
Language Preference for Science and Technology at Tertiary Level in Malaysia

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Introduction

The role and status of the English language in Malaysia today has changed dramatically from its earlier status as the prestige language of the colonial era. The end of the colonial period, however, did not mean the cessation of the English language in Malaysia. Even when Malaysia was trying to unify itself through the adoption of Bahasa Malaysia (BM) as the national and official language, English was never completely forgotten.

In 1957, the Constitution of Malaya, specifically the National Language Act, made English an official language together with Bahasa Malaysia. This role was accorded to the English language for ten years after independence. In 1967, the Revised Act made Bahasa Malaysia the sole official language of Peninsular Malaysia. However, the Constitution of Malaysia 1963, allowed English to remain as an official language for East Malaysia for ten years after the independence of Sabah and Sarawak and their entry into the newly

formed Malaysia. As a matter of fact, the implementation of Bahasa Malaysia as the sole official language of Sarawak only took place in 1985.

In 1971, the National Language Policy together with the New Education Policy made Bahasa Malaysia the national and official language of Malaysia and it became the medium of instruction in all national schools. This process together with nationalistic vigour characterised not only the school system but also institutions of higher learning. Resources were fully concentrated on the teaching and learning of the national language, the production of teaching materials in the language, and the training of teachers for the language. Consequently, English was pushed into a "low-key" position (Asmah Haji Omar, 1992). Today, the above change and process is viewed as one of the reasons for the decline in the proficiency in English amongst Malaysians.

The development and use of English has always been of interest to nationalists and academics. At times, the widespread use of English receives resistance as it is considered to be the language of the colonialists. Abdullah Hassan, a Professor in Malay Linguistics at Universiti Sains Malaysia, was quoted in the literary section (of the *New Straits Times*, January 24, 1996) as having said that a foreign language, especially a colonial language, is not suitable for a formerly colonized country which has her own native language or mother tongue to adopt as her official language (to be used as the a main medium of education at all levels, as a language for development, etc.) Abdullah believes that the adoption of a foreign (in this case, colonial) language will re-orientate the people of the country towards practising the culture and thinking of their colonial masters. The country will become an ardent follower of her colonial masters, and will not develop her own independent mind, *minda bangsa*, or "national intellect."

Today, the view that English is a colonial language is mostly outmoded. The majority of the people of the world today are co-possessors of the language. It is actually being shared by 700 million of the world's population (TESL-EJ,1994). In talking about the universality of English, Asmah Haji Omar (1992) mentions a scene from the film "Escape from the Planet of the Apes" where the ape, Cornelius, was asked by the Presidential Board of Inquiry, "Do you speak any language other than English?" Cornelius' reply was, "English? What is English? We have been speaking this language all our lives. We learned it from our parents, and they from their parents, and so on. This language has existed for two thousand years."

In a global sense, English is no longer a language which belongs to or is identified with a single race or country. The language is not the language and culture of the Anglo-Saxons. It is the language of international diplomacy and business. It is used by people of different cultures and sub-cultures.

The realization that English is the language of wider communication and no enemy to nationalism has initiated the move to incorporate the use of English as medium of instruction at tertiary level for the teaching of science and technology. This course of action to arrest any further decline in the use of the English language is deemed acceptable because Bahasa Malaysia is presently secure in its status and role as the official and national language.

We are living in an era of information explosion. The need for the general population to be proficient in English is even more apparent now as "three-quarters of the world's mail and four-fifths of its electronic information is in English. The bulk of existing know-how in science and technology is in the language" (*Asiaweek*, June 16, 1995).

As trends are changing in view of the country's political stability and expanding economic opportunities, the government is defining new limits for the use of English and the Prime Minister has called for the teaching of science and technology at tertiary level to be in English. It is seen as a way of achieving industrialization and internationalization. He also mentioned that it was necessary to consider a method of expanding tertiary education which gives priority to the national language whilst improving the standard of English. It should be emphasized, however, that the Prime Minister is not in any way de-emphasizing the use of Bahasa Malaysia. He simply states that the government realizes the importance of English as a second language and its role in stimulating the nation's growth.

These recent developments allowing English to be used as a medium of instruction for the teaching of science and technology have given rise to controversy among some academics and intellectuals. They are seen as ways of undermining the role and status of the national language. There are even feelings that learning the English language could possibly change the learner into something else, that is, after acquiring the language, the learner will not be the same individual that he once was. Anon Mohamad, a language consultant, feels that Bahasa Malaysia should be used in the teaching of science and technology to ensure values found within Bahasa Malaysia are assimilated into the minds of students. She strongly feels that these values are important in developing a group of students who are thinkers (*Utusan Malaysia*, December 13, 1995).

Kongres Cendekiawan Melayu IV (Congress of Malay Intellectuals IV) asked the government to reconsider allowing the use of English in the teaching and learning of science and technology. In a statement to the government, the congress asked that English for science and technology be restricted to private tertiary institutions. However, it is believed by many Malay intellectuals, as mentioned in the *Kongres Cendekiawan Melayu IV* (July 1995), that the government must play a positive role in promoting the national language as a medium for disseminating knowledge, democratizing education, promoting creativity, and hence the development of the nation.

There are also academics who feel that allowing English to be used at tertiary level would jeopardize the growth of the national language. They believe it would also indirectly halt the development of the national language into a scientific language.

Unfortunately, those who oppose allowing English to be used for teaching and learning science and technology do not realize the linguistic advantages this change in policy could bring. The linguistic theory of relativity (Sapir-Whorf Hypothesis) states that an individual perceives the world through his language. This is definitely an advantage as seeing the world through two languages is definitely better and clearer than through one. The thought patterns acquired through learning a second language should complement, not confuse, those already in existence as a result of one possessing a first language.

Purpose of the Study

The purpose of the study is to investigate perceptions towards using English for science and technology among academic staff at various tertiary institutions in Malaysia. The study neither promotes the use of English on a widespread basis nor questions the status and role of the national language. Areas of focus for this study include perceptions regarding respondents' attitudes towards English and using English as a medium of instruction for science and technology at tertiary level.

Significance of the Study

The study attempts to look closely at the government's decision to incorporate the use of English in the teaching of science and technology at tertiary level. The findings provide further understanding of the current stand of subject specialists (teaching staff) for science and technology at various insti-

tutions and the implications of the implementation of this policy for educational and social change in Malaysia.

Procedure

A questionnaire was administered to subject specialists at Universiti Putra Malaysia (UPM, then Universiti Pertanian Malaysia), Universiti Sains Malaysia (USM), Universiti Kebangsaan Malaysia (UKM), Universiti Utara Malaysia (UUM), Universiti Malaya (UM), Universiti Teknologi Malaysia (UTM), Universiti Islam Antarabangsa (UIA), Universiti Malaysia Sabah (UMS), Institut Teknologi MARA (ITM), Sunway College, Kolej Damansara Utama (KDU), Tunku Abdul Rahman (TAR) College, and Inti College. The questionnaires were distributed through the Deans or Heads of the faculties or departments and the completed questionnaires were returned to the researchers within a month.

Sampling

A total of 420 questionnaires were distributed and 260 were returned. The respondents for the study comprised subject specialists from the science-based faculties at the various tertiary institutions such as the Faculty of Engineering, the Faculty of Food Science and Biotechnology, the Faculty of Science and Environmental Studies, the Faculty of Computer Science and Information System, and the Faculty of Veterinary Medicine and Animal Science.

Research Instrument

A questionnaire survey was used to procure the data. Data was reported in terms of frequencies and percentages using the Statistical Package for the Social Sciences (SPSS). The questionnaire comprised three parts. Part one sought information on the respondents' biodata and educational background. Part two aimed at getting respondents' perceptions regarding their own proficiency in the English language and their feelings towards the language while part three sought responses on their perception regarding the use of English at tertiary level for science and technology.

Analysis of Data and Findings

There were a total of 260 respondents in this study of which 138 were male and 122 female. The ethnic breakdown is as follows: 63% of the respondents were Malays, 22% Chinese, and 15% Indians. Forty-four respondents were

between 20-30 years old, 121 between 31-40 years, 73 were between 41-50 years, and 16 respondents were above 51 years old.

Sixty-seven percent of the respondents stated that Bahasa Malaysia was their mother tongue, 21% Chinese, 10% Tamil, while the figure for English and Hindi was 1%. When asked which language they used at home, 30% said they used Bahasa Malaysia only, 12% English, 5% Chinese. One percent claimed they used Tamil. Another 1% stated that Hindi was the language they used at home. Seven percent said they used both English and Tamil. Thirty-two percent said they used Bahasa Malaysia and English. Twelve percent stated they used English and Chinese at home.

A total of 42% were educated in the Malay medium, while 41% stated that English was the medium of instruction during their primary education. Only 11% reported that they received their primary education in Mandarin. One percent had their primary education in Tamil. This number was slightly different when they were asked about the medium of instruction for their secondary education. Thirty five percent of the respondents received their secondary education in the Malay medium while 57% were from English medium schools. Three percent went to Chinese schools, and 1% to Tamil schools.

Half of the respondents (50%) obtained their Bachelor's degree in Malaysia, 12% in the United Kingdom, 27% in the United States, 5% in Australia and New Zealand, 2% each in India and Canada, and 1% in Indonesia. However, most of the respondents obtained their Master's degree abroad (33% in the United Kingdom, 40% in the United States, 18% in Malaysia, 3% Australia and New Zealand, and India, and 1% each in Belgium, Canada, and Indonesia). The data indicate a similar situation for their doctoral degree; 54% obtained it in the United Kingdom, 19% in the United States, 7% in Australia and New Zealand, 1% each in India and Indonesia, 7% in Canada, and 11% in Malaysia.

When asked to comment on their fluency and proficiency in the language, 95% felt that they are able to speak the language fluently and 94% felt that they could write in the English language proficiently. In fact, 66% of the respondents stated that they would prefer delivering their lectures in English. The majority of the respondents (97%) feel that they are able to read and understand texts in English easily.

In responding to the question of whether they liked to speak English, 89% stated that they did. However, when asked whether they would rather be proficient in English than Bahasa Malaysia, only 31% responded that they would prefer to be proficient in English than Bahasa Malaysia.

An interesting point to note is that 76% of the respondents stated that English is not a difficult language to learn and 84% believe that mastering two languages, e.g. Bahasa Malaysia and English, is not a difficult task.

A large percentage of the respondents (84%) indicated that one should not learn English for specific reasons only. The reasons for the acquisition of the English language should be for more global purposes.

It is clearly understood that the national language is Bahasa Malaysia. There have been many discussions concerning the intrusiveness of English and the damaging results that it may have on the wider use of Bahasa Malaysia. However, 91% of the respondents did not consider that the use of English would demote the status of Bahasa Malaysia. It is also enlightening to note that none of the respondents considered learning English a waste of time and 90% felt that English should not be excluded from the university curriculum.

All the respondents felt that gaining knowledge in science and technology is easy if one knows English. Eighty percent of the respondents felt that it was necessary for a student to be proficient in English for him/her to excel in his/her studies. However, 68% of the respondents did not agree that students who are more proficient in English are smarter in their studies than those who are not.

As for subject specialists, 85% of the respondents felt that it was necessary for teachers to be proficient in the English language if the teaching of science and technology is to be conducted. This is probably because as stated by 93% of the respondents, most reference materials in the fields of science and technology are in English. Interestingly though, 52% of the respondents indicated that it was not necessary for a student to be proficient in English in order to obtain a minimum passing grade in the course(s) which he/she teaches. However, a large percentage of the respondents (77%) felt that it was necessary for a student to be proficient in English to graduate as a well-qualified professional in his/her field of specialization.

In responding to the question of whether English should be made the medium of instruction in all science faculties at tertiary institutions, 49% of

the respondents felt that it should rightly be so. Only 22% felt that it was not necessary for English to be made the medium of instruction in science faculties. However, 57% of the respondents felt that English should be the medium of instruction in all final-year science courses at the tertiary level. When asked whether all first year science courses should be taught in English, only 41% of the respondents responded positively

Implications for Educational and Social Change

1. *Premier Position of Bahasa Malaysia*

The Education Minister announced that tertiary institutions can with immediate effect use English as a medium of instruction to teach science and technology because, 'using English as a medium of instruction does not mean the government feels that Bahasa Malaysia is unimportant. To be a global player, the government recognizes the importance of English and the role it plays in moulding better students' (New Straits Times, June 23, 1995) The government has given assurances to preserve the premier position of Bahasa Malaysia; however, it also has to take a realistic approach and allow the use of English as medium of instruction for science and technology at tertiary level.

Tertiary institutions need not wait for the University and University Colleges Act 1971 to be amended. The Education Minister also said the government had decided on this due to the lack of books in Bahasa Malaysia in the fields of science and technology. Errors and mistakes in translations from English to Bahasa Malaysia are very common. Besides, translation is a time-consuming process.

2. *Mediocre students*

The change in medium of instruction from Bahasa Malaysia at the primary and secondary levels to English at tertiary level could result in students being mediocre in their academic performance. This is because they lack the mastery in English for academic purposes as they have only been exposed to English for communication purposes at the primary and secondary levels.

The teaching and learning of English at the secondary level in Malaysia has not prepared students for English to be the medium of instruction at tertiary level. This change in medium of instruction will have serious implications for tertiary education as students who are not proficient in English will definitely encounter problems. Entry requirements of tertiary institutions do not normally specify a passing grade for English. This means that

even students who failed their English in the school-leaving examination could still be accepted into tertiary institutions as they are awarded the school-leaving certificate.

3. *English for science and*

The introduction of English as the medium of instruction for science and technology at tertiary level might not have the effect of raising the standard of English. A better solution to arrest this problem would be to introduce it at the primary and secondary levels for the teaching of science and mathematics to help the students cope with the learning of science and technology at the tertiary level. Requiring students to obtain a minimum passing grade in the English language would also be a step in the right direction.

4. *Entrance into tertiary institutions*

Allowing English to be the medium of instruction at tertiary level in Malaysia will not affect the status and role of Bahasa Malaysia. Students and schools will still emphasize the need to be proficient in Bahasa Malaysia as students will only be accepted into the various programmes at the tertiary level after they have obtained a minimum credit pass for Bahasa Malaysia in the national school-leaving examination Sijil Pelajaran Malaysia, (SPM).

5. *Readings in science and technology*

Knowledge of science and technology transcends all boundaries. Advanced science and technical readings are mostly in English, therefore, it is easier and better for students to learn it in the original language. Most research findings reported in scientific journals are in English. Therefore, science students should be proficient in English in order to keep up with progress and developments in science and technology.

6. *Bahasa Malaysia as a language for science and technology*

Some respondents, however, felt that not using Bahasa Malaysia in science and technology will suppress the development and usage of the language. This being the case, Bahasa Malaysia needs to be developed into a language of science and technology. It is the national and official language and should not be made to compete with English. Use of English should then be complementary to Bahasa Malaysia. We must realize the importance of developing both English and Bahasa Malaysia. In fact, Bahasa Malaysia is presently being used at all levels in government transactions.

7. Regional centre for education

The Malaysian educational market is estimated to be worth about RM3 billion a year (Lim, 1995). English has instrumental value due to its advantages as a major world language of science and technology, publishing and commerce. It has the ability to link Malaysia to the developed English speaking world. Allowing the use of English at tertiary level would provide a major implication for educational change as this could make Malaysia a regional centre for education. As a result, it is the language that allows tertiary education in Malaysia to be accessible to the international population and this could become a fast growing business in the country. This augurs well with the government's aspiration to transform Malaysia into an "exporter" of tertiary education.

8. Social and economic growth

Language is an important social phenomenon and in today's world English is important to stimulate social and economic growth. The learning of English should not be allowed to become a political issue as the right to learn a language should be the right of the individual. Excluding English from the curriculum would be a contradiction to our open policy as a nation in the world community. In the era of the global village, the most acceptable language is English as it is a language that is widely spoken by millions of people all over the world. English opens up the corridor to an important and huge store of knowledge. Learning a language is part of one's education and must be promoted and not discouraged or prohibited.

9. Participation in trade and world affairs

If Malaysians do not reach a certain level of proficiency in English, the nation's trading would be confined to domestic transactions and no trading would take place in the international business arena due to language barriers. This is manifestly the case as the deteriorating command of English causes Malaysians to play a less active role in world affairs such as international forums and conferences.

10. Employment

Language competency, or the lack of it to be more specific, is a barrier to employment, education and economic well-being. It has been noted earlier by the majority of the respondents that it is necessary for a student to be proficient in English in order to be considered a well-qualified professional in his/her field. Proficiency in English prepares students to face the ever increasing demands and challenges of today's world. Effective English usage

is necessary for graduates to be marketable and essential to those who want to compete and succeed internationally.

11. *Use of mother tongue*

Some respondents noted that English helps in education but it is not the most important factor for success. It has been observed that countries which use their mother tongue in national affairs and their educational system like Japan and Korea, are more developed than those who use English as their national language. Nevertheless, the work culture of these societies does not necessarily apply to Malaysians.

Conclusion

The use of Bahasa Malaysia has been implemented successfully in Malaysia. As a result, Bahasa Malaysia's primacy is well established. It is the medium of instruction for all levels of communication and education, especially in the public sector (government). However, with the country's present aspiration of becoming industrially developed and known world-wide, it seems that English is the language that allows Malaysia to take a quantum leap to achieve international success.

The findings of the study indicate that there is a positive outlook towards the use of English at tertiary level. It is recognized as being necessary for the teaching and learning of science and technology. A main concern, however, is the status of the national language. It is felt by some that allowing English to be the medium of instruction would undermine and prevent the national language from further development. The fear of allowing English to take over the role and status of Bahasa Malaysia is real. It is also an issue which has been highly politicised. Much still depends on the government's stand on this issue.

There is a necessity in Malaysia to master both languages if not more. We should not view this issue as being a competition where the development of one language jeopardizes the development of the other. Positive consequences for one does not imply negative consequences for the other as 'no country will downplay or debase its own language' (*Asiaweek*, June 16, 1995). Baker (1992:21) states that 'attempting a language shift by language planning, language policy making and the provision of human material resources can all come to nothing if attitudes are not favourable to change. Language engineering can flourish or fail according to the attitudes of the community'

There is a need for an international medium for acquiring knowledge. For now, English would logically be that language as it is no longer the language of the English people and the western world. It is an international language and belongs to the international community.

Conclusion

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