香 港 資 優 教 育 學 苑
The Hong Kong Academy for Gifted Education

HKAGE contributions to Education Innovations

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Challenges in Education HK is facing

Like many parts of the world, HK's primary and secondary education system is facing a lots of challenges in recent years, including

- *dropping number of students entering Science/Math domains since 2010*
- *Dropping performances in PISA and other similar assessments*
  - *HK students show lack of self-confidence and interests*
- *HK students lack of creativity and real-life problem solving skills*

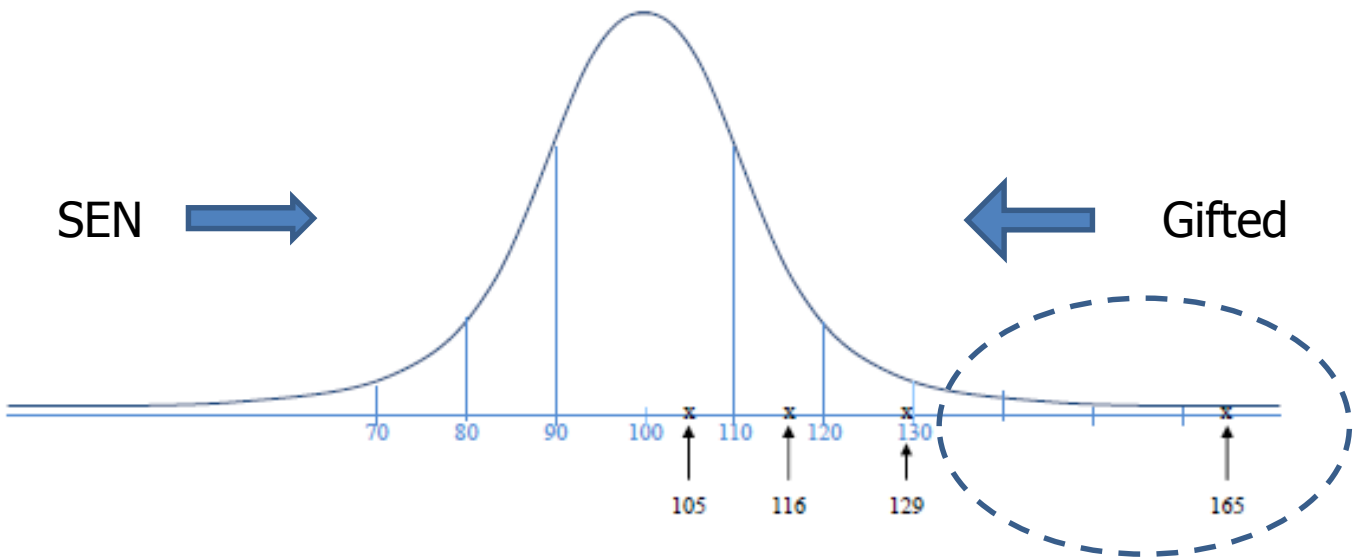
- *Core Problem: Exam.-driven education system with rather narrow focus on language-related skills*

Test-driven education is worst!

Students lose individuality and creativity (also too focus on language-related skills)!

Role of HKAGE in current HK Education System

- Current HK system: Students are educated to fit in the system



HKAGE: *a small EDB owned NGO building special programmes for the exceptional gifted students aged 10-18; in particular SEM related programmes is a current focus!*

Our philosophy

- *We build programmes that are not found in current HK primary and secondary schools*
- *Gifted Education for all –* most of our developed programs and teaching approaches are applicable *in principle* to normal schools also
- *We have to address both the academic (cognitive) and affective needs of students*
  - *We involve not only students, but also parents (and teachers) in our programmes*

Examples of our programmes

- *"Thinking Like a Scientist"* (TLS) approach to teaching science and mathematics in primary schools:
- *Basic idea:*
  - *The goal of (general) science education is not teaching students current scientific knowledge but to stimulate all students to think like scientists.*
  - *In primary school level, the best way to teach science is to use games to facilitate students to think like scientists!*

- A group of scientists and mathematicians at HKUST has worked on this direction for the last 15 years, and have developed ~374 hands-on activities in Science and ~127 activities in Mathematics.
- These activities are grouped together into workshops offering to P.3-P.6 primary school students with roughly 5 -6 activities in each workshop through a self-finances scheme.

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- HKAGE and HKUST is now collaborating to turn this games into activities that can be carried out in primary school class-room setting!
- We are going to initiate a pilot scheme test-running these activities in 10-15 primary schools in year 2018-19.
- We wish the approach can become a regular practice of HK primary schools in the long-run.

Examples of our programmes

- *"Thinking Like a Scientist"* (TLS) approach to teaching science and mathematics in primary schools:
- *Basic idea:*
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- We are going to initiate a pilot scheme test-running these activities in 10-15 primary schools in year 2018-19.
- We shall also collaborate with Prof. Sherson's group (keynote speech) to develop on-line games

Examples of our programmes

- *Mentorship Program with strong affective support*
  - *Common Problem with mentorship program in HK – Mentee has no incentive to meet mentor regularly ⇒ no significant effect!*
    - *Good mentor-mentee relationship is needed for a successful mentorship program, and this is in the regime of affective (non-academic) support*

  - A HKAGE based Mentorship program named (HK Gifted Apprenticeship Program (HKGAP) was initiated in Nov. 2017. The program is led by an experienced educator that
    - *facilitate students to communicate and work together with others through monthly students meetings*
    - *help students to communicate with their mentors*
    - *facilitate parents/ teachers support*
    - *(address emotional difficulties of students when facing pressure)*

Examples of our programmes

Both students and mentors are selected and matched carefully. The scheme started at Nov 2017 with 14 pairs of masters and student apprentices. Excellent feedback from apprentices, masters and parents has been received so far.

Examples of our programmes

- *"Big History" approach to teaching history/humanity/science*

  - BIG HISTORY references:
  - *- David Christian*
    (Book, video,….)

- Big History tells the story of the Universe from the Big Bang to the present, a time span of 13.8 billion years.
- Big History is a scientific origin story, based on the best evidence that scientists and historians have compiled to date. As new and better evidence is found, the story will be updated.
- Among the questions that big historians tackle are: What's our place in the cosmos? What are the big turning points in the history of Homo Sapiens? What does it mean to be human? Are we living at a turning point of planetary/human history?

Examples of our programmes

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The History of Homo Sapien
-Yuval Noah Harari

Can we understand/predict the future of Homo Sapien with the help of Big History!

Examples of our programmes

- *"Big History" approach to teaching history/humanity/science*
  - *The program was first started in 2017 in collaboration with HKUST.*
  - *IN 2018, the Big History and Collective Learning program offers students a 6-day intensive Summer Day Camp to explore of how humanity will/should cope with the coming challenges of Sustainability and Artificial Intelligence in the 21st Century:*
    - *Day 1 consists of two keynote lectures on the above two themes.*
    - *Day 2 to Day 5 consist of a series of lectures covering related topics in Human History.*
    - *Students present their preliminary ideas on Day 6*
  - *The Camp will be concluded by a student conference on late September with David Christian as our keynote speaker!*

Thank you very much!