

## **SHIFTING AND CHANGE IN THE MEDIUM OF INSTRUCTION FROM BAHASA MALAYSIA TO ENGLISH IN SCIENCE AND MATHEMATICS**

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### **ABSTRACT**

The change in the medium of instruction from Bahasa Malaysia to English in the teaching of Science and Mathematics in the Malaysian education system by the government in 2004 has drawn much controversy both from academicians and politicians. Some fear this change will erode the role of Bahasa Malaysia as the national language and, secondly, the national language will not be able to develop as a dynamic language to be used in mathematics and sciences. However, it is pointed out that while inherent weaknesses in Bahasa Malaysia fails to provide the knowledge and information in mathematics and sciences, English must be adopted so that Malaysian students will be able to compete in the field of sciences in the face of the globalized world. This change does not diminish the role of Bahasa Malaysia as the national language, which acts as the catalyst in the nation building while English language is used as a tool to enhance the learning and teaching of science and mathematics.

### **INTRODUCTION**

English language is an acclaimed international language and the language of sciences and mathematics today. According to Abdullah Ahmad (2002, Dec. 3), English is the lingua franca :

Over the time, colonialism we loathed has disappeared. English has become even more important than before. Development in knowledge is articulated in English, and not mastering it is to deny ourselves a bigger canvas, education, encounter with humanity and life of inquiry and questioning.

This clearly shows that English as a colonial language has long gone. It seems that English Language has become the only language to be used by non-native English speakers in Science and Technology, internet, world politics and economy, not to mention its impact on the globalized world today which is the beginning and cannot be stopped by any other forces. English language has become the most important language in this science and technology and computer world that it has become indispensable in the world of knowledge and information and communication.

How are we to react and convey the ever increasing, tremendous and staggering advance of knowledge in the above mentioned disciplines? It is impossible. The change is stunning. Translation is not the answer. We do not have sufficient expert and personnel to translate the ever-increasing knowledge nor are we sufficient with terminology and words to translate the knowledge. Dr. Mahathir, our former Prime Minister, has pointed that the rate of translation is slow compared with the advance and increase of knowledge that is staggering! One thing is certain: Are we going to spend time in coining new words and terminology, a lengthy, tiring and time consuming process while other nations advance and progress with direct assimilation of knowledge?

Do we want to be left behind?  
Don't we want to progress in Information Technology?  
How to make the future generation IT knowledgeable and progressive?  
How to prepare the future?  
How are we to involve and participate in the globalized economy?

I can go on giving inexhaustible list of questions. But let us answer the straightforward question like: Do we want to go on enjoying the progress and be in the prospects of achieving great strides in the discovery of science and technology?

If the answer is yes, what must we do? We should prepare the young generation in the knowledge world to compete with the world. This is very important. It lies in the hands of the present generation to

make a shift. Change is continuous. Change is the very essence of living. One will be redundant and stop living if we do not change with the world. Change is the process by which the future invades our lives (Toffler 1971). Thus, change in education is very important, as education is dynamic.

### **Change and the Teacher**

According to Fullan (1999), Change and Development are inseparable because external events affect individuals so the ability to change is an essential; skill and says change is mandatory but growth is optional.

However, the change that we need to do is radical, something different from what we have been doing. This will need a lot of guts in the case of teachers and educators and most importantly by the government of the day. The government and educators must believe in the advantage and the importance of the change that is being implemented. If the person in charge does not believe in it then the action of the agents of change will be very superficial and unaffected and the change is futile.

According to Bolitho (1993), changes can become a permanent feature only when we place them in our belief system and proceed with toughness and take the risk of even losing our popularity with our learners and colleagues.

At the same time **change** also needs time to think and take action especially when change is demanded by external forces. The reflexes of the people are rather slow, cautious or confronted with fear and skepticism and negative attitude especially if the change is brought about by the top decision makers other than themselves. Yet, changes are imperative and need to be followed in order new demands in the socio-economic orders are met.

Bolitho (1999) further says that changes are introduced for political expediency or insights based on research and theory and in the case of curriculum and examination, it is seen in wider social context.

So, **changes** in education have to take place because of **social factors**. However, recently in recent times economic factors have become paramount importance because such forces play fundamental function in the economic lives of the world today. Therefore, the popular belief that changes must be made by careful planning is not true therefore set aside and consequently unpredictable changes are made and implemented to meet contingencies.

As Fullan (1993) puts it that most changes are unplanned and therefore we must recognize as that of developing our inner and outer learning capacities.

### **Obstacles to Change: The Reaction of the Educator**

A typical teacher's reaction can be summarized as : 1) being indifferent (not interested in the change); 2) being obligated (interested half heartedly proceeds with the change); and 3) being proactive (aggressive in his/her duty and takes full responsibility to effect the task).

As pointed, the real change can take place only when the educator realizes the need for change and it is compatible with the beliefs and values of education of the country concerned. The change that needs to be taught in English need not have cultural imperialism. This we know that thousands of government students who study overseas in the medium of English have not been slaved by the English culture. The culture that we are concerned here is the culture in science and technology and global commerce.

However, we need to remember that the teacher is the agent of change and is the key player in an educational institution. With his own initiative he moves and moves the people around him – the students and others. Yet, before he can do that he must be convinced that the change that he is going to make is for the better. More importantly, the change is compatible with our beliefs and values. Once he is convinced that it is a positive change, his negative psychological barriers give way for a positive one. He gears himself for actions with his mental preparations. He then becomes responsible beginning from the classroom preparation and to the transforming the minds of the people who become his responsibility to effect changes until the change becomes the norm.

He may be confronted with a lot of obstacles, frustrations and discomfort while convincing some of his colleagues, or facing difficulties with the students who cannot change overnight but need to be changed. In the case of changing the medium of instruction – from Bahasa Melayu to English, a drastic change occurs not only in the instruction but also demands a change in the behavior, attitude and mindset of the teacher and the learner. Moreover, the change puts the students in a situation whereby they do not understand what the teacher is talking about. They cannot follow the lesson. The teacher is confronted with a situation where he needs to educate the students in English and make the student understand the subject matter in English. Here, although the teacher is faced with a multitude of problems, he is motivated and committed to meet the challenge of change.

He continues to innovate because he is convinced that the aspect of change needs to be done and it is one that is necessary. Here, the teacher undergoes a professional development with valuable and enriching thoughts. This could be a chance for the teacher to use his potentials. The teacher is open to new changes, ideas and knowledge.

### **English as a Tool of knowledge and progress**

English has become the body of knowledge in numerous fields and disciplines. Therefore English has become ‘the vehicle of the body of scientific or technological information’ (Mackay et al. 1979). According to a UNESCO survey (Mackay & Mountford 1978) two thirds of engineering literature is written in English.

In a question and answer session, the then Prime Minister Dr. Mahathir Mohamad said,

I must admit the ability to speak and explain things in English has served me very well. I feel mastery of English is very important because of our country’s increased foreign relations with other countries and to enable us to communicate with foreigners, whether in Malaysia or overseas. We cannot go other countries and speak our own language because no foreigner is going to understand us. We therefore have to emphasize the need to master two languages- Bahasa Malaysia and English.

(New Straits Times, Dec.29 2002)

### **Realism and progress**

Abdullah Ahmad who welcomes the government’s new approach to English says,

I am delighted that the Government is no longer gripped by the politics of language chauvinism. It has wisely decided to give more importance to teaching of English after a generation of benign neglect.

(New Straits Times, Dec. 29 2002)

He continues to say that although we spend 4.5% of GDP 1999 on education topping Asia after Israel, which spends 9% of its GDP, sadly the performance in mathematics and science is in a sordid state. Singapore leads the performance, which spends only 3.6% of GDP. If we do not acquire English then we cannot become an IT and Knowledge based society as human capital is the function of education and education in English is pertinent to achieve to this end.

Today, the Arabians, Chinese, and the Europeans are pursuing acquisition of English as English has become the globalized commerce and the language of the Internet. French that was hitherto the most favored language of Europe is being replaced by English with much fury of the French.

### **What else can English language offer us?**

By reading in English, we get to read more materials in English, which opens our eyes and the mind. Abdullah Ahmad aptly says reading in English ‘and not mastering it is to deny ourselves a bigger

canvas, education, encounter with humanity and life of inquiry and questioning' (New Straits Times, Dec. 29 2002).

For students in the higher learning institutions, reading references is a paramount importance because references are important as part of learning and doing research. Yet, according to an academician from Malacca,

... most students hardly use references in the library to supplement lectures as a consequence there is hardly any opportunity for real learning or creative thinking and our graduates are not able to function in the work environment much less to stand up to challenges or to solve problems.

(The Star, Jan. 21 2002.)

Such an environment can give rise to study manuals by lecturers and such manuals are very often plagiarized materials. As we know, most of the references are found in English. The study-manual trend gives rise to half-baked graduates who do not read original materials but rely only on manuals. In many universities and colleges students are not able to use library materials because they cannot read and understand English.

### **Change – Is English Language a Necessity or Optional?**

The change that is designed by the authorities gives the students many advantages. Firstly, he will be able to read English books, which range from literature to space science. More importantly, he will be able to read original literature or authentic sources by himself for the first time. He does not have to rely on translated scripts or notes and manuals given by his lecturers. Moreover, he will be able to read extensively and all literatures relating to his studies making his research valuable and authentic. He can call himself as truly a learned person.

Secondly, he will have a chance to read articles that amount to reading for pleasure. There are innumerable books to be read for pleasure and entertainment. Some examples are articles that are published in Reader's Digest.

Thirdly, there are articles, which can satisfy the intellectual taste of some readers. For example, the book 'Future Shock' by A. Toffler (1971) has been read by many intellectual people including our Prime Minister. The book obviously prepares us for the future. Likewise, there are books in science and technology, which clearly expand our horizon in such fields. Besides intellectual development, there are messages, which open our eyes and the mind of the reader. Thus, the reader will be able to see things in different perspective making him a matured and an educated person in true sense. Dr. Krishnamurthi, the world-renowned Indian philosopher says what an education should be. He states that

We may be highly educated, but if we are without deep integration of thought and feeling, our lives are incomplete, contradictory and torn with many fears; and as long as education does not cultivate an integrated outlook on life, it has very little significance.

(in Abdul Rashid Hanafi, The Star Feb 9, 2003)

Fourthly, there are articles on health that are published in magazines and newspapers. These articles contain facts and treatment on health and diseases. The reader has a chance to read about them and know about his own health conditions. There are articles on herbal treatment, an alternative or supplement treatment for diseases that can be read and followed. Our own National papers such as 'The Star' and 'The New Straits Times' carry numerous articles on health and many other important topics, which are invaluable to personal and interpersonal development.

Fifthly, we are no island but part of the world. In a world of globalization, our country's participation and integration in world's commerce and politics becomes paramount importance. To this end, we need to prepare diplomatic corps that are capable and proficient in English to participate in world forums and seminars so that our opinion and ideas about world issues are heard and acted by world bodies like the United Nations and others. The former UN representative of our country and a well known Malaysian

diplomat, Tan Sri Razali Ismail, has expressed concern about the state of younger breed of diplomats as 'the range of diplomatic activities is ever expanding, and today it is not merely confined to political and security matters. Issues have moved from bilateral interests to global multilateral interests' and 'it is vital to be exposed to various languages and cultures of the world in order to thrive in the globalized world today' (in Ahirudin Attan, *The New Straits Times*, March 23, 2003).

### CONCLUSION

Does the change using English in the teaching of Science and Mathematics threaten the development of Bahasa Malaysia and put Malaysia at risk? These questions were answered in the Second Malay Education Congress in 2004 in Kuala Lumpur. Some speakers were pessimistic about the change, yet some saw the change as a necessity and could bring positive development to the nation.

For example, Kamal Sukri Abdullah Sani, in his research entitled, 'The effects of using English in the Teaching of Science and Mathematics in Malaysian Education Institutions' concluded that the potential of Bahasa Malaysia as a medium of communication in Mathematics and Science is denied and therefore the language will not develop. Along the same line, Dr Nor Hashimah Jalaluddin, in her paper entitled, 'The Acceptance of the Teaching of Science and Mathematics: A Conflict Between Two Classes' says the policy would be harmful for national unity.

However, according to Professor Datuk Dr Shamsul Amri Baharudin, the Director of the Institute of the Malay World And Civilization, Universiti Kebangsaan Malaysia, in his paper at the Congress, in defending the policy said that critics have to view at the two roles the respective languages: English is used as a tool to impart knowledge and Bahasa Malaysia in nation building. English language is a language known to be used as language knowledge. The following questions can be posed to ponder over the use of English language as a medium of instruction in Science and Mathematics : 1) Is it used because of the inherent weaknesses of Science and Mathematics? 2) Is it language issue or one of nationalism? or 3) Is the reluctance to use it due to lack of facilities or qualified teachers?

However, Dr Ismaznizam J Azyze, (in his paper presented in the Second Malay Congress, 2005) from Universiti Kebangsaan Malaysia's School of Language Studies and Linguistics, is of the opinion that teaching and learning of English in the schools may have problem because students scoring 'A' in Sijil Pelajaran Malaysia are not able to communicate in English when given in a place in a public university.

Defending the policy, Dr Mahathir, the former Prime Minister, during whose administration this policy was implemented, said that it is the only way for the Malays to progress if they are willing to face some difficulties if not the community would not gain mastery in the language and subjects.

The results in the change of medium of instruction in English cannot be known immediately. Nevertheless we have to meet the challenges of today and tomorrow for which education – the human capital – has become very important. So, it is up to us to make changes in education so that we are prepared for tomorrow and hereafter.

### REFERENCES

- Abdullah Ahmad. (2002, Dec. 29). Realism at last on English. *New Straits Times*.
- Abdul Rashid Hanafi (2003, February 2). The making of an educated person. *The Star*.
- Abdul Razak Ahmad. (2005, April 3). Too early for a verdict. *New Straits Times*.
- Ahirudin Attan. (2003, March 23). *New Straits Times*, March 23.
- Bolitho, R. (1999). *Some Dimensions of Changes In Education: Managers in English Language Teaching & Learning : Traditions, Changes and Innovations*.
- Fullan, M. (1993). *Change Forces*. London : The Falmer Press.

Kasimah Mustafa. (2002, September 25). New Straits Times, Sept 25.

Mackay, R. et. al. (1979). Reading In a Second Language Hypothesis, Organization, and Practice. Massachusettes:Newbury Home Pub.Inc.

Mackay, R, & Mountford, A. (1978). English for Specific Purposes. London : Longman.

Norizan Razali. (2002, December 29). Community plays a big role in teaching & learning of English. New Straits Times.

Letters to editor. (2002, January 21).The Star.

Mahathir Mohamad. (2002). New Straits Times, Dec. 29.

Toffler, A. (1971). Future Shock. London: Pan.