

# The PISA fallacy in Singapore: insights from the NIE

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A visit to Singapore's National Institute of Education (NIE), at Nanyang Technological University, should be on every teacher's bucket list.

This teacher-training college is where Singapore's extraordinary PISA success is manufactured. Singapore has been among the world's top performers in the PISA standardised science, mathematics and reading tests since 2006. In the past three years, it has held the top spot.

So you might be surprised to hear that the theme for NIE's 2017 educational conference was Redesigning Pedagogy. The PISA Fallacy

Before over 1500 delegates, Minister for Education, Ng Chee Meng, projected graphs depicting Singapore's stellar PISA results. He then juxtaposed these to OECD data on student wellbeing, and also of innovation in the economy, revealing Singapore in the lowest quartile. His conclusion was stark: "we've been winning the wrong race".

Ng Chee attributed Singapore's PISA success to standardised test drilling and a culture of compliance, only to retort: "we're building compliant students just as the jobs that value compliance are beginning to disappear". Over 350 workshops, across four days, explored the best ways to redesign pedagogy. Here are some of the best:

## **Interest-Based Pedagogy**

Professor Kim Sung Il, of the Brain and Motivation Research Institute, projected brain scans that correspond to a range of cognitive processes, including high-stakes testing, playing instruments, and curiosity. His findings are revelatory as to the importance of engagement in learning. This emotional state builds emotional and cognitive resilience, encourages creativity, fosters positive responses to feedback and reduces anxiety.

Kim discerned what types of activities tend to generate most engagement among learners, and they include: multi-sensory stimuli; relevance; autonomy; and ongoing, immediate feedback.

Crucially, engagement creates a positive bias towards the content or material being studied, which led Kim to conclude: "if you can't make material interesting, don't teach it, because you will lastingly damage it in the learner's mind".

## **Authentic Assessment**

A remarkably direct way to modernise pedagogy was offered by Dr Silin Yang. She called for educational systems to design tasks that are appropriate variations of their equivalent in adult industries and professions. Dr Silin Yang offered two irresistibly practical lists.

### **Stop:**

Applying unrealistic timings to tasks (eg. in-class timed assessments)

Expecting unprofessional presentation modes (eg. pen and paper)

Setting assignments out of context (eg. practice questions)

### **Start/Keep:**

Asking students to create authentic products

Aligning learning clearly to assessment criteria

Rewarding initiative and originality

## **Teaching Creativity**

Professor Root-Bernstein, from Michigan State University, distinguished between knowledge, creativity and innovation,

which are in ascending degree of complexity. Knowing consists of storing in your head what is available elsewhere; creativity relies on imagining what isn't available elsewhere; innovation requires creativity to actually work in context.

Task-design, explained Root-Bernstein, is central to fostering creativity, with desirable attributes including:

Designing tasks that can be resolved in several ways

Avoiding laying out all the steps to reach the resolution

Planning cross-curricular tasks

Rewarding originality and reflectivity

Asking questions that begin with why or how (rather than what)

Instructing students to create (rather than answer)

Root-Bernstein also posed the creativity challenge to principals, provoking them thus: "The difference between administrators and innovators is broader thinking: the ability to imagine, test the efficacy and deploy what is not before their eyes."