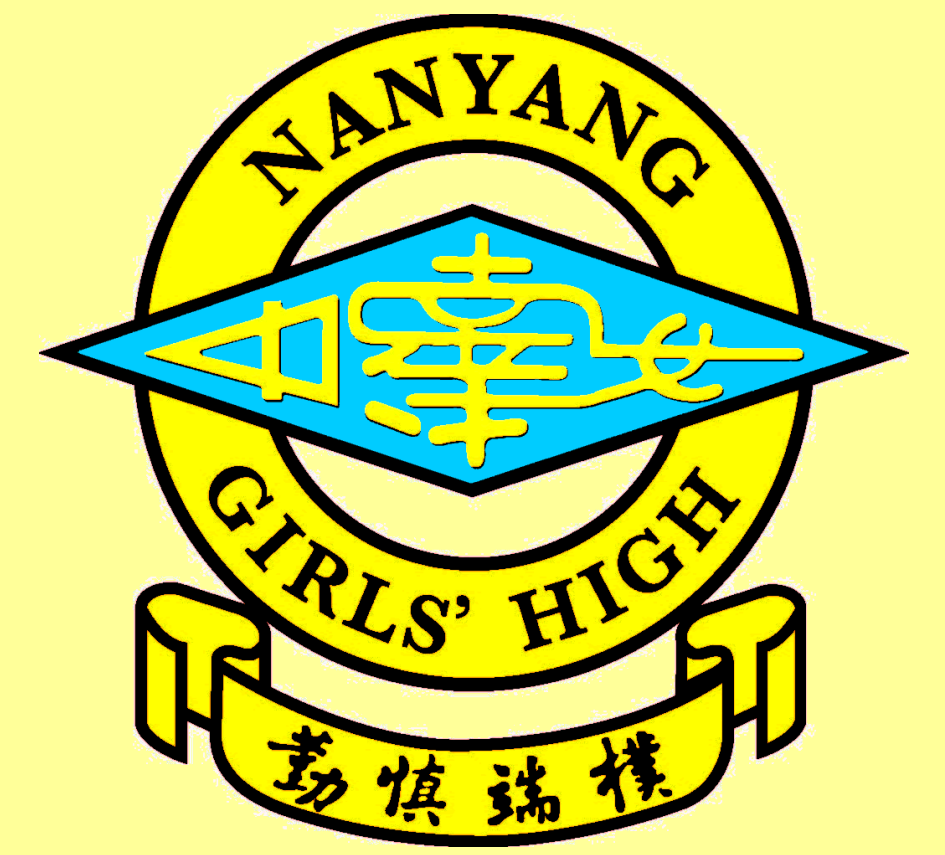


# Alice in Wonderland: Nurturing Students for the 21<sup>st</sup> Century: Disciplinary Literacies and Interdisciplinary Dispositions\*

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## 1 The New Nanyang Curriculum



- Founded in 1917, Nanyang Girls' High School is one of Singapore's premier all-girls' schools.
- The school caters to 1700 students ranging from 13 (Sec. 1) to 16 (Sec. 4) years of age.
- Sec. 1 students at Nanyang Girls' High School embarked on a new interdisciplinary curriculum in 2016. The curriculum is a multi-faceted approach to learning, composed of themes that overlap and reinforce core skills.

## 2 Rational for a New Curriculum

"Students should have an innate curiosity of wanting to know what is happening around them."

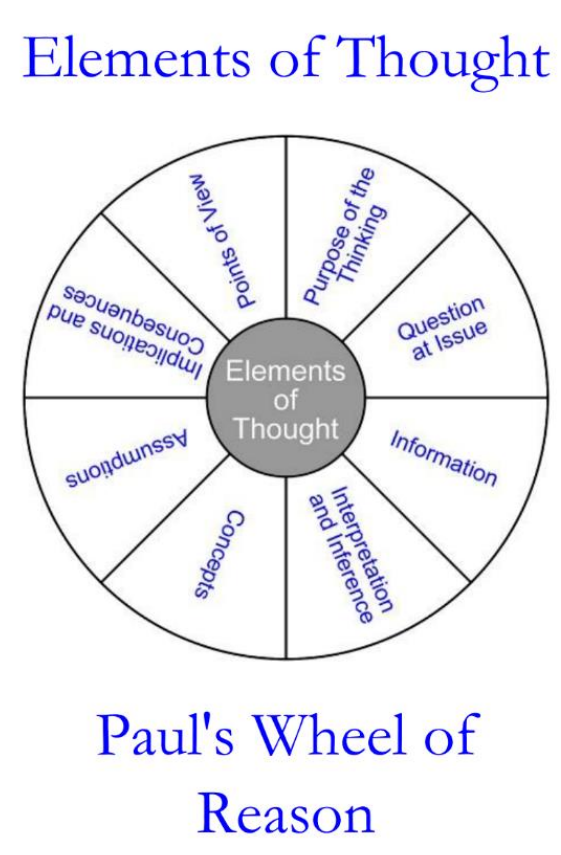
Mr. Ng Chee Meng, Minister for Schools, 30<sup>th</sup> Dec. 2015.

- The objective of the new curriculum is to move beyond regular classroom teaching in order to equip students with skills that are necessary for life in an ever-changing world.
- Preparing students for a V.U.C.A. future – volatile, uncertain, complex and ambiguous.
- Learning is based around concepts that are relevant to the students.
- Factual information is limited – students are required to collaborate and make connections, thinking critically and creatively in order to solve authentic problems.

## 3 Designing the New Curriculum

### 3. Listening to Others with Empathy and Understanding

- Stop talking and listen! Don't interrupt! Be...
- Pay attention to body language and voice.
- Paraphrase, clarify, examples of the discussed to de...



- "Children must be taught how to think, not what to think."  
Margret Mead
- A core team of approximately 12 teachers, representing different subjects, were tasked with designing the new interdisciplinary curriculum. The core team met for two hours every week over the year.
- The new curriculum was designed around *macroconcepts* such as *evidence* and *change*. These were used to forge connections between different disciplines.

## 4 Implementing the Lessons



- Each subject begins with students unpacking the nature of the discipline (disciplinary literacy), e.g. *The Nature of Science* and the principles of History.
- Certain macroconcepts are used throughout the subjects in order to organise the students' thinking and understanding, as well as make connections between different disciplines, e.g. how is *evidence* used in Science similar to / different from how *evidence* is used in History?
- Students reflected on their thinking and learning using the sixteen *Habits of Mind*.

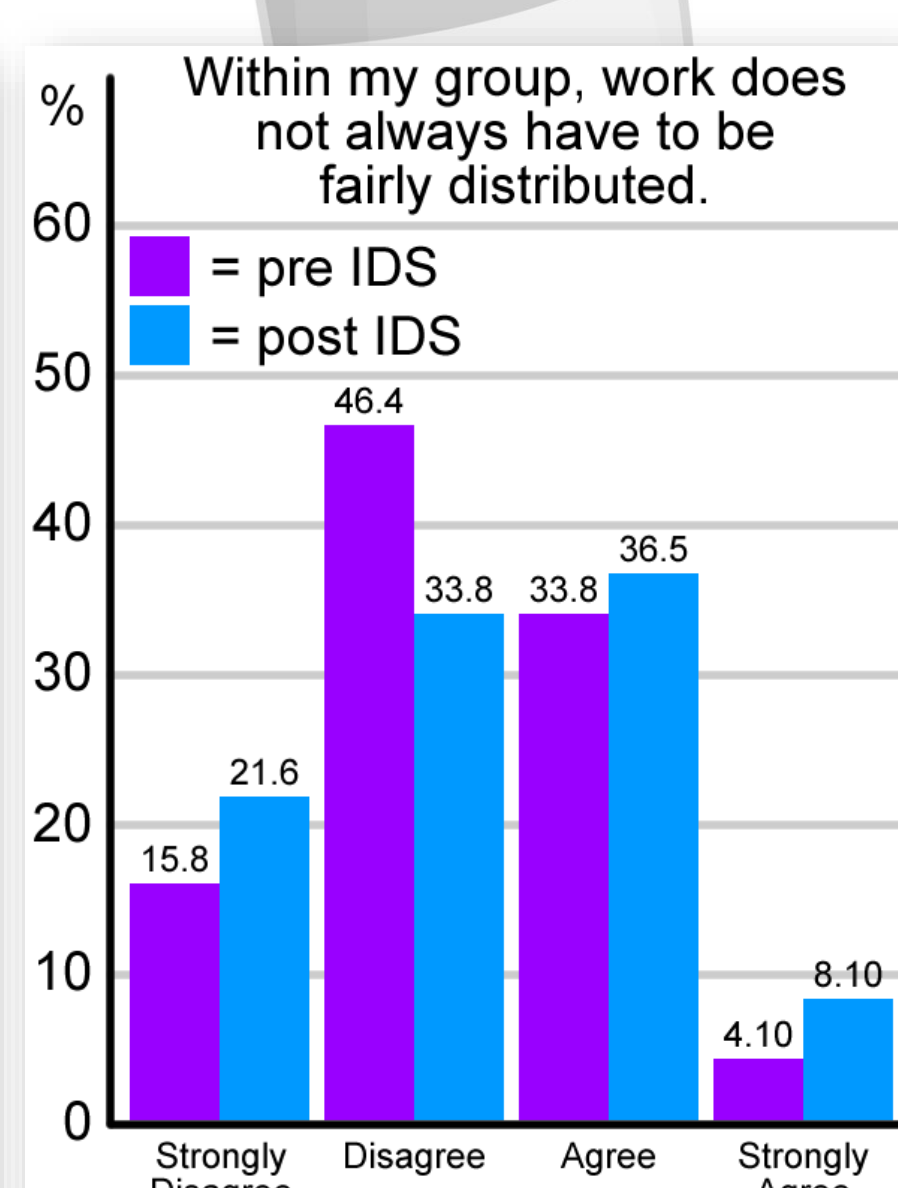
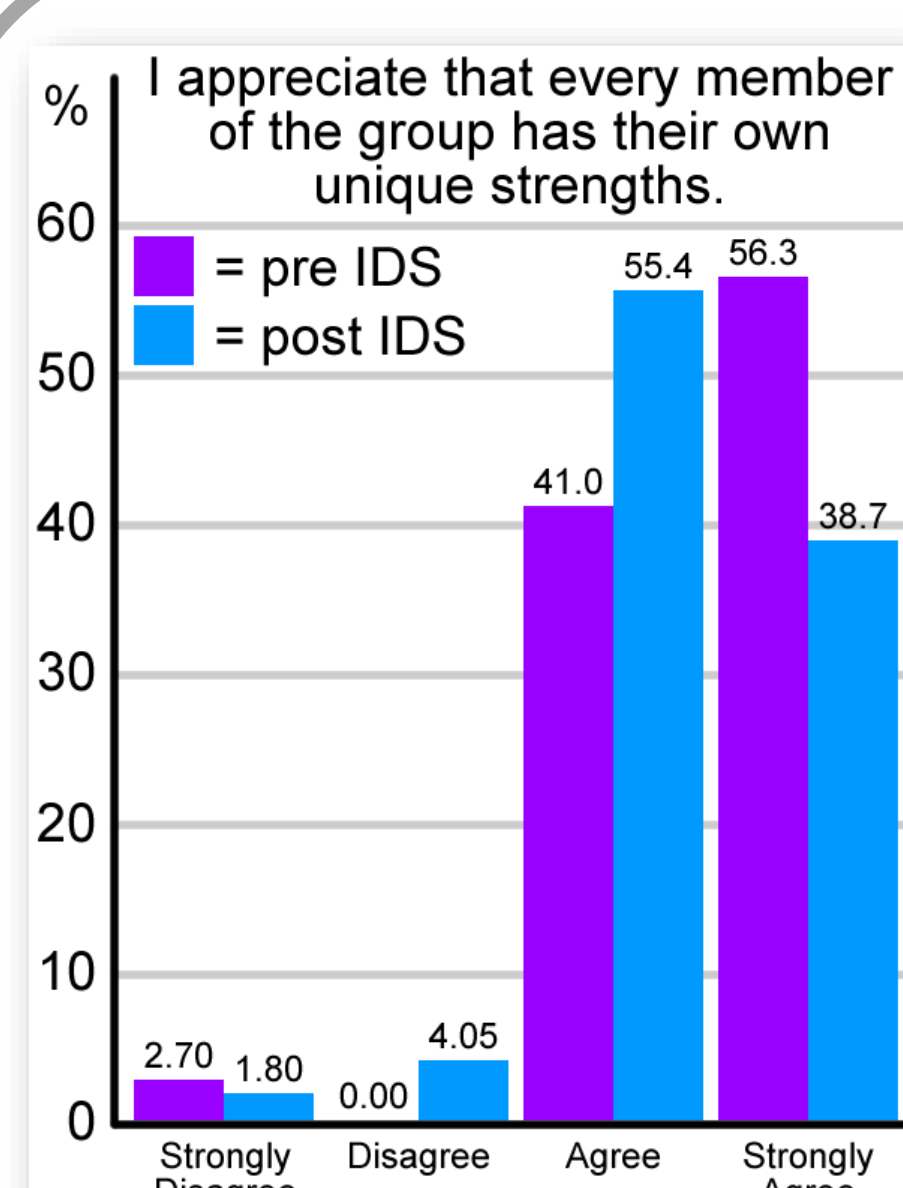
## 5 The Interdisciplinary Studies



- At the heart of the curriculum are seven challenging and thought-provoking weeks of *Interdisciplinary Studies* (IDS).
- Using the macroconcept of *sustainability*, students spend the seven weeks focussed on two different Interdisciplinary Studies; *Garden to Table* (macroconcept systems) and *The Built Environment* (macroconcept models).
- Using the principles of *Design Thinking* (empathise, define, ideate, create, test), students work in groups to propose what a sustainable Nanyang Girls' High School would look like in 2036. The groups present their products at an exposition, attended by teachers, industry professionals and other students.
- It is not really possible to *think outside the box*, but the IDS encourages students to make the box bigger, and to even have several different boxes.
- The IDS is assessed by rubrics: Process 50%, Presentation 20%, Product 30%.



## 6 Reflections and Conclusions



- At the end of the seven week Interdisciplinary Studies (IDS), teachers sought both quantitative and qualitative feedback from the students.
- "Group work is sometimes time consuming. Some issues can take up to an hour to settle. Through this experience I can see how different people work and how different people have different attitudes about things." – Student
- "We have to be more confident and get out of our comfort zone." – Student
- "Under teachers' guidance, we were able to see connections across disciplines and see things from different perspectives." – Student
- "A well rounded curriculum that encourages independent learning, innovative thinking and confidence in public speaking – with equal emphasis on academic excellence – will prepare our young generation well." – Parent

• Scan the QR code to view this poster and other online resources at:  
[www.scientist.sg/design\\_curriculum/design\\_curriculum.htm](http://www.scientist.sg/design_curriculum/design_curriculum.htm)



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