RESEARCH BRIEF

SINGAPORE TEACHERS' ESPOUSED BELIEFS
Links to Practice

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THIS PROJECT SOUGHT TO generate a fine-grained documentation of the espoused beliefs of teachers in Singapore and the links made to their classroom practice. This research brief presents the findings based on individual and focus group interviews with experienced teachers across subject disciplines and school sectors (primary and secondary). Findings revealed nine belief areas covering 77 beliefs related to classroom practice, which were also found to be pervasive, explicit and embedded. Further analysis revealed four common themes across these belief areas: the importance of the teacher's relationship with individual students; the purpose of teachers' work; the significance of the cognitive and affective dimensions of both teaching and learning; and strong beliefs about the nature of students. There were minor differences in these beliefs across school sectors, subject discipline and gender.

INTRODUCTION

This project was conducted by NIE's Centre for Research in Pedagogy and Practice (CRPP) in the context of ongoing changes in Singapore's education system, with the introduction of the *Thinking Schools, Learning Nation* (TSLN) vision in 1997 and *Teach Less, Learn More* (TLLM) in 2005 by the Ministry of Education (MOE).

KEY IMPLICATIONS

- To support effective curriculum implementation, it is essential to identify the teacher beliefs that would facilitate or hinder change.

- It is important to incorporate processes of teacher talk about beliefs and belief change in the design of teacher learning initiatives. Reflection about metaphors, critical incidents and the ideal classroom are useful in facilitating this.

- It would be beneficial to cultivate experienced teachers whose beliefs are aligned with new curriculum initiatives as mentors to beginning teachers.

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TLLM is significant in its call to improve the quality of interaction between teachers and learners—with less emphasis on rote learning, repetitive tests and a "one-size-fits-all" type of instruction, and more on experiential discovery, engaged learning, differentiated teaching, lifelong skills and the building of character (MOE, 2005).

Teacher beliefs in times of educational change

Teacher beliefs are critical in periods of innovation and curriculum change (Keys, 2005, 2007; Van Driel, Bulte, & Verloop, 2007).

There is growing consensus that educational innovations will not succeed if the emphasis is limited to developing specific skills, without taking into account teachers' beliefs, intentions and attitudes (Tobin & McRobbie, 1996).

In this study, we used a definition of beliefs that has cross-disciplinary acceptance: "Beliefs are thought of as psychologically held understandings, premises or propositions about the world that are thought to be true" (Richardson, 1996, p. 104). Beliefs operate as a filter through which new information is viewed, evaluated and acted upon (Pajares, 1992).

An understanding of teachers' beliefs can contribute to the success of educational change in the Singapore context.

Teacher beliefs and practices in Singapore

While there is little research on teacher beliefs and their links to practice in Singapore, what is available is highly informative.

An early study noted that teachers' curriculum beliefs were diverse and weak, and were aligned to the beliefs held by school authorities (Yeoh, Lam, & Foong, 1994). They also noted an unresolved tension between actual practices of preparing students for examinations and teacher-centred pedagogy, and the ideal of co-operative and child-centred inquiry learning.

This emphasis on teacher-centred practices and student achievement was confirmed by subsequent studies (see Chew, Ng, Lee, & D'Rozario, 1997; Mortimore et al., 2000).

Deng and Gopinathan (2003) noted that many Singapore teachers viewed knowledge as static and learning as entailing the acquisition, memorization, regurgitation and application of knowledge.

Research in Singapore by CRPP showed "a very tight coupling between the high stakes summative assessment system and classroom instruction" (Hogan & Gopinathan, 2007, p. 370). There was limited evidence of formative assessment, interdisciplinary work, differentiated instruction and classroom enquiry, although the situation has recently improved with MOE's support for action research.

A later quantitive study revealed a general consistency in teacher beliefs about pedagogies, knowledge and learning and that teachers believed and practised both teacher-oriented and learner-centred pedagogies and assessment methods (Jacobson, So, Teo, Lee, & Pathak, 2008).

This study aimed to provide research-based evidence on the beliefs of experienced teachers and links with practice that policy makers (and researchers) can use to inform the implementation of educational innovations.

RESEARCH DESIGN

The research was designed to address the complexity of teacher beliefs and their links to practice. Altogether, 75 experienced teachers (with a minimum of 5 years' teaching experience) were interviewed, both face-to-face and in focus groups.

Teachers were drawn equally from across disciplines (English, Mathematics and Science) and from across school sectors (upper and lower primary, and secondary Special/Express, Normal [Academic] and Normal [Technical] streams). The sample included significantly more female teachers than male, reflecting the distribution among teachers in Singapore.

The data collection involved multiple processes of eliciting "belief talk", which generated rich descriptions of teachers' espoused beliefs and their links to practice:

- *Metaphors*: Participants were asked to share metaphors they had of themselves as teachers and instances when those metaphors were operative. As "ordinary conceptual system,

in terms of which we both think and act, is fundamentally metaphorical in nature" (Lakoff & Johnson, 1980, p. 3), metaphors can serve as a "master switch" to facilitate changes in teachers' beliefs (Tobin, 1990).

- *Critical incidents*: Participants were asked to describe critical incidents. These serve as a stimulus for capturing reflections on key episodes the teachers had experienced. These reflections are useful for initiating discussion, engaging participants, and revealing their beliefs (Joram, 2007).

- *Ideal classroom*: Participants were asked for their conceptions of the ideal classroom or school. Many teachers have what Hammerness (2006) calls "teachers' vision", a set of vivid and concrete images of practice derived from reflection on their own practice. These images embody the teachers' hopes for the future and play a significant role in their lives and work. Unpacking these visions is important in revealing teachers' beliefs.

The face-to-face interviews were audio-taped and focus group interviews video-taped. The data was analysed for teachers' beliefs and their links with practice. These were also coded by frequency of occurrence by sector, subject discipline and gender.

Additionally, the data was analysed in terms of:

- *Pervasiveness*: How widespread the beliefs were in terms of the number of teachers espousing them. The frequency of beliefs mentioned is a good indicator of pervasiveness.

- *Explicitness*: How clearly the beliefs were conveyed in terms of the teachers' descriptions of the belief and their actions in relation to the belief. These descriptions and their links with practice are a good indicator of explicitness.

- *Embeddedness*: How a belief is related to other beliefs. Beliefs are interlinked; they build upon each other and may constitute a system. In education, for example, beliefs about learning build upon beliefs about the nature of knowledge. This can be contrasted with beliefs that appear disjointed; for example, a teacher may believe in inquiry learning yet desire control over learning.

KEY FINDINGS

Our analysis revealed 77 beliefs related to classroom practice espoused by the 75 teachers. These were categorized into nine belief areas: *Teacher's roles*; *Purposes of teaching*; *Teacher dispositions*; *Nature and scope of teaching*; *Nature of knowledge*; *Nature of students*; *Beliefs about learning*; *Teaching theory*; and *Classroom management*. (Refer to Table 3 in Dixon & Liang, 2009, for a detailed list of the teachers' espoused beliefs.)

Common themes across belief areas
Analysis revealed four common themes across the belief areas of the teachers. The beliefs and links to practice espoused by experienced teachers resonate with a coherence and connectedness across beliefs. Moreover, these beliefs were found to be pervasive, implicit and embedded.

Teachers' relationships with individual students
The first common theme pertains to the relationships of teachers with individual students. This belief was described using metaphors that expressed how teachers adjust to the academic, social and emotional needs of students (e.g., chameleon, water, entertainer, mother).

This belief was also reflected in numerous critical incidents. For example, one teacher shared how she persevered until she found a way to reach a "problem student" and thanked him for teaching her patience.

Many teachers imagined small class sizes in their ideal classroom so they can attend to the needs and interests of individual students. The emphasis was on caring for individual students but did not refer to a student-centred classroom or student-initiated classroom practices.

Purposes of teachers' work
The second theme relates to the purpose of their work. Teachers believed in imparting values to students, building students' character, preparing students for future lives, and supporting students in passing examinations.

In talking about their (often multiple) roles as parents, guides, role models or counsellors, teachers gave accounts of interactions with students, "hero tales" of how they counselled individual students and used

strategies (such as personal stories) addressing both academic and non-academic issues.

Cognitive and affective dimensions of teaching and learning

The third theme focused on the relationship between the cognitive and affective aspects in both teaching and learning. In describing their work, teachers recognized the affective dimension in sustaining their practice, supporting their teaching and understanding their work.

One teacher, for example, noted that "bonding and rapport with students is necessary, [as it] facilitates learning and teaching". Teachers frequently took the positions of parent and counsellor when they nurtured and cared for their students and themselves.

Strong beliefs about the nature of students

The fourth theme focused on strong beliefs about the nature of students, particularly embedded beliefs about the fixed nature of academic ability.

The students were regularly identified by descriptors such as "weak"; poor behaviour or progress would be attributed to this descriptor. There was no talk of this ability level being changed by schooling, teaching, development or maturation. Rather, this descriptor appeared as enduring as beliefs about ethnicity and sex.

Linked to this was the belief that students can be known by the sector in which they are placed, for example, by whether they are "Express" or "Normal (Technical)" students. Teacher talk relating to beliefs about learning and teaching theory drew heavily on beliefs about the nature of students (the fixed nature of their ability); the nature of knowledge (both social constructivist and transmission); teachers' role as parent with responsibility, power and care; and their holding authority in the classroom.

Distinctions across beliefs

There were few differences in the beliefs of teachers when compared across sectors, subject disciplines and gender. This is interesting given the differences in institutional structures, the educational background of the teachers, and the commonly held view of the differences between primary and secondary teaching which circulate in the wider educational discourses.

By sector

More primary teachers espoused the belief that the purpose of teaching is to help students pass exams while more secondary teachers emphasized the purpose of imparting values in teaching. The primary teachers also emphasized the building of character.

The primary teachers offered more diverse beliefs about learning. For example, they mentioned the influences of positive peer influences, student attitude, and the impact of a lack of facility in English on student learning, which the secondary teachers did not.

They also mentioned issues concerning the conditions for productive learning, such as a stress-free environment and the need for time for deep learning.

By subject discipline

Only minor differences in belief were indicated among these English, Mathematics and Science teachers. Only one Mathematics teacher expressed belief in the role of the affective dimension in learning and more Mathematics teachers argued for the belief in the authority of the teacher in the classroom.

By gender

Whereas 15 females expressed the belief that teachers needed to respond to individual students in teaching practice, only one male teacher espoused this. And while 10 female teachers expressed the belief in the importance of differences between students in learning, only one male expressed this belief.

IMPLICATIONS FOR TEACHER LEARNING

This study identified nine belief areas and four themes across these belief areas. An understanding of these beliefs and their links to practice would allow for a smooth implementation of curricular innovations and for teachers' professional development.

For school policies

It would be useful for each school to develop an evidence base of teacher beliefs specific to the individual school context. This evidence base will provide an indication of the beliefs that need to be supported, reshaped or changed for a particular school or group of similar schools.

This is especially important to the work of school leaders in building and sustaining a culture of change and innovation in schools, through engaging with teacher beliefs, which constitute an important component of the culture of any school.

In addition, it would be worthwhile for school policies to proactively support a form of teacher professional development that specifically engages with teacher beliefs, incorporating processes of teacher talk about beliefs and belief change.

For professional development

Many of the beliefs espoused by the teachers in this study are aligned to the pedagogical positioning being advocated by MOE. It may be useful to draw on this group of teachers as mentors, guides or experts in work with beginning teachers.

As mentors, these teachers can form communities of practice in schools. The belief areas and themes identified in this study could constitute foci of teachers' discussions.

For example, facilitators can engage with beliefs about teaching and learning and help teachers to better align their beliefs and practices with curricular innovations. They can also engage with the teachers' embedded belief in caring for individual students and guide teachers towards more student-initiated practices for the student-centred classroom.

It would be beneficial to elicit metaphors, critical incidents and conceptions of the ideal classroom, which have proved to be useful in generating teacher talk about beliefs and belief change.

For teacher education

This study examined the beliefs of experienced primary and secondary teachers in Singapore. It would be useful to conduct a similar study on the beliefs of pre-service teachers. This would provide an evidence base of beliefs for teacher educators to support the design of teacher education programmes to prepare pre-service teachers for curriculum implementation in schools.

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