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Transformation of language in teaching and learning policy

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Abstract

Due to the abolishment of the Teaching and Learning of Science and Mathematics in English (PPSMI) policy by the Malaysian Cabinet in July 2009, a new policy which is called Upholding the Malay Language and Strengthening Command of English (MBMMBI) policy was introduced. Both languages have their role and importance. The Malay language has long since been the language of knowledge and unity in Malaysia, whereas English is the international communication language. This study focuses on students' perspectives regarding the issue of the transformation from PPSMI to MBMMBI. A survey has been conducted to gather information from students who enrolled for Science and Mathematics courses. Results show that the students are taking a positive standpoint in upholding the Malay language and at the same time strengthening the command of the English language. The transformation from PPSMI to MBMMBI is hoped to generate Malaysians who are fluent and confident in both Malay and English languages.

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Keywords: PPSMI; MBMMBI; students' perspective; teaching and learning

1. Introduction

The strategy to uphold the Malay language involves the use of Malay language as a medium of instruction for the teaching of Science and Mathematics in national and secondary schools, as well as improvements to the teaching and learning of Malay language. The transformation to Malay language is seemed most appropriate as it is also the national language of Malaysia as stated in the Article 152, Constitution of Malaysia and has been used as the main medium of instruction in education according to the Education Act 1996. Apart from upholding the Malay language, the Ministry of Education is also focusing in strengthening the command of English in order to improve English proficiency amongst the student as English is the second language in Malaysia. The main purposes of MBMMBI are to uphold the Malay language as the national language, to function as a tool of unity and to act as a medium of communication towards achieving 1Malaysia (One Malaysia). It is also necessary to strengthen the English

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language since it is an international communication medium. Competence in English will enable students to explore various fields of knowledge from extensive resources and can motivate them to pursue their higher education.

According to a study conducted by researchers at the Sultan Idris University of Education (UPSI), the discrepancies in the achievement of Science and Mathematics among the rural and urban students were significantly different after the implementation of PPSMI (Mohd Ayob, 2010). This is supported by the findings of the study done by the Ministry of Education Malaysia (Kementerian Pendidikan Malaysia, 2010). Furthermore, many students still fail to master English language after the implementation of PPSMI and most of them portrayed a passive attitude and less interest in Science and Mathematics, especially for students in rural areas. This is due to the difficulty of understanding the subject in English as English is not the medium of command. Thus, the gaps in achievement of Science and Mathematics subjects taught in English between rural and urban schools turn out to be wider.

Implementation of PPSMI received a lot of feedbacks and criticisms (Zaidi et al., 2011; Shaharir, 2009; Kementerian Pendidikan Malaysia, 2010). Studies by Pillay (2003), Foong (2004), Ong and Tan (2008), and Yahaya et al. (2009) also deduced that there are problems in the implementation of PPSMI, particularly at primary and secondary schools levels. Ministry of Education Malaysia continues to monitor and evaluate the effectiveness of the PPSMI (Kementerian Pendidikan Malaysia, 2010). Based on the examination results, the findings show that the achievement in the Primary School Assessment Test (UPSR), Lower Secondary Assessment (PMR) and Malaysian Certificate of Education (SPM), for both urban and rural areas, with Malay language as a medium of instruction is much higher compared to that of English language. In addition, the performance of Science subjects in UPSR 2009, the number of candidates in national schools achieving grades A, B and C showed a decrease of percentage; a decrease from 85.1% to 82.5% for urban schools and from 83.2% to 79.7% for rural schools. Meanwhile, for Mathematics, the achievement of urban students dropped from 84.8% to 80.9% while for rural students dropped from 80.9% to 77% (Tuah & Mohini, 2010). This indicates that students are able to comprehend the teaching and learning in Malay language better as compared to that of English. The outcome from the UNESCO's study shows that students can easily grasp the lessons in their mother tongue in the early stages of schooling (Kementerian Pendidikan Malaysia, 2010). Trends in Mathematics and Science Studies (TIMSS) in 2007 reported that in an international study involving more than 49 countries, the achievement of students in Malaysia for Mathematics dropped from 10th place in 2003 to the 20th place while that of the Science subjects also declined from the 20th place in 2003 to 21st place in 2007 (Mullis et al., 2008).

The success and effectiveness of a policy depend on many factors; such as the teachers and infrastructure. In the transformation of knowledge process, teachers play a key role to ensure that students clearly understand the material delivered (Fox, 1983). Patterns and methods of delivery, voice intonation, language and terminology used which are appropriate and easily understood are important (Ramsden, 1993). Teachers need to be equipped with all the skills mentioned to ensure the effectiveness of teaching and learning process. However, a research finding by the Ministry of Education Malaysia (2010), Science and Mathematics teachers with an excellent command of English are only around 25%. Furthermore, only a small proportion of teachers who totally used English language during teaching Science and Mathematics. Thus the process of teaching and learning becomes inefficient.

Further studies were also carried out in local universities to study the direct impact of the implementation of PPSMI among students involved. The finding shows that the level of improvement of English proficiency among students is nominal whereby the value of increment is not more than 3% during the implementation of PPSMI (Kementerian Pendidikan Malaysia, 2010). Zaidi et al. (2011) found that students at the Universiti Kebangsaan Malaysia (UKM) are more inclined to study Science and Mathematics courses in Malay language. They felt that the process of teaching and learning Science and Mathematics will be more effective if conducted entirely in Malay language. They also believe that teaching and learning in English is less effective but did not rule out the use of English language in teaching and learning as they reckon the importance of English as an international language.

Previously, Malay language has been widely used in higher education institutes such as UKM, whereby UKM has been using the Malay language as a medium of instruction entirely. Idealism of Malay language as the language of knowledge is proven when UKM successfully produced many graduates in various fields including medicine, engineering, sciences and law. Scholars in various fields from UKM, with Malay language background excellently utilized English language in teaching, writing and communication activities (Noriza et al., 2011).

Announcement of the abolishment of PPSMI and the implementation of the MBMMBI were made after the review on various aspects concerning the effectiveness of both policies. The Government also reviewed the opinion

from scholars and public regarding the advantages and disadvantages of PPSMI since the implementation of this policy in 2003. Efforts to fortify the implementation of the Malay language while strengthening the command of English in schools as stated by the Deputy Prime Minister Tan Sri Muhyiddin Yassin are consistent with the policy of dignifying MBMMBI to be implemented from 2012 to replace the PPSMI policy. With the implementation of MBMMBI policy, the medium of instruction reverts back to Malay language in national schools. However, the efforts to improve the command of English language are not abandoned. Thus, the purpose of this study is to analyse tertiary students' perspectives on the issue of the transformation from the usage of English language to the Malay language as the medium of instruction for Science and Mathematics courses.

2. Methodology

To meet the objective of the study, questionnaires were distributed to students from four faculties, which are the Faculty of Science and Technology (FST), Faculty of Education (FPEND), Faculty of Technology and Information Science (FTSM) and Faculty of Engineering and Built Environment (FKAB) of the 2009-2010 academic session. Total number of respondents is 441 students consist of 103 respondents from FPEND, 188 from FST, 57 from FKAB and 93 from FTSM. The four faculties are selected to meet the objective of the study because these students are science stream students and they have similar background in learning Science and Mathematics from primary school up to university level in UKM. Questionnaires are distributed to all respondents using simple random sampling that comprise six questions in Likert scale form (scale 1 – 10). Scale 1 indicates a disagreement and scale 10 signifies the highest level of agreement on the items. The questions are meant to capture students' preferences regarding the objective of study.

The response to the items regarding MBMMBI for each respondent is rearranged as in equation (1),

$$\text{Weighted Score MBMMBI} = \sum_{i=1}^6 w_i * \text{item } i,$$

$$\text{with } w_i = \frac{\sum_{j=1}^N M_{ij}}{\sum_{i=1}^6 \sum_{j=1}^N M_{ij}} \quad \text{for } i = 1, 2, \dots, 6, \quad j = 1, 2, \dots, N, \quad (1)$$

with weights w_i is calculated as the total score for the i -th component divided by the total score, M is the Likert score and N is the number of respondents.

3. Results and Discussions

In a study conducted by Azmin et al. (2009), level of competency of the English language is a factor which affected student's achievement in Mathematics courses at the university level. The results showed students with moderate English proficiency exhibit a negative relationship with achievement in Mathematics subjects. Students who obtained the mean score of Band 5 in Malaysian University English Test (MUET) illustrate better results than those obtained band 4 and below.

In learning Science and Mathematics, there are certain basic skills that need to be mastered by the students such as computational skills, problem solving and communication skills to ensure excellence in both subjects. In previous studies, Mohd Sarif and Abdul Razak (1996), Abedi et al. (1995), Cocking and Chipman (1998) and Madison (1990) concluded that students were facing problems in computing and problem solving skills due to the usage of English language as the medium of instructions. Thus the implementation of teaching Science and Mathematics in English has created another problem to the students (Mohini 2008; Aziz 2004). Furthermore, the problems evolve because most of the students are not ready, not interested and lack of confident in using English as their command language. Hence, deficiency in medium of instructions will have a negative impact on students' achievement in

relevant subjects (Mohd Sarif & Abdul Razak, 1996; Abedi et al., 1995; Cocking & Chipman, 1998; Madison, 1990).

Table 1 presents the weighted scores of the items in the questionnaire. The study found that students gave a positive response towards the implementation of English as the medium of instruction in teaching and learning of Science and Mathematics, with weighted score of 0.192. However, in terms of preference, they are inclined towards the usage of both languages (weighted score of 0.186). Figure 1 illustrates student’s accumulated weighted score for all the items. The score shows that students’ perceptions towards MBMMBI are normally distributed, which agreed with the superiority of central limit theory.

Table 1. Weighted Score for Elements in Students’ Perceptions towards the Medium of Instructions

Item	Students’ Perceptions	Weighted Score
Q1	Teaching and learning Science and Mathematics are fully conducted in Malay language.	0.152
Q2	English for Science and Mathematics discussion is only used during tutorials.	0.137
Q3	Teaching and learning Science and Mathematics are more effective if fully conducted in Malay language.	0.157
Q4	I have positive point of view towards the implementation of English language as the medium of instructions in teaching Science and Mathematics.	0.192
Q5	I prefer teaching and learning Science and Mathematics to be carried out in both languages (English and Malay).	0.186
Q6	I believed that teaching Science and Mathematics are more effective with English language as the medium of instructions	0.176

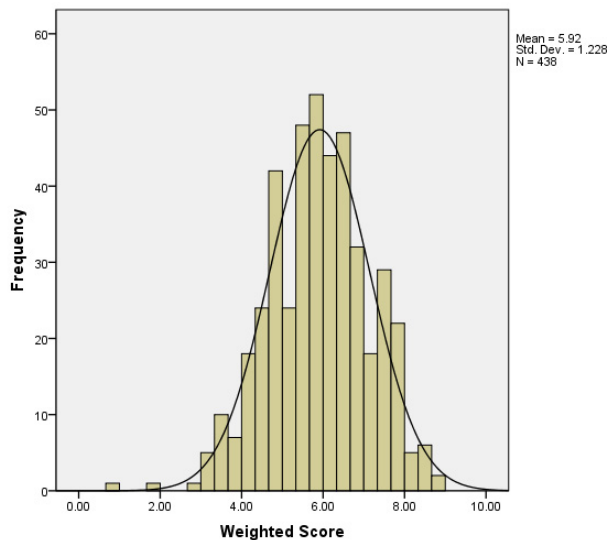


Figure 1. Histogram of an accumulated weighted score of all the items

The minimum score obtained from the analyses is 1 while the highest score is 9. From Table 2, it is found that the difference between the mean and median values is very small, 5.92 and 5.88, respectively. The overall median value indicates a moderate positive acceptance by the students from all four faculties. The median value of 6.03, representing upholding Malay language (MBM), is higher than the overall median value, showing that the students still regard the Malay language as an important medium of instructions. Pertaining to English as the universal language, the students are also in favour of strengthening their English proficiency. This is supported by the median value of students' positive perceptions towards strengthening English language (MBI) which is 6.25. This value is greater than the overall median.

Table 2. Overall Scoring of Students' Perceptions towards the Medium of Instructions

	Overall Value	MBM (Q1, Q3, Q5)	MBI (Q2, Q4, Q5, Q6)
Mean	5.92	5.83	6.15
Median	5.88	6.03	6.25
Mode	5.00	5.00	5.00
First Quartile (25%)	5.01	4.44	5.30
Third Quartile (75%)	6.70	7.21	7.12

3.2. Analysis of Odds Ratio

The results in Table 2 shows that students with unsatisfactory English competency, are most likely to disagree to the teaching of S&M in English with the odds of $109/90=1.211$. However, those who also have unsatisfactory English level but agree to the teaching of S&M in English have the odds of $78/158=0.4937$. The odds ratio is then calculated by $OR=(109.158)/(90.78)=2.453$, with 95% C.I (1.662, 3.621), showing that students who disagree with the teaching of S&M in English are more likely to be less competent in English compared to those who agree. In this case there is an association between teachings of S&M in English with English competency level.

Table 3. Classification of English Competency and Teaching of S&M in English

Teaching S&M in English would improve English language competency	English competency		Total	Odds ratio
	Unsatisfactory	Satisfactory		
Disagree	109	90	199	2.453
Agree	78	158	236	
Total	187	248	435	

Further analysis is carried out to ascertain whether this association is confounded by certain confounding factors such as ethnic, academic qualification, faculties, academic year and MUET grades. For example, the ethnic might confound the association between English competency and the teaching of S&M in English. One way to address confounding is to stratify the data into relatively homogenous subgroups ("strata") according to the confounding factors.

The study obtained an odd ratio of 2.54 when the number of students who prefer to use English and agree with the MBMMBI policy, is compared with students who are less inclined towards the usage of the English language. This odd ratio shows that the level of acceptance for MBMMBI policy to those who tend to use English is almost three times more than students who are less inclined towards the English language. However, students who have a satisfactory command of English, have similar opinions on the MBMMBI policy where the odd ratio is 1.05.

4. Conclusions

In summary, students are inclined towards the new policy, which is to uphold the Malay Language and strengthen the Command of English. The implementation of the transformation from PPSMI to MBMMBI is expected to produce Malaysian citizens who are fluent and confident in both Malay and English languages in communication, routine errand, knowledge exploration and career. It is anticipated that this transformation would be able to generate human capital that are critical, creative and innovative and able to capture fields of knowledge through various media. With these embedded values, mission to develop 1Malaysian who are progressive, dynamic and able to compete at the international level with strong self-esteem can be achieved. At the international level, it is an advantage to those who can communicate in the international communication language. Therefore, the action taken by the Government of Malaysia to strengthen the command of English language with regard the Malay language is expected to improve the knowledge development of Malaysians as well as to prepare them to compete globally.

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