

Project: L2 Classroom Talk and Subject Content Learning: Investigating the Relationship Between L2 Learning and Content Learning in EMI Mathematics and Science Classrooms

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Abstract:

This study examined the role of English (as a second language, or L2) as the medium of instruction in the teaching and learning of Mathematics and Science classrooms in junior secondary schools of Hong Kong (F.1 and F.2 / Grades 7 and 8). It aimed at unpacking the complex question of how students develop

cognitive understanding of content subjects through the use of English language. The study also sought insights on the role of language in science and mathematics learning through an investigation of classroom talk in these two subjects. While numerous professional development initiatives in local secondary schools have emphasized the integration of language and content in humanities, mathematics and science subjects, there is a paucity of systematic research in Hong Kong on the discourse of classroom teaching in content subjects. The study was underpinned by specific research questions which aimed at exploring classroom talk which facilitates successful learning in science and mathematics, teachers' pedagogical and linguistic strategies and students' learning experiences. To achieve these broad aims the study adopted a mixed-method approach including 283 lesson observations (of 7 mathematics and 8 science teachers across 8 local secondary schools), multiple semi-structured and focus-group interviews with teachers and students from each school and questionnaire data from 390 respondents. Findings are presented qualitatively and quantitatively and a range of detailed lesson extracts suggest that schools are implementing a bilingual model of teaching in different ways and with differing degrees of success. Implications are suggested for classroom practice and teachers' professional development.

Keywords:

Conceptual and linguistic mediation; Co-construction of meaning; Student proficiency and competence to learn in EMI; Pedagogical strategies; Spoken and written discourse in subject classrooms; Subject teacher language awareness