

Concurrent Session 1

[“What have language and multimodal communication got to do with Science content building?”](#)

Presenter: Asst. Prof Tang Kok Sing, NSSE/NIE

Audience: Primary and Secondary Science teachers

Venue: Seminar Room 2.6

Abstract

Science educators tend to perceive scientific content to be independent from the way language is used. Challenging this perception, this forum explores the intertwined relationship between language and knowledge. Using illustrative examples, it also discusses how science conceptual understanding can be enhanced by the effective use of language and multimodal communication.

Assistant Professor Tang Kok Sing received the PSC Overseas Merit Scholarship to read for his BA (Hons) and MSc in Physics at the University of Cambridge, and the NTU Overseas Graduate Scholarship to read for his MA and PhD in Education at the University of Michigan. Prior to joining NIE in 2011, he taught Physics and project work at Tampines Junior College and worked as an Educational Technology Officer at the Ministry of Education. He also taught Classroom Management and ICT for Meaningful Learning as a teaching fellow at NIE from 2006 to 2007.

Kok Sing’s research revolves around the teaching and learning of Science in two dialectical dimensions: (i) an inward analysis of Science classroom discourse and (ii) an outward exploration of out-of-school connections. For classroom discourse analysis, his research examines the discursive practices that constitute the talking, doing and teaching of Science, both in traditional didactic and inquiry-based classrooms. Using multimodal discourse analysis as a lens, Kok Sing studies the micro-genetic development of knowledge and identity construction in Science. For out-of-school connections, his research focuses on how adolescents’ diverse media and cultural practices intersect with the representational practices of Science.

Concurrent Session 2

“The use of language and multimodal communication in developing Mathematics conceptual understanding”

Presenter: Mdm Foo Kum Fong, Master Teacher Mathematics

Audience: Primary & Secondary Mathematics teachers

Venue: Seminar Room 1.2

Abstract

Mathematics educators and teachers tend to perceive a distinct dichotomy between learning the mathematics content and the language used in communication. Yet, Mathematics cannot be learned without first being understood. It is not a matter of formulae being committed to memory, but rather acquiring a capacity for systematic thought through precise expression. This sharing explores the interlocking relationship between language and mathematics knowledge. It also discusses, with the use of examples, how mathematics conceptual understanding can be enhanced by the effective use of language and multimodal communication.

Mdm Foo Kum Fong, Master Teacher Mathematics has been a teacher for 24 years. She was a Teaching Fellow at the National Institute of Education, Nanyang Technological University, from 2003 – 2006, and a Curriculum Planning Officer at MOE from 2000 – 2002. She was awarded the Fulbright Distinguished Award in Teaching from August to December 2009 where she studied how open-ended tasks engaged students in constructive thinking in the context of mathematical problem solving. She served as editor of *Maths Buzz*, a publication of the Association of Mathematics Educators. She has published journal articles and presented to the international mathematics community, including Huamao Foreign Language School (Secondary) at the invitation of Ningbo University, PRC, and Zhengzhou Roundtable at the invitation of Zhengzhou City Education Bureau, PRC.

Concurrent Session 3

“Deepening understanding and academic knowledge through vocabulary”

Presenter: Mrs Alice Poh, Master Teacher/ Geography

Audience: Primary Social Studies teachers

Venue: Seminar Room 2.7

Abstract

“Everyone has experienced how learning an appropriate name for what was dim and vague cleared up and crystallized the whole matter. Some meaning seems distinct almost within reach, but is elusive; it refuses to condense into definite form; the attaching of a word somehow (just how, it is almost impossible to say) puts limits around the meaning, draws it out from the void, makes it stand out as an entity on its own account.”

John Dewey. “Language and the Training of Thought”, Chapter 13 in *How we think*. Lexington, Mass: D.C. Heath, (1910), pp 170-187.

Building Academic Knowledge is a six-step strategy devised by Marzano (2005). His research shows that children best acquire new academic terms and deepen understanding through both linguistic and non linguistic ways. Vocabulary instruction is important in building the academic background knowledge of any subject area. It capitalizes on the strength of the visual and direct instruction to help students understand content in a new way. This presentation explores the power of using Marzano’s vocabulary strategy for academic achievement.

Mrs Alice Poh is Master Teacher Geography with a BA (Credit) from the National University of Singapore and an MEd (Honours) from the University of Western Australia. Mrs Poh started her teaching career in CHIJ St Theresa’s Convent and held various appointments as Sports Secretary, Senior Subject Teacher and the Head of Department (Humanities) before she took on the responsibility of being the Vice Principal of the school for eleven years. She was also a Teaching Fellow in HSSE/NIE during her six month attachment in 2007. Mrs Poh is also a Teacher Renewal Guide and has helped schools in the Teacher Renewal Programme since 2004. Her professional interests lie in mentoring teachers and their professional development in the areas of cooperative learning, problem-based learning, action research, lesson study, data-driven conversations and direct vocabulary instruction.

Concurrent Session 4

“Disciplinary literacy and its place in the Teaching of History”

Presenter: Mr Andrew Anthony, Master Teacher/ History

Audience: Secondary, Humanities teachers

Venue: Seminar Room 2.8

Abstract

Many students associate History primarily with the memorisation of content. They are less likely to see history as a unique way of knowing the world, or be aware that it is bound by a set of structures and conventions. This presentation will present broad ideas related to subject disciplinarity and disciplinary literacy in History. It will also discuss how disciplinary understanding (which includes language use) can help students make sense of the history content and, more importantly, help them see the value of studying the subject.

Mr Andrew Anthony joined the teaching service in 1987 after completing his undergraduate studies at the National University of Singapore. He taught English Language and History at Catholic High School. In 1998, he joined the History Unit in the Curriculum Planning and Development Division (CPDD). He was involved in the development of the History curriculum and wrote two chapters of the Secondary Two History Textbook. After his stint at CPDD, Andrew served as the Head of Department in Catholic High School. In 2004, he joined St Margaret’s Secondary School and was appointed Senior Teacher in 2006. To further his professional growth, Andrew completed his Masters in Education (Curriculum and Teaching) in 2009. In the same year, he was awarded the Fulbright Distinguished Award for Teaching and spent four months in the United States at the Peabody College, Vanderbilt University. He was appointed Lead Teacher in 2010 and helped manage curriculum matters at the school level. At the national level, Andrew contributed to the development of the national curriculum for History and Social Studies by serving on the Subject Development Committee. He was appointed Master Teacher for History in June 2011.

Concurrent Session 5

“Bringing language support into our content lessons - a practical guide”

Presenter: Mr Tim Chadwick, Consultant,
Cambridge International Examinations

Audience: Primary and Secondary teachers

Venue: Seminar Room 2.5

Abstract

In this session, we will begin by looking at the rationale for supporting academic language in the content classroom. The main aim of the session, however, is to provide concrete examples of how to assess your students’ language level regarding academic English, and how to identify the language demands of your lessons and provide appropriate support. This will include dealing with content-specific vocabulary, functional language that relates to critical thinking skills, and helping students to listen, speak, read and write effectively in a second language. We will use examples from the humanities and sciences, but the principles will apply to all subjects.

Tim Chadwick has worked in education in a wide variety of countries and contexts over the last 18 years. He was a senior trainer and manager on a large education project in the Middle East where, almost overnight, the language of delivery for state school Maths and Science changed from Arabic to English. This had huge implications regarding how subject teachers approached their lessons. Subsequent to this, and other related experience, he was commissioned by University of Cambridge International Examinations, in cooperation with Cambridge University Press, to write a practical guide for schools on how to support both content and language learning in the classroom.