

COBWEB SUPPORT BY INSTRUCTIONAL LEADERS IN THE IMPLEMENTATION OF ETEMS PROGRAMME

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Abstract

Malaysia has opted the use of English in schools, although limiting this to the subjects of English Teaching of Mathematics and Science (ETEMS) since 2003. To achieve this instruction in a second language, a wide range of supports are offered to teachers and learners, whose proficiency in English may be limited. These supports include materials, technology used in teaching and learning process, in-service training, support from internal especially English teachers and technology technical support, mentoring by senior teachers, English for Science and Technology as an examination subject, and the fostering of a positive attitude to both English and the Malay language. In fact the support from industry and private educational institution to enhance the ETEMS were widely accepted by the schools in boosting the programme. A qualitative research had been carried out to an urban school with different background of students' and school culture gave an impact to the cobweb support in achieving the ETEMS objectives. Data from focus group and individual interview, observation and texts (daily lesson plan, students work) are analysed using NVivo 9 (computer aided qualitative research analysis software-CAQDAS) thus smoothing the iterative process of collecting and analysing while the study being carried out and the conclusions of the study had shown the ETEMS had been support by various parties within school, industry and educational departments.

Keywords: Instructional leadership English Teaching of Mathematics and Science (ETEMS), language support, content based language teaching.

1 INTRODUCTION

Learning through the medium of a subject other than the mother tongue is the experience of learners in a range of situations. For some, it is the result of a deliberate policy to combine learning a language with learning in the disciplines. We see this in Canadian immersion programmes (Baker 2006) which aim to improve not only proficiency in the other national language but also understanding of culture. Learning language and disciplinary knowledge together is found too in the form of Content and Language Integrated Learning (CLIL) in many European countries, where multilingualism is actively promoted by the EU (see for example Dalton-Puffer 2007).

For other learners worldwide, yet another reason for learning in a second language is relocation to another country. Although traditionally such English Second Language (ESL) learners might have been placed in separate "sheltered" ESL classes (Brinton Snow and Wesche 1989), or have attended ESL classes in addition to regular classes, Cruikshank (2009) outlines a growing trend in Australia and the US to mainstream literacy development in schools.

The study involved case studies of two urban high schools in Kuala Lumpur, one in a higher income and the other in a middle income area. The data includes classroom observation in these high schools, interviews with high school teachers, and focus group interviews with high school students.

In Malaysia, the Malay language is spoken as a mother tongue by around 44% of the population (Demographics of Malaysia) with the rest of the population speaking as mother tongues other indigenous languages (such as Iban, Kadazan, Melanau) various Chinese languages (Mandarin, Hokkien, and Cantonese), as well as a number of Indian languages (such as Tamil and Telugu). As the mother tongue of the largest group, the Malay language was selected as the national language, and it is learnt in all schools, and used in official contexts such as the law courts, public administration and government. The end of the colonial era in Malaysia saw English as the medium of instruction in schools (Heng & Tan 2006), Malaysia gradually switched from English to Malay-medium education up until the end of secondary school. Mandarin- and Tamil-medium schools continued to exist at primary

level. Nation building and unification of ethnic groups are cited as reasons for the move to Malay-medium schooling (Heng & Tan 2006).

However, 2004 marked a return to education in English in restricted subjects: Science and Mathematics. Instruction in English in these subjects started in primary school and continued until the end of high school and beyond. This change was prompted by a view of English as the language of science and technology, the desire to contribute to technological development internationally (Wan Zahid 2002), and considerations of international trade (Heng & Tan 2006). Quoting a former Minister of Education, Tan Sri Dato' Sri Musa bin Mohamad, Musa (2003) noted that the policy change to the use of English to teach Mathematics and Science had a dual aim: improvement of English proficiency in the country at large as well as facilitating science content knowledge. Ongoing difficulties with use of English in the classroom in rural areas, and a reported drop in achievement in Mathematics and Science (Surin 2009) are, however, likely to see a return to instruction in the Malay language in these subjects in 2012.

Any option that is chosen can have an empowering or disempowering effect on learners depending on how it is implemented... Language policy for education needs... to be flexible without being so laissez faire as to allow the perpetuation of present discriminatory policies or ill-informed choices of alternatives to them.

Similarly Murray (2002) describes how "English is the language of power and thus of choice, but there is insufficient access to it, and the compensatory strategy of [codeswitching] has predictable consequences".

This article focuses on the second of these options, language support for L2 instruction, and outlines the measures taken by the educational authorities in Malaysia to support the teaching of Science and Mathematics in English from 2004 to 2012. These measures include support to both teachers and learners, and comprehend materials, in-service training, pre-service training in an English country for some teachers, on-going support from English teachers, mentoring by senior teachers, English for Science and Technology as an examination subject, orientation to learning in English for learners, and the fostering of a positive attitude to both English and the Malay language amongst teachers and learners. We consider each of these in turn below. In addition to these measures, both the Mathematics and Science teachers and the English teachers were given a 10% addition to their salary, in order to compensate for the additional work and effort required in changing the medium of their teaching, and in the case of many, of improving their proficiency in English, or in the case of English teachers, of supporting improvement in proficiency of their colleagues. This additional remuneration made the policy more palatable to teachers.

Before turning to a discussion of the different supports available to teaching in English, we note that the form 5 school leaving examination in the Malaysian school system is of a similar standard to the British O-level. After 6 years in primary school, high school takes five years, from form 1 to form 5. Students can then either enter a pre-university college or enter a foundation year at a tertiary institution.

2 THE ENGLISH FOR TEACHING MATHEMATICS AND SCIENCE PROGRAMME (ETEMS)

Pengajaran dan Pembelajaran Sains dan Matematik dalam Bahasa Inggeris (PPSMI)

Recognising that school instruction in the Malay language from the 1970s to 2003 had raised a generation of teachers who were not necessarily proficient enough to teach science and mathematics in English, a series of supports were designed to assist teachers in attaining this proficiency. These included testing of teachers' English proficiency and subsequent in-service training, supportive electronic teaching materials and hardware to use these, English language textbooks, and a buddy-system providing support from English teachers. This programme, called in English the ETeMS (English for teaching Mathematics and Science) programme, was structured within schools around a weekly meeting between Mathematics Science and English teachers, with minutes of each meeting kept at each school, and official monitoring of the activities it promoted, such as the buddy-system.

2.1 In-service training

According to our informants, proficiency in English was tested through an examination, and teachers who did not achieve a certain minimum level in the examination were then required to attend English

language classes during the vacations. Employing a specific purposes approach, greater emphasis was given to speaking rather than to reading, writing and listening skills (Heng & Tan 2006). The ETeMS programme used both face to face delivery and self-instruction in a 240 hour programme (Heng & Tan 2006). Although onerous for teachers, this system of examination and instruction nevertheless represents a concern to ensure adequate proficiency without which teachers' effectiveness and the teaching of Science and Mathematics in English would be compromised. Such a system of testing and instruction is accepted due to monetary assisted.

Our experience indicates that content teachers of L2 speakers, whether they themselves are L1 or L2 speakers, would benefit from training in ways promoting spoken and written literacy such as facilitating learner group discussion (initially, for most learners, in the L1) of conceptual material, and then, crucially, providing opportunities to reframe this discussion in speech and writing in English. Indeed, whether teaching in is in mother tongue or English, there is a strong argument for in-service and pre-service training in ways to promote spoken and written literacy work in classrooms.

As an example of such literacy work, Macken-Horarik (2002) describes development of spoken and written literacy practices for students in a Biology class. Learners' development from a common sense understanding to scientific understanding was scaffolded through talk writing and explicit teaching of genre. Cruikshank (2009) too describes a case study of grade 7 learners designing, carrying out and reporting, both orally and in writing, on an experiment. Teachers used TESOL activities such as dictogloss, sequencing tasks etc. to develop use of technical language. In-service training for teachers of disciplinary subjects in ways of building spoken and written literacy in the classroom would be of enormous value in South African schools. A study of the activities primary teachers can engage in to promote spoken and written literacy in the disciplines is found in Haneda (2000).

3 MATERIALS

To facilitate teaching in an L2, the Malaysian Ministry of Education supplied Powerpoint materials to support English instruction. Those we observed were largely diagrams annotated in English; they played an interesting part intertextually in classroom teaching, and were actively used by both teachers and learners together with textbooks as a source of information. To support use of the powerpoint materials, hardware such as laptop computers, data projectors and screens were installed in Science laboratories. IT support was also provided by the Ministry to service these.

In addition to powerpoint materials, English language textbooks were also provided was that all students had their own copy of the textbook and the textbook was repeatedly referred to by students in the classes we observed. Interestingly, each section begins with an English-Malay list of key technical and sub-technical terms, indicating a further recognition that readers of the textbook are not mother tongue speakers of English and require support in understanding the language.: ways of recognising that the textbooks are to be used by L2 speakers and need perhaps a more restricted lexis, and possibly more in-built tasks providing scaffolding to facilitate conversion of initial group discussion (which might realistically be in the L1) into spoken English and then written texts in English.

3.1 On-going support from English teachers: the 'critical friend'/ buddy system

Malaysian English teachers were paired with Mathematics and Science teachers to act as a support to these colleagues. The terms 'buddy' and 'critical friend' appeared to be used interchangeably by our informants. 'Critical' in 'critical friend' did not, according to our informants, mean 'important', but rather had a meaning concerned with appraisal of their colleague's performance. Teachers that we interviewed reported relying on their buddy/critical friend for a range of assistance including assistance with vocabulary, with grammar, with phrases concerned with lesson management (such as 'take out your books'), and with proof reading of worksheets, tests and examinations. To be successful it also requires a high standard of English on the part of the English teachers. Testing and instruction would thus be essential also for English teachers. Given the burden that support of all colleagues would place on English teachers, an advantage would be if additional specialised ESL teachers were placed in schools, to provide such teacher support for example by team-teaching with discipline teachers or providing additional language support to learners who need it.

3.2 Teaching scripts

Another important source of classroom management assistance was offered in the form of teaching scripts supplied in Ministry of Education supplied books (Maths and Science Teaching Scripts). These supplied lessons in English giving both teachers' possible utterances and possible learner responses. Although it is clearly not possible for any lesson to reflect these exactly, or for teachers to follow them closely in the classroom, they are an important source of guidance and a valuable source of vocabulary, and it seems likely that South African teachers might benefit from availability of such scripts.

4 OTHER LANGUAGE SUPPORT FOR TEACHERS

4.1 Pre-service training in an English country for some teachers

In Malaysia, English is little spoken outside of cities, although within cities our informants reported that a relatively large proportion of families speak at least some English within the home in addition to their mother tongue, and for a small proportion English is the de facto home language. This was clear to us from our interviews with learners, particularly those at the higher income school where we conducted our study. To increase the level of English, particularly in the countryside, the policy in Malaysia has been to send a proportion of Science, Mathematics and English teacher trainees to English countries, such as the UK, Australia and New Zealand, for at least part of their training – two or three years of a four year degree. The intention here appears to be not only to improve proficiency, but also to expose teacher trainees to the learner-centred and communicative language teaching approaches that are popular in these countries.

4.2 Mentoring by senior teachers

Because the change from English-medium to Malay-medium schooling happened only gradually after 1963, many of the more senior teachers were educated at English schools and are highly proficient in English; such teachers in our study reported finding teaching in the English-medium easier than teaching in Malay, or at least no additional burden. In the admittedly very limited number of schools we visited, we found that these senior teachers played an important mentoring role in, amongst other things, the area of language support for younger teachers, who had been educated at school in the Malay-medium, and who initially struggled with, for example, English technical terms in their disciplines. It thus appeared to us that a critical weight of English-proficient senior science teachers was a valuable resource for younger science teachers and for the success of the ETeMS programme.

4.3 Existence of a positive attitude to learning English

A positive attitude amongst the teachers we interviewed is reflected in a number of measures teachers take on their own. Some of the teachers we interviewed reported consulting web-based sources such as dictionaries, which give guidance on pronunciation, for example. Two teachers reported having interactive English-language blogs, which they and their students used to clarify content. One teacher with such a blog reported that this blog has improved her own proficiency, as some of her students' English is better than hers.

5 SUPPORT FOR LEARNERS

5.1 English for Science and Technology as an examination subject

As a support to those taking Science and Mathematics, a science-content-based English proficiency subject was instituted. This is taken in addition to the regular English, and is an optional subject from the senior high school years. The teaching of this subject is a further load undertaken by English teachers.

5.2 Classroom language support for learners by teachers

Teachers reported that they introduced new topics by pre-teaching vocabulary, and that they addressed certain aspects of English grammar in their classrooms. Providing language support of this kind is very valuable for L2 learners. We also observed a teacher modelling the lab report genre, thus

scaffolding acquisition of written literacy. The in-service instruction mentioned above could focus on equipping teachers to provide language support of this kind.

With regard to codeswitching, our observation of classroom interaction and our interviews with teachers and learners indicated that all direct teaching (at least while we were there) took place in the medium of English, with minimal code switching; however while the learners were doing exercises or practical work, much interaction between learners and between teacher and learners was in the Malay language or even in Chinese medium.. Teachers reported that if learners sought clarification, they often did so in the Malay language, and that then the teacher would repeat or elaborate their explanation in Malay. Thus a judicious use of code-switching appears to be used: use of the mother tongue (for Malay-speaking learners) is not entirely removed, but English is the primary language of the classroom, and explanations are given first in English. As outlined above, the schools we visited were urban schools, so practise may be different in rural schools, from which much of the rationale to return to Malay-medium has apparently come.

5.3 Bilingual examinations

At least for national examinations, Mathematics and Science examination questions are provided in both English and the Malay language. Learners may answer in either language. In tests and classroom exercises too, both teachers and learners reported that on occasion learners provide an answer or a small section of an answer in Malay, possibly, as one teacher reported apologising in brackets for doing so.

6 POSITIVE VALUE AFFORDED TO THE MALAY LANGUAGE

Literature on bilingualism suggests that affording a positive value and a respect to learners' mother tongues is likely to make acquisition of a second language easier (Clarence-Fincham 2000). In Malaysia the Malay language has been afforded a very positive value not only by being made the national language, but by being used in important domains such as the law courts and for education. To a lesser extent Mandarin and Tamil have been afforded positive value by being used in primary education.

7 LIMITATIONS OF MALAYSIAN APPROACH

From the Malaysian experience, an approach in which learning is in the L2 and where fairly substantial language support is provided appears to work in a city context where quite a lot of English is spoken both within and outside of school. The decision to change back to Malay-medium instruction from 2012 was not regarded by our informants as necessary or beneficial to their schools, but they nevertheless considered that this change would benefit learners in rural schools. It is thus clear that the fairly wide range of support described above may still not be enough in contexts where school is the only context for use of the L2.

8 CONCLUSION

Malaysia had always pursued to progress in their education system with appropriate policy regard to the learning of L2. To solve the problem of poor learner and teacher proficiency in the language of learning and teaching, a necessary first step is the recognition of this as an issue. As a further step, a decision needs to be made either to move towards formal mother tongue instruction (thus allowing extension of the present mother tongue to oral transmission of information to reading and writing about this information), or to provide extensive language support for teaching in a second language, which may include, or be even more substantial than, the strategies suggested in this article. This is necessary for the sake of present and future generations of school children, as well as for the sake of the economy, which needs a high level of written literacy, whether in English or mother tongue, as well as a higher level of content understanding than can be achieved in the present system where learners receive an orally transmitted education in a mix of mother tongue and L2, but little assistance achieving the other half of their education: reading and writing about this knowledge in one or other of these languages.

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