critical thinking, leaving students ill-equipped for real-world challenges.
- emphasizes short-term memory over long-term understanding.

Students don't know what they don't know.

The limitations of traditional teaching:

- Fixed progress fails to meet personalized learning needs.
- A lack of opportunities for independent inquiry and practical exploration.

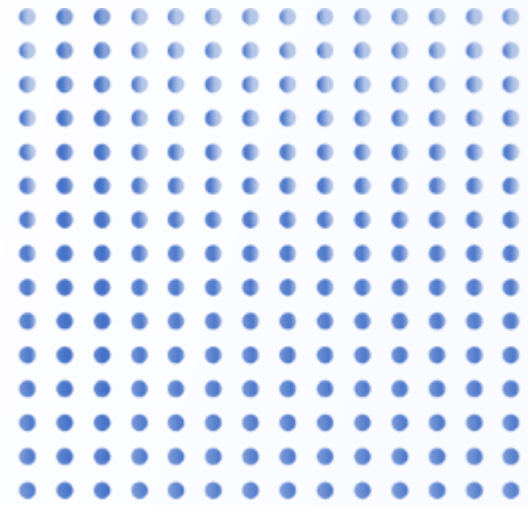
Core requirement:

- Students need to master the initiative in learning.

New Opportunities: Special Allowance for Self-Directed/Autonomous Learning

Key Support Directions: Cultivating students' self-monitoring strategies / Self-directed learning

Core Objectives: Building an ecosystem for autonomous learning



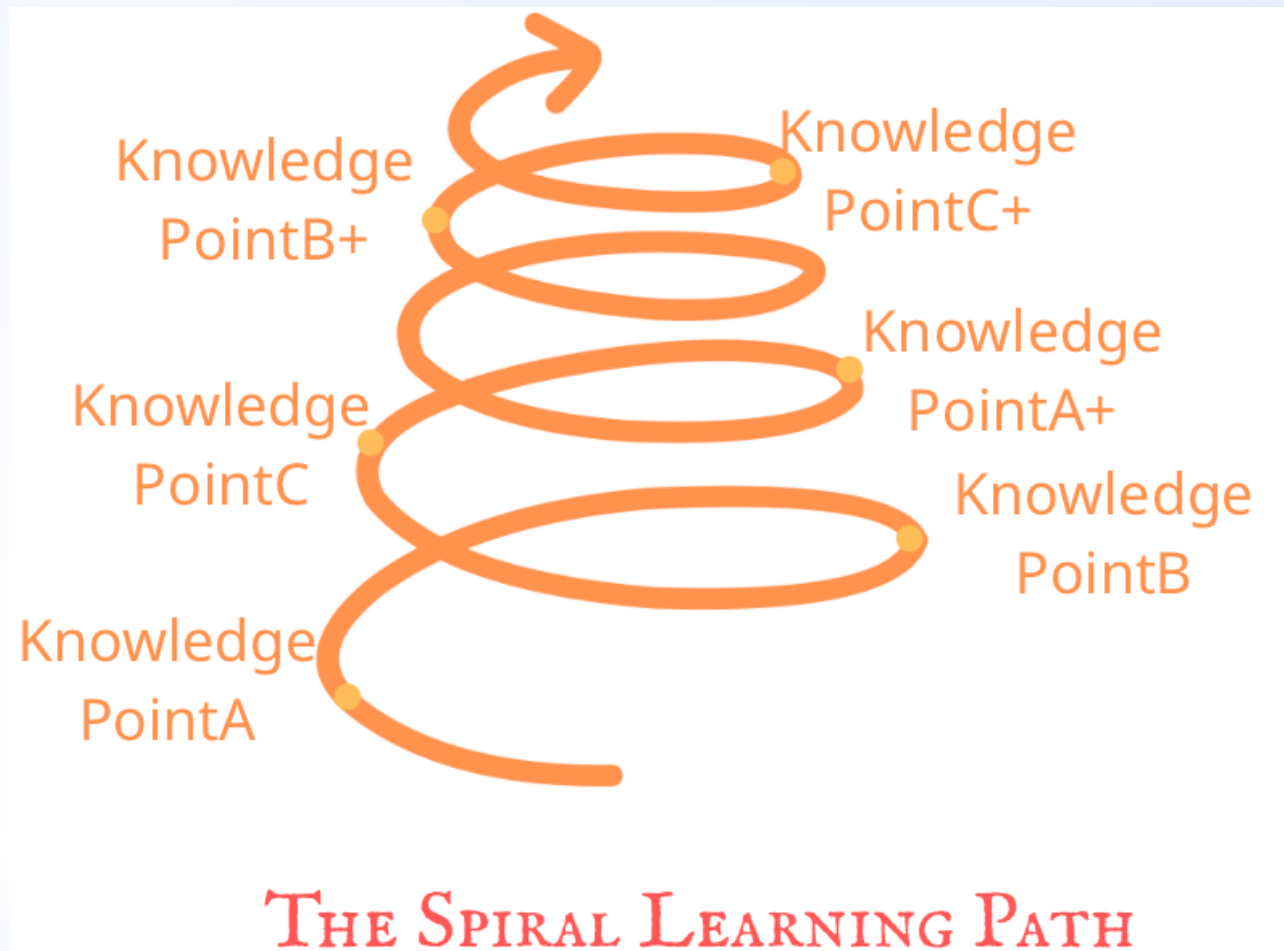
Theoretical Foundation



Bruner's Spiral Learning Theory



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Cyclic Revisiting

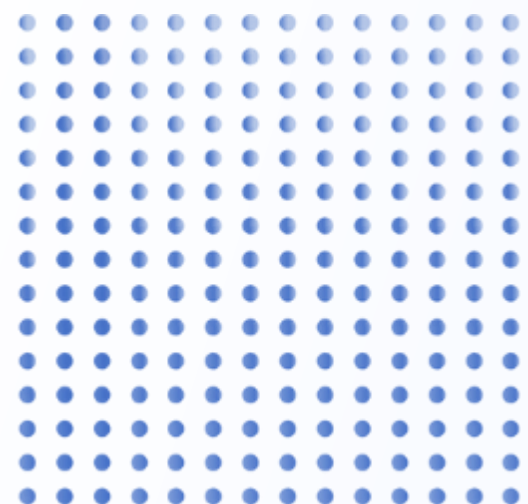
- Concepts are revisited repeatedly, each time at a more complex and abstract level, building a deeper understanding.
- promoting long-term retention.

Traditional Learning vs Spiral Learning

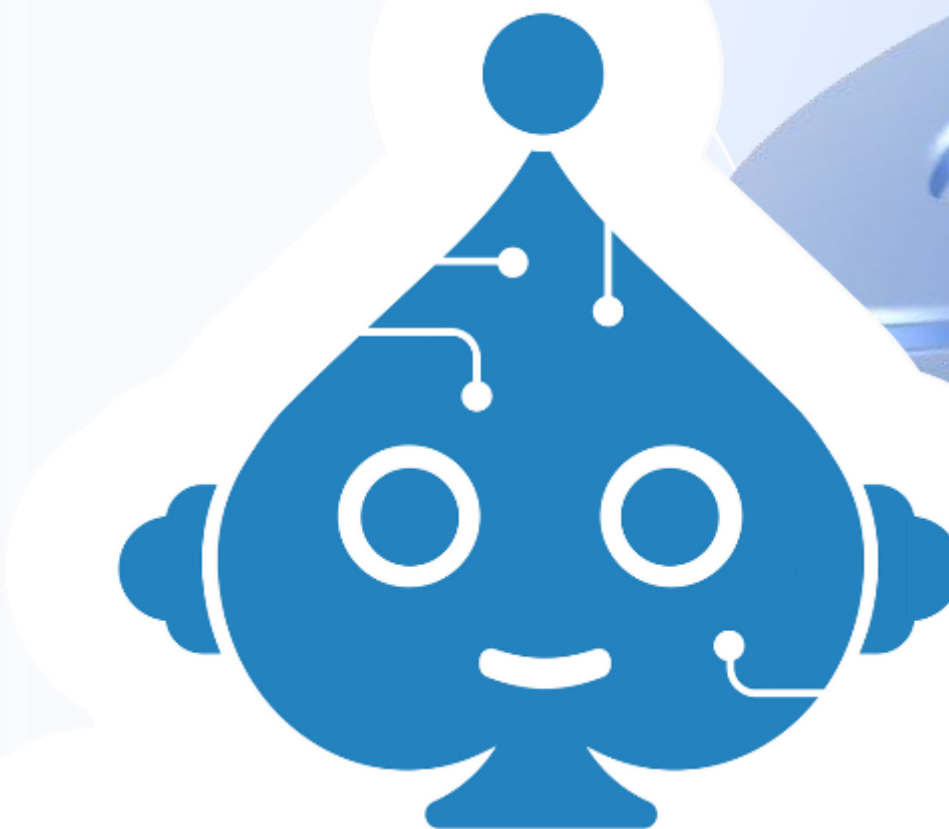
- Linear/Rote Learning follows a one-time, sequential memorization path.
- Spiral Learning encourages continuous exploration and reinforcement.



THE TRADITIONAL LEARNING PATH

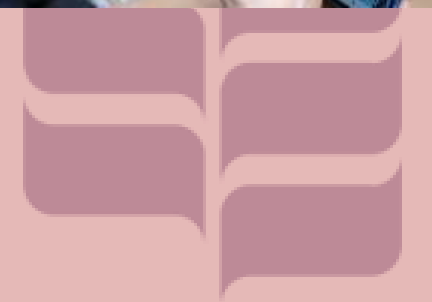


Our AI Solution



ACEi
teach

An AI-Enabled Adaptive Learning System





Acel
Teach

 請輸入賬號

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[忘記密碼](#)

注冊

登錄



SMOKING AWARENESS WORKSHEET

Name: _____

Date: _____

Article 1:

On May 31, we celebrate World No Tobacco Day. The Hong Kong Council on Smoking and Health (COSH) wants to use this day to support plain packaging for tobacco products in Hong Kong. This means making cigarette packs look the same to help people understand the dangers of tobacco and to make them less appealing to young people and smokers.

Since 2007, Hong Kong has required health warning pictures on tobacco packages, covering 50% of the front and back of the cigarette pack. However, tobacco companies still create different designs to attract buyers. Ms. Lisa Lau, the Chairman of COSH, says that COSH will push the government to make plain packaging for tobacco products in Hong Kong. This will stop tobacco companies from using attractive designs to sell their cigarettes.

Gist:

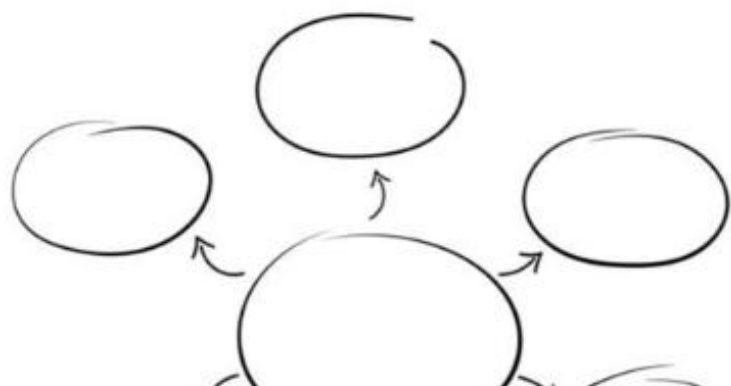
World No Tobacco Day is on 31 May. Hong Kong's anti-smoking group (COSH) wants:

- All cigarette packs to look the same
- Remove colorful designs that attract young people
- Show clear health warnings

Short Answer Questions:

1. Why do people start smoking?
2. Do you know any smokers?
3. Should cigarette ads be banned?
4. Is public smoking right or wrong?
5. Does the public smoking ban work?
6. What if Hong Kong stopped selling cigarettes?

Mind Map:



Health	健康	General wellness (e.g., 健康風險 "health risks").
Environment	環境	Ecological impact (e.g., cigarette waste).

1. Smoking causes _____ (serious, funny) sickness and can lead to early (death, sleep) _____.
2. Cigarettes have a drug called (nicotine/cola) _____, which makes it hard to (jump/quit) _____.
3. Second-hand smoke can hurt (crocodiles/babies) _____ and children.
4. The WHO made (No Shave November/World No Tobacco) _____ Day on May 31st each year.
5. Plain cigarette packs have (adorable/graphic) _____ warnings and no (cookie/colourful) _____ designs.
6. Many countries ban smoking in (mountain/public) _____ places to protect people.
7. E-cigarettes, or (vapes/vegetables) _____, are not safe and have (health/sleep) _____ risks.
8. Quitting smoking can make you healthier and less likely to get (diabetes/cancer) _____.

Presentation:

Please use the following template for your presentation:

Student A: Good morning everyone. Today we need to discuss planning a smoking awareness campaign for our school. Perhaps it's best for us to start brainstorming ideas. We need to choose between a poster competition and an assembly presentation. In my opinion, a poster competition sounds like a better idea as it allows more students to participate creatively.

Student B: You have suggested a good idea, but we need to consider some major issues such as the impact on students. I think it's more effective for us to organize an assembly presentation because it reaches all students at once.



Kinki



智能螺旋學習引擎



自適應操練



錯題庫



我的金幣

Measurable Results



01

Autonomy Support

60-70% of parents agreed the app "basically" or "fully" supports self-directed learning.

Key strengths cited:

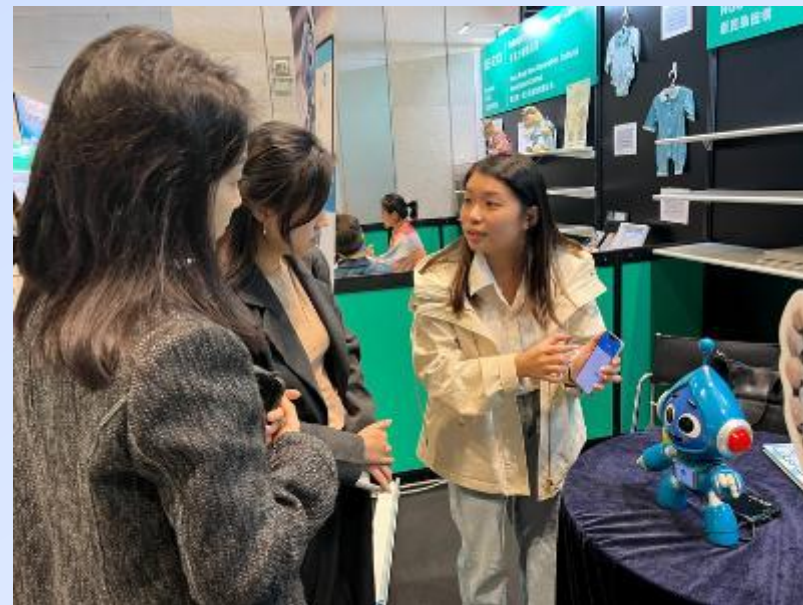
- Structured resources (e.g., clear learning paths, step-by-step guidance).
- Interactive tools (e.g., in-app explanations, practice with instant feedback).
- Exploration-friendly design (e.g., searchable libraries, optional challenges).

02

How the App Facilitates Self-Directed Learning

Feature	How It Helps Students	Parent feedback
Guided Learning Paths	Breaks lessons into manageable steps	My child can follow the app's plan without constant reminders.
Instant Feedback & AI explanation	Allows students to independently correct mistakes.	The auto-graded exercises help her learn on her own.
Adaptive Difficulty	Adjusts challenges to skill level, fostering confidence and persistence.	Problems get harder only after she masters basics.

Resource Equity



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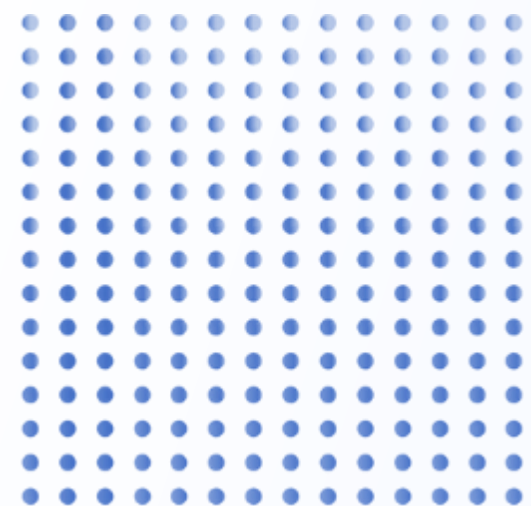
Partnerships

Partnerships with local NGOs and schools to distribute the app in disadvantaged areas, ensuring **equitable access to education**.

Low-Cost Access

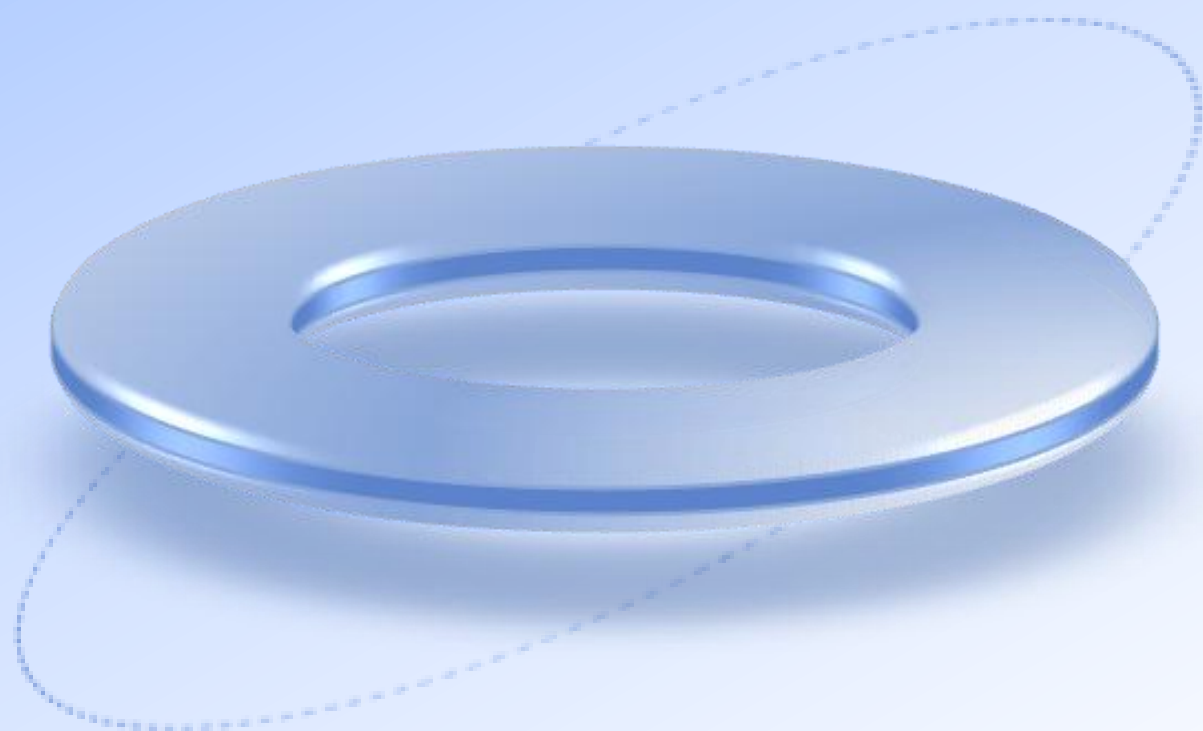
Our app offers **low-cost access** to high-quality educational resources, making it **accessible to underprivileged students**. This helps bridge the digital divide.





Our Vision

Expand the app to cover more subjects and regions, reaching a wider student population.
→ to maximize the impact of the AI solution



THANKS

Q & A

Our booth: B11 Humix

Our booth: B11 Humix

