

## Core 2 Research Programme: Pedagogy and Assessment

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### KEY IMPLICATIONS

1. Strengthen knowledge building pedagogy through domain-specific knowledge practices i.e., develop students' conceptual understanding, subject expertise and self-regulation;
2. Improve the quality of instructional tasks and classroom interactions that, in turn, largely depend on changes to the national high-stakes assessment system and national curriculum frameworks;
3. Provide time for knowledge building/21st century assessment tasks to optimally balance fit-for-purpose instruction and knowledge-building pedagogy, and student outcomes.

### BACKGROUND

The Core 1 study (2004 to 2007) highlighted Singapore's traditional modes of instruction, focusing on basic knowledge and skills (Luke et al., 2005). However, it did not reveal domain-specific aspects of pedagogy and assessment. In 2004, the Teach Less, Learn More (TLLM) initiative was launched. To better understand its implications and provide evidence-based information for future policy reforms, we examined teachers' instructional, pedagogical and assessment practices in greater detail.

### FOCUS OF STUDY

Core 2 reports how Singapore teachers teach, why they teach the way they do, and explores potential impacts on student learning.

Employing varied quantitative and qualitative methods, and theoretical perspectives, the study comprehensively maps and models instructional practices and student learning in Primary 5 and Secondary 3 Mathematics and English classrooms. Core 2 also investigates the impact of TLLM and seeks to explain the logic of Singapore's pedagogy.

### KEY FINDINGS

- Classroom instruction is largely implemented as planned, pragmatic and hybridic;
- Tasks chiefly engage students in factual and procedural knowledge work;
- Following TLLM, changes in instruction, technology utilization and classroom environment are marginal;
- Instruction is determined mostly by curriculum coverage, teaching to the test, and accountability;
- What matters most in terms of student outcomes is not so much students' socio-economic background, or instructional practice and classroom environment, but their class composition.

### SIGNIFICANCE OF FINDINGS

#### Implications for Practice

- Strengthen knowledge-building;
- Improve classroom talk via conceptual connections, justification and reflexivity;

- Enhance high-leverage instructional strategies; ICT-mediated, collaborative group work; and dialogic talk focused on understanding;
- Incorporate knowledge building/21st century assessment tasks.

### Implications for Policy

- Conceptualise “pedagogy” more broadly;
- Develop a national whole-of-curriculum framework with sequenced domain-specific curriculum reviews;
- Develop system-wide and individual teacher pedagogical capacity;
- Refine multi-level knowledge management;
- Strengthen teachers’ professional learning, risk-taking and innovation;
- Consider the effects of streaming on student achievement.

### SAMPLE

*Panel 2:* 454 classrooms, 2,100 teachers, 16,895 students

*Panel 3:* 117 units of work (625 lessons): 15 Primary and 16 Secondary schools

*Panel 5:* 385 teacher tasks, 2,897 student work samples, 115 teacher interviews, 209 surveys

### RESEARCH DESIGN

Core 2 captures a multidimensional baseline of descriptive and observational data utilising a nested design comprising three inter-related studies or “panels”: teacher and student beliefs, instruction, and assessment. We conducted online, cross-sectional surveys of teachers and

students and analysed the data statistically, including multi-level modeling. We observed each participating teacher’s classroom instruction specifically, a “unit of work” and, using a coding scheme, focused on classroom organization, task implementation, pedagogical and disciplinary practices, coded videotaped lessons and tracked entire learning activities. We conducted post-unit teacher interviews about assessment, and collected teacher tasks and student work samples for statistical analyses.

### REFERENCE

Luke, A., Freebody, P.R., Lau, S., & Gopinathan, S. (2005). Towards research-based innovation and reform: Singapore schooling in transition. *Asia Pacific Journal of Education*, 25(1), 5–28.

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