

Contenting with Educational Disadvantage in the Global City: Singapore's Normal Technical Stream

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Background

This paper reports findings from a two year policy-informed professional development innovation/research project to improve the learning experiences of Singapore's poorest performing grade 7 and 8 students as a consequence of their teachers' developing capacity to plan and teach. Researching the innovation's professional development of 19 Singaporean lower secondary bottom stream teachers, the project holistically addressed attitudinal, administrative, curriculum, and pedagogical enablers of student learning.

Within Singapore's remarkable and rapid social and economic development, reported successes in education, and meritocratic system of competitive labour market human capital distribution, opportunities for engaged learning for many mainstream and most underperforming students are rare. Significant numbers of its citizens still "lack the linguistic and cultural tools to participate" fully in this global economy (Lim, 2006). Paradoxically, education's instrumental importance in Singapore limits student's access to intrinsically meaningful learning (Cheah & Robbins, 1998; Luke et al., 2005; CRPP, 2005; and Wong, 2006).

Singapore's Normal Technical (NT) stream was established in 1995 to provide low performing/high attrition students (Ng, 1993). The NT curriculum's academic orientation and examination-driven teaching conforms to how Asian pedagogy is characterized in general (Gopinathan, Ho, & Tan, 1999; Luke et al., 2005). Minority Malay students, boys, and children of lower socio-economic families are over-represented in NT classrooms (Kang, 2004, MOE, 2006). Significantly, NT students often come from homes where English is not spoken and/or one or more parents have lower than average educational qualifications, which are linked to student under achievement (Ow Report, 1992; Chang, 1997).

Research Questions

The innovation's intended outcomes were: greater teacher responsiveness to the particularities of teaching disadvantaged and underperforming students: their strengths, cultural resources, specific pedagogical needs, etc; increased teacher capability to plan and teach with a special focus on curriculum design and assessment; and more teacher willingness to sustain ongoing professional growth in curriculum design and assessment.

Research focused on these questions:

1. How do teachers' current capacities for planning, teaching, and assessment practices change as a consequence of their participation in the innovation project?
2. Does this affect their students' learning? In what ways?
3. How do teachers' discourses about planning, teaching, and assessment change as a consequence of their participation?
4. What changes, if any, are there in teachers' deficit discourses and low expectations regarding these students as a consequence of the teachers' participation?

Methods

NT teachers' classroom practices were coded using an adapted and improved version of the Core One Singapore Coding Scheme (Luke, Cazden, Lin, & Freebody, 2005). While engaged in

professional development work, the research team collected baseline data: student artefacts, observations, teacher interviews, audio/ video recordings and field notes of classroom and UbD module lessons, mentoring sessions, and team meetings. Qualitative measures of the innovation's effectiveness over time used such indices as: improved student time-on-task; changes in teachers' discourse regarding the curriculum and their work as curriculum planners and designers; changes in the framing and classification of pedagogy; changes in teachers' discourse about assessment; changes in teachers' 'deficit' discourses and low expectations about NT students; and increased and sustained commitment by teachers to curricular design. An quantitative instrument particularly designed for this project, informed by work done earlier in Queensland's New Basics Project (Hayes, et al, 2006), was used as a pre and post innovation moderation exercise to find "articulations of understanding" that served as evidence of change in pedagogy and learning.

Frame

This project included dimensions of teachers' capacity building beyond the usual behavioural skills, knowledge of subject matter, curriculum, students, etc, and general and subject-specific pedagogy in its consideration of the attitudinal dimensions of how teachers' dispositions and views of self change over the course of the project (O'Day, Goertz, & Floden, 1995).

Understanding by Design (Wiggins and McTighe, 2005) was chosen for this innovation project because its principles and practices reflect educational theorists' consensus about what promotes learning (Bransford, Brown & Cocking, 2001). UbD's curriculum, pedagogy, and assessment are supported by many international research studies (e.g. Newmann et al., 1996; Smith, Lee, & Newmann, 2001; Newmann, Bryk, & Nagaoka, 2001; Martin, Mullis, Gregory, Hoyle, & Shen, 2000; Stiger & Hiebert, 1999; and Hayes, Lingard, & Mills, 2000). Both high and low-achieving students benefit from pedagogies that foster understanding with poorly performing students making the greatest gains (Zohar & Dori, 2003)

Research findings

This project supports international findings that improved teacher capacity is related to improved student learning.

Successful participants strove against the following challenges: teacher's self-positioning as curriculum deliverers and not curriculum interpreters and designers, weak initiative to improve the learning environment, skepticism about the possibility or desirability of change, defensive and generally risk-averse behaviors, potential material and existential loss significantly inhibited teacher efficacy, weak commitment to planning, even when required, limited repertoires for creating alternative activities, differentiating instruction, sequencing activities, adapting and responding to the flow of a lesson, "weaving" of knowledge to relevance outside the classroom or to other subjects, and responding to students' needs and interests beyond what was planned, curricular molecularisation (Cazden, 2005), inadequate preparation to deal with the curricular language demands, gaps in teachers' content knowledge, weak alignment between pedagogical goals/objectives, and/or what was taught, assessments rarely used formatively to promote learning, and ineffective classroom management procedures.

In Singapore, as elsewhere, deficit discourses and lower expectations regarding poor performing students are endemic and appear linked to weak teacher efficacy and content and pedagogical capacity, buttressed by explanations of difference in school attainment, informed by available psycho-social explanations (Zohar, Degani, & Vaaknin, 2001; Zohar & Schwartz, 2005).

This innovation is additional evidence for systemic whole school innovation. Schools are often positioned as neutral and impartial institutions where students compete on a level playing field. Thus, in a neat linear pedagogical narrative of taking students in stages from ignorance to knowledge and understanding, differences in student outcomes correspond to student competences variously ascribed in these accounts, in turn inscribed in educational policy and structures.

