
Naruemon Da-I 1, Assoc. Prof. Dr. Suhailah Hussien 2
1. Master in Education, Institute of Education, International Islamic University Malaysia, Malaysia (IIUM)
2. Institute of Education, International Islamic University Malaysia, Malaysia (IIUM)

ABSTRACT
ETeMS or English for Teaching Mathematics and Science was proposed in 2002, and immediately implemented in 2003 by the Ministry of Education, Malaysia. Many concerns have been raised regarding its effectiveness in improving English language and its impact on students’ learning and understanding of scientific and mathematical concepts. Policy to change the medium of instruction in the teaching of Mathematics and Science from Bahasa Melayu to English is an important innovation affecting teachers of Mathematics and Science generally. Findings of the study showed that most of the headmasters supported ETeMS, but they faced some problems and challenges in the implementation of ETeMS, particularly when most of the Mathematics and Science teachers and also the students were not proficient in English.

Keywords: English for teaching Mathematics and Science or ETeMS, Headmaster, Role, Management style, Instructional Leadership.

INTRODUCTION
A school leader plays an important role in ensuring the success of a policy or school reform. Any new policy or directives from the Ministry of Education can be made possible if the school leader work hard at realizing the targeted goals. Headmasters play many roles in school and the way they handle certain situations in school are dependent on their style of management. The overall method of leadership used by a manager or in this context the headmaster would be their management styles. Effective headmasters know when to use the right management style depending on their people’s skill, knowledge, and available resources. In other words, they would select a management style that works best for any
given situations without specific style geared to specific set of condition. According to Polite and Mary (1994), the purpose of any management style would be to motivate teachers to produce their best work performances.

A successful management style largely depended on the headmasters’ own personality, and their training to realize a range of ways of working with people, especially the teachers. It should be remembered that the particular style of management affected the school’s tone either adversely or positively. Headmasters are at the forefront for implementing policies that promote thorough teaching and learning. Consequently, headmasters should play a critical and determining role in achieving the central purpose of the school.

The management styles of headmasters in their respective schools vary accordingly based on certain criteria that intertwined with their own personality and leadership styles. Mittler (2002) opined that, style is not the critical variable to success but the quality of the headmasters and the implementation of their leadership styles appropriate for the school at that particular time in its life cycle that makes the difference. In addition, Mittler (2002) emphasized on accountability management where each individual’s expected job outcomes established the expectation and the actions that the individual will take, consistent with corporate morals and values, which are necessary to achieve accountabilities.

ETeMS or English for Teaching Mathematics and Science was introduced in 2003 by the Ministry of Education, Malaysia. Since then, many concerns and issues have been raised with regards to its relevance, practices, effectiveness and success (Kam Foong, 2003). Many researches in other countries have shown that teachers teaching Mathematics and Science in a second language faced many problems (Moschkovitch, 2002; Jongsma and Jongsma, 2005). Similarly, a number of researches conducted in Malaysia have indicated some problems and challenges in implementing ETeMS (Noraini et. al., 2006). One of the challenges is the inability of the Limited English proficiency (LEP) students to follow lessons in a different language. This had become one of the main reasons that the public called for a review of the ETeMS policy and the suggestion to revert the teaching of Mathematics and Science to Malay language. Rather than succumbing to these suggestions without proper consideration and research, it is timely that a study is conducted to examine and understand the implementation of ETeMS in primary schools. The school or rather the school authority is responsible in the success of the implementation of any policy and directives from the Ministry of Education.

There is a need to understand to what extent ETeMS is being implemented, how it is implemented, what problems and challenges are being faced in its implementation, and how
they are managed in schools. Thus, the study aims to explore and understand how the schools in general and the headmaster/mistress in particular, implement ETeMS and manage its problems and challenges. It is hoped that the study would be able to inform the Ministry of Education the extent of the implementation of ETeMS and whether the purpose of ETeMS in schools can be realized.

In this study, the researchers identified three main research questions:
1. How is ETeMS being implemented in primary schools?
2. What are the problems and challenges of ETeMS that the schools faced?
3. How are the ETeMS’ problems and challenges in schools managed and resolved?

METHODOLOGY

Research Design

This research is a case study which employed the survey method as the method of gathering data. This method used descriptive statistics in order to answer the questions addressed in this study. Since the researchers employ purposive sampling, the survey was assisted in selecting the participants based on whether they face any problems in implementing ETeMS and three specific criteria, which are, gender of school authority, type and location of schools. The study selected 6 participants to be involved in the in-depth survey questions. Thus, this research is relevant in gathering a large amount of data from the respondents in order to gain their experiences, ideas, beliefs, attitudes, and perceptions.

Population and Sample

This study was conducted at the Institute of Education where the participants for this study were selected based on the understanding that all the participants were available and agreed to respond to the questionnaires. They were the headmasters who underwent the B.Ed (Educational Management) Program at the Institute of Education, International Islamic University Malaysia. These headmasters were from different types of school namely, the National Primary School, the National-type Primary Chinese School and National-type Primary Tamil School as well as the government aided schools or the missionary schools. The respondents include both male and female headmasters comprising of Malay, Chinese and Indian. There were two cohorts of the headmasters; the first cohort consisted of 38 headmasters while the second cohort consisted of 41, thus the population of the study was 79 headmasters. However, the researchers only received 46 returned questionnaires from the both cohorts of headmasters.
Instrumentation
The instrument used for this study was a set of questionnaire containing forty items that were sub-divided into three major sections. Section A gathers information about the participant’s demographic data including their background. Section B deals with the headmasters’ perceptions toward the implementation of ETeMS based on eight main dimensions. Lastly, Section C regarding in-depth survey questions asked respondents to provide comments and suggestions with regard to their opinions of ETeMS and the revert policy.

Data Analysis
The raw data obtained was processed using the Statistical Package for the Social Science (SPSS) version 12.0 for windows. The questionnaire forms had been completed by the respondents then gathered and verified by the researchers. The researchers had employed the descriptive approach in analyzing the data involving the frequency count and percentage analysis. Frequency, percentages, and mean were used to analyze the items of Section B since it was descriptive in nature. Similarly, frequency and percentages were also employed to portray the profile of the demographic attributes of the respondents. Section C describes the recommendations and suggestions from the selected headmasters about the implementation of ETeMS in their respective schools.

RESULTS
The demographic characteristics, selected from the total number of respondents, 46% are male headmasters and 54% are female. Upon categorization of age group, slightly more than half of the headmasters (59%) were over 50 years old, while 39% were between 46-50 years old and very few (2 %) were between 41-45 years old. For the respondent’s race, slightly more than half of them (59%) were Malay, 26% of them were Chinese, and only 15% were Indian. With regards to the levels of education, a few of them (7%) had obtained a certificate, while 26% had obtained diploma, and more than half (67%) had obtained a degree. In relation to the teaching experience, a majority of them (96%) had more than 16 years while only very few (4%) had experience between 11 to 15 years. Furthermore, in terms of experience as headmasters, 44% of them had 6 to 10 years of experience, followed by 35% of them who had 11 to 15 years, 7% had between 1 to 5 years, and the rest (15%) had more than
16 years of experience. In relation to the location of school, slightly more than half (52%) were located in the urban areas, while the rest (44%) of the schools were in the rural areas. Furthermore, 44% of the schools had students’ population below 500 pupils. Meanwhile 33% of the schools had 501 to 1000 pupils, 7% of the schools had 1001 to 1500 pupils, and 17% had more than 1501 pupils. The categorization based on the types of schools was a majority (85%) were from the National Primary Schools (Sekolah Kebangsaan), while 16% of them were from the National-Type Schools.

Table 1: Role of Headmaster

<table>
<thead>
<tr>
<th>Item</th>
<th>Item Focus</th>
<th>SD &amp; D</th>
<th>N</th>
<th>SA &amp; A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I have discussion with teachers and students when they faced problems of ETeMS.</td>
<td>96</td>
<td>2</td>
<td>96</td>
</tr>
<tr>
<td>2.</td>
<td>I discuss with teachers about the ways on how to enhance students’ achievement in ETeMS.</td>
<td>96</td>
<td>(1)</td>
<td>(44)</td>
</tr>
<tr>
<td>3.</td>
<td>I work together with teachers to ensure the ETeMS’ objective is on the track with school mission</td>
<td>96</td>
<td>(1)</td>
<td>(44)</td>
</tr>
<tr>
<td>4.</td>
<td>I supervise and monitor the teachers teaching in ETeMS.</td>
<td>96</td>
<td>2</td>
<td>(44)</td>
</tr>
<tr>
<td>5.</td>
<td>I am the best model to the students and teachers in the implementation of ETeMS.</td>
<td>63</td>
<td>30</td>
<td>(29)</td>
</tr>
</tbody>
</table>

Table 1 shows that the majority (96%) of the headmasters strongly agreed that they discussed ways when they faced problems of ETeMS as in item 1, discussed with their teachers ways of enhancing students’ achievements in ETeMS as in item 2, worked closely together with their teachers to ensure the objective of ETeMS is on the right track as the school’s mission as in item 3, supervised and monitored their ETeMS teachers as in item 4. Only 2% of the respondents in all these items remain non-committal in their response. This clearly showed that these selected headmasters fulfilled their roles and responsibilities in managing ETeMS in their respective schools. With regard to item 5, 63% strongly agreed that they are the best model to the students and teachers in the implementation of ETeMS, with only 4% disagreed while 30% remained neutral. Here, the headmasters clearly played their role and take serious responsibility of their ‘school’.
Table 2: School Management

<table>
<thead>
<tr>
<th>Item</th>
<th>Item Focus</th>
<th>SD &amp; D</th>
<th>N</th>
<th>SA &amp; A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My school fully supports the implementation of ETeMS.</td>
<td>(n)</td>
<td>9</td>
<td>3</td>
<td>76</td>
</tr>
<tr>
<td>2. My school is prepared to deal with any issues and problems of ETeMS.</td>
<td>(n)</td>
<td>7</td>
<td>15</td>
<td>76</td>
</tr>
<tr>
<td>3. My school supports the continuation of ETeMS.</td>
<td>(n)</td>
<td>17</td>
<td>37</td>
<td>44</td>
</tr>
<tr>
<td>4. The planning of professional development for ETeMS in my school takes into account of the needs and interests of individual teachers</td>
<td>(n)</td>
<td>15</td>
<td>15</td>
<td>67</td>
</tr>
<tr>
<td>5. The objective and policies of ETeMS can be easily and clearly understood by teachers.</td>
<td>(n)</td>
<td>4</td>
<td>28</td>
<td>65</td>
</tr>
</tbody>
</table>

Table 2 shows that a majority (76%) of the respondents strongly agreed on item 1 where the school fully supports the implementation of ETeMS, while very few (9%) disagreed, and only 3% remained neutral. With regard to item 2, a majority (76%) of the respondents strongly agreed that the school were prepared to deal with any issues and problems of ETeMS, while 7% disagreed, and 15% was non-committal to this management problem by the school. Meanwhile, 67% of the respondents strongly agreed with item 4 that the planning of professional development in their school take into accounts the needs and interests of their teachers, while 15% of the respondents both disagreed as well as remained neutral on this fact. For item 5, 65% of the respondents strongly agreed that the objective and policies of ETeMS in the school can be easily and clearly understood by teacher, and only 4% strongly disagreed, while 28% remained non-committal. With regards to item 3, only 44% of the respondents agreed to the continuation of ETeMS, while 17% disagreed and 37% remained non-committal on this issue.

Table 3 exhibited that in item 1, more than half (70%) of the respondent viewed their teachers as not fluent in English, but 31% commented that their teachers were fluent in English, while 15% remained non-committal.

Table 3: Problems and Challenges faced by Teachers.
With regard to item 2, 61% of the respondents strongly agreed that their teachers had problems in explaining Mathematics and Science lessons in English, but 20% strongly opposed this view, while 17% remained non-committal. For item 3, 67% of the respondents strongly agreed that their teachers need to give many long explanation and translation for ETeMS. However, 15% of the respondents both strongly disagreed and remained neutral on this point. For item 4, 59% of the respondents strongly agreed that their teachers were not confident to teach Mathematics and Science in English whereas 24% of the respondents disagreed, while 15% remained silent on this point. For the last item, a majority (78%) of the respondents strongly agreed with item 5 pertaining to the fact that these teachers can teach better if they teach Mathematics and Science in their mother-tongue. However, 13% of the respondents remained neutral with a small number (7%) of respondents strongly disagreed with this view.

Table 4: problems and challenges faced by students

<table>
<thead>
<tr>
<th>Item</th>
<th>Item Focus</th>
<th>SD &amp; D</th>
<th>N</th>
<th>SA &amp; A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(n)</td>
<td>(n)</td>
<td>(n)</td>
</tr>
<tr>
<td>1.</td>
<td>Students find difficulty to solve Mathematical and Scientific problems in English.</td>
<td>15</td>
<td>9</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>(7)</td>
<td>(4)</td>
<td>(34)</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Students cannot follow the lesson of ETeMS.</td>
<td>33</td>
<td>24</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>(15)</td>
<td>(11)</td>
<td>(19)</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Students are not fluent in English.</td>
<td>13</td>
<td>13</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>(6)</td>
<td>(6)</td>
<td>(33)</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Students are quiet and passive when learning Mathematics and Science in English.</td>
<td>28</td>
<td>9</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>(13)</td>
<td>(4)</td>
<td>(28)</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Students are not interested to learn Mathematics and Science in English.</td>
<td>39</td>
<td>37</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>(18)</td>
<td>(17)</td>
<td>(10)</td>
<td></td>
</tr>
</tbody>
</table>

Table 4 indicated Item 1 obtained the highest percentage as the main problem where 74% of the respondents were in agreement with the fact that students found it difficult to solve problems of Mathematics and Science in English, while only 15% of the respondents agreed that students could solve the problems of Mathematics and Science in English. With regard to item 2, 41% of the respondents strongly agreed that students were unable to follow the lesson of ETeMS, but almost an equal percentage of the respondents (33%) disagreed. On item 3, 72% of the respondents strongly agreed that their students were not fluent in English, while 13% disagreed.
For item 4, 61% of the respondents strongly agreed that their students were passive when learning ETeMS, but 28% disagreed, and only 9% remained non-committal. In item 5, where students were not interested to learn Mathematics and Science in English, 39% disagreed, 37% of the respondents felt neutral about this statement, and only 22% strongly agreed. This indicates that there were more students who faced problems in learning ETeMS.

Table 5: The Log of Selected Perceptions from Headmasters

<table>
<thead>
<tr>
<th>Questions</th>
<th>Headmasters’ Comments and Suggestions</th>
</tr>
</thead>
</table>
| 1. According to your understanding, what do you think about ETeMS? | 1. (SK): It is a method of teaching two important subjects in English which are math and Science. The medium of teaching instruction in the classroom in English. In correspondent with this, the education department has provided teachers with related and useful teaching materials CCD, text books activity books and teaching instruments CLCD projector for the progress of ETeMS.  
2. (SK): The objective of teaching Mathematics and Science is for students to gain and acquired knowledge. Using English as the medium of instruction does not help students to achieve these objectives.  
3. (SJK, T): It is a relevant system which enables and prepares students to acquire knowledge for the future especially in the internet world.  
4. (SJK, T): It is good for pupils. In future it will be very helpful for pupils to continues their studies for higher education  
5. (SJK, C): The teaching and learning of Mathematics and Science totally in English.  
6. (SJK, C): It is a very good policy to improve the students’ proficiency in English. Many scientific terms cannot/ have not been translated into English accurately. |
| 2. How would you compare teaching Mathematics and Science in Malay and English? Any difficulties? | 1. (SK): English is the medium of interaction and teaching process thus pupils’ understanding of the subject is much related with their English vocabulary. The difficulties faced are poor understanding of the subjects taught due to poor command of English from the teachers and lack of vocabularies from the pupils’ side to receive the knowledge.  
2. (SK): Students feel to understand more especially the mode of instructions.  
3. (SJK, T): Definitely these would be some difficulties. Understanding through my slightly higher compared to English. Through my experience the difference is not very great. The weak students show poor performance no matter what language you use.  
4. (SJK, T): I find no difficulties students enjoyed learning in English. May be the teacher can help the students to give more explanations.  
5. (SJK, C): Pupils can understand better when teaching math and Science in the mother tongue.  
6. (SJK, C): I was trained to teach in English so for me, I face no difficulties. In fact, I enjoy teaching Mathematics in English. Teaching in Bahasa is not a
3. Are you satisfied with ETeMS?

If yes, or no, why?

1. (SK): No, teaching math and Science need extra afford from teachers and pupils. Teachers need to be trained thoroughly than only ETeMS can be implemented. The source of the knowledge comes from the teacher so they must be trained to be more well-verse in English.

2. (SK): No, teachers are reluctant to teach ETeMS subjects as their competency in English are quite low. Students have difficulties in understanding these subjects.

3. (SJK, T): Yes, I see many students today speak good English and also able to access internet without much problem. They are also brave to speak out and share their views and knowledge.

4. (SJK, T): Yes, easy to touch and students can improve their English. CD also provided to help our teaching.

5. (SJK, C): No, pupils take more time to understand the contents and its concept as well, for Science subjects, the term are mostly in scientific words which make them more confusing.

6. (SJK, C): I am very satisfied with ETeMS. There are available and that makes teaching preparation easy. Children like the interactive activities.

4. Does ETeMS help your school in solving the language problem? If no, why?

1. (SK): Yes, it helps our school in solving the language problem, especially English. However, their Malay language proficiency is become worse.

2. (SK): No, the language problem can only be solved during English language lesson.

3. (SJK, T): Yes, it is.

4. (SJK, T): Yes.

5. (SJK, C): No, although it might help in improving pupils vocabularies, they are still need in contrasting sentence as well as grammar.

6. (SJK, C): It does. I am trying to make the students converse more in English as most of them do not have the chance to speck English at home.

5. What are the problems and challenges in implementing ETeMS?

1. (SK): Capability of the teachers (Teachers’ fluency in teaching the subjects in English). Pupils interest will be decreased and they become less motivated since they cannot understand the subjects taught.

2. (SK): Schools are not supplied with adequate teachers whose options are Science and Mathematics. In here training by peer at mine are waiting time. Teachers feel depress as the state holders expect good results. Teachers moral are low.

3. (SJK, T): The level of English proficiency among the teachers is still low. Low motivated students from ‘poor’ families do not show improvement.

4. (SJK, T): Sometimes the teachers need more time to fix the lap-top with LCD to display the CD. The teacher must be in good preparation before teaching. Teacher’s find difficulties in pronunciation of the words.

5. (SJK, C): The teachers themselves are not confident to teach in English, They always face problems such as teaching by multimedia presentation, using Laptop, CD.
Table 5 shows the in-depth survey questionnaires that the selected headmasters answered. The researchers present the responses by the headmasters to support the findings of the questionnaire. Many of the headmasters commented that ETeMS is a good policy and should be continued, while some of them disagreed and expressed that pupils might lag behind because they are very weak in English. The headmasters who support the policy believed that it was a wise move because English is an international language. Students learning an extra language will enhance their future work opportunities in the age of globalization. One of them said that “I believe the effectiveness of ETeMS will be seen in the future of our generation”. She observed that students who have learned English from Primary One, tended to be more confident in listening and speaking English. On the other hand, some of the respondents identified various problems in ETeMS as students are not fluent in English language, the contents are too much to be covered in a limited time, and teachers are not proficient and confident in English. Apart from that, one of the headmasters reported that lack of home support in English might be also the issue in implementing ETeMS policy.

DISCUSSION
Based on the findings of the study, the researchers were able to conclude that the majority of the headmasters agreed with the rationale behind the policy that it was necessary to prepare future generations to be proficient in English and competent in Mathematics and Science to meet the changing global conditions. The majority of these selected headmasters fully support the implementation of ETeMS policy. However, some headmasters apparently did not agree fully with the ETeMS policy because they argued that mastering Mathematics and Science concepts and skills were much more important than mastering English. They asserted that in order to teach well, teachers had to be very competent in the medium of instruction. Besides, many of the school Mathematics and Science teachers were still lacking in English language competency. Accordingly, it was found that these teachers tended to teach the subjects using two languages or bilingual. As a result, students became more confused with not only Mathematics and Science, but also the two languages. Headmasters viewed that the students were quiet and passive because they found it difficult to solve Mathematics and Science problems, and that they cannot follow the lessons very well.

As for the findings, the researchers conclude that teachers might not enjoy teaching in English, and may not be confident in teaching Mathematics and Science in English. It was found that these teachers were also not comfortable using English. This might be because the teachers were used to teaching in Bahasa Melayu for many years, so the recent changes in policies may do little to prepare them to make changes in their style of teaching. Thus, a majority of them were not happy and satisfied to teach both subjects in English. From the selected headmasters’ point of view, it was obvious that the proficiency of English was the problem for the teacher to teach any subject in English.

Furthermore, the findings from the Ministry of Education (2009) found that only a small percentage of teachers fully used English to teach the two subjects. On average, the percentage of those using English during Mathematics and Science periods was around 53 to 58 per cent which indicated that only a small number of teachers were proficient. Therefore, the teaching and learning process cannot run smoothly due to the lack of language proficiency not only among the teachers, but also the students.

With regards to the students’ performance, Table 4 showed that the a majority (74%) of the headmasters viewed that many students found it difficult to solve problems of Mathematics and Science in English, while 72% mentioned that the students were not fluent in English. The Ministry of Education’s (2009) study, which was carried out by local universities found that students’ mastery level of English during the entire policy was around
3 per cent while the level among rural students was low. This study also clearly demonstrated that the role of headmasters was very important to implement the policy.

CONCLUSION
The researchers were able to glimpse a number of teachers who lack the ability and qualifications to teach both the subjects of Mathematics and Science in English. The current Mathematics and Science teachers need further training to improve their proficiency in not only the language but the subject matter as well. If not, this action will only reduce the students’ interest in Mathematics and Science as they cannot grasp the language and comprehend the subject. At the same time, students need to be fluent in the (English) language before learning any subject in that language. As the research findings revealed, many students are interested in learning Mathematics and Science in English but they lack the ability to learn Mathematics and Science in English. Furthermore, the research also indicated that many of the schools’ headmasters are fully supportive of the implementation of ETeMS but the Ministry of Education policy can at times tied them from being creative and innovative. The principles of ETeMS policy are remarkably significant and if given the time to keep pace with the mental and emotional readiness of both the teachers and students will, in due time, be a vehicle for the production of a globally competitive Malaysians.

RECOMMENDATIONS
Future researches should be conducted using both quantitative and the qualitative methods so that in-depth understanding can be derived on the issue of ETeMS.

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