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**AURORA**  
SASTRA, BUDAYA, DAN BAHASA

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AN EXPLORATORY STUDY

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# **SURVEY ON THE IMPLEMENTATION OF ENGLISH AS THE MEDIUM OF INSTRUCTION (EMI) BY SELECTED SENIOR HIGH-SCHOOL TEACHERS**

## ***SURVEI TERHADAP IMPLEMENTASI BAHASA INGGRIS SEBAGAI BAHASA PENGANTAR DI KELAS OLEH SEJUMLAH GURU SEKOLAH MENENGAH ATAS***

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### **ABSTRACT**

Some senior high schools in Bandung have been applying international curriculum. As lesson material and tests are presented in English, consequently the teachers in the schools are required to be able to use English as the medium of instructions (EMI) in their classes. However, the fact shows that the teachers cannot use English in their interactions with their students, let alone in delivering lessons. This research was conducted to find out the challenges faced by the teachers in implementing EMI. A set of questionnaire was distributed to selected teachers in a school with international curriculum. The result showed that although the teachers were eager to implement EMI, their confidence in using English, especially concerning the terms and jargons used in their content subjects, needed improvement.

**Key words:** English as a medium of instruction, international curriculum, senior high school

### **ABSTRAK**

*Beberapa sekolah menengah umum di Bandung telah menggunakan kurikulum internasional. Penggunaan materi ajar dan tes yang menggunakan Bahasa Inggris menuntut para guru untuk mampu menggunakan Bahasa Inggris sebagai bahasa pengantar di kelas. Faktanya, masih banyak guru yang belum dapat sepenuhnya menggunakan Bahasa Inggris, baik dalam interaksi dengan siswa maupun dalam penyampaian materi. Penelitian ini dilakukan untuk mengetahui hal-hal apa saja yang menjadi hambatan bagi guru dalam penggunaan Bahasa Inggris sebagai bahasa pengantar di kelas. Satu set kuesioner dibagikan kepada sejumlah guru di sebuah sekolah yang menggunakan kurikulum internasional. Hasil penelitian menunjukkan bahwa para guru cukup antusias untuk menggunakan Bahasa Inggris sebagai bahasa pengantar meskipun kepercayaan diri mereka dalam menggunakan Bahasa Inggris, khususnya mengenai terminologi yang berhubungan dengan materi ajar, perlu ditingkatkan.*

**Kata kunci:** bahasa Inggris sebagai bahasa pengantar di kelas, kurikulum internasional, sekolah menengah umum

## **I. Introduction**

It is commonly agreed that English plays a very crucial role in this global era. This is due to the fact that English is the most widely foreign language spoken in the world, has been acknowledged as the medium of communicating a large amount of the world's knowledge (Crystal, 1997) and is the most popular language in publication (Graddol, 1997). The growing use of English has developed a new trend in the academic field. It is now acknowledged that English is the key to knowledge. Without good command of English, people will be left behind in the rapid development of science and technology. Accordingly, mastering English will lead to being up-to-date with knowledge.

This new trend results in another new trend concerning with how English is treated in formal schools. While in the past English was only one of the subjects in school, with the focus on reading comprehension, nowadays many formal educational institutions employ English as a medium of instruction (EMI). One of the reasons for this trend is that English is considered a crucial means to explain scientific concepts clearly (Rollnick, 2000). The trend has also reached Indonesia, where some educational institutions are now applying international curriculum and trying to gain an international reputation by having international students. One of the aims of such schools is to make students achieve English communicative competence.

This information suggests that such schools in Indonesia need to prepare their students not only to achieve mastery of English but also to use English to show their abilities in other subjects. Therefore, despite a growing awareness that using mother tongue (MT) for education is more effective than using bilingual or second language medium of instruction (Heugh, quoted in Nel, 2007), English as a foreign language has started to be used as a medium of instruction in some schools in Indonesia not only for teaching English subject but also for teaching other subjects such as science and mathematics.

Sutton (1996) and Lemke (1997) state that language plays an important role in learning science since it is the means for expressing information and ideas. This statement implies that most of information and ideas are transferred verbally through listening and talking, also through reading and writing. Yet, non-verbal communication, which uses communicative actions, images and symbols, is also needed to convey information and ideas clearly (Lemke, 1998). Moreover, when talking about science, in particular, one needs to employ not only verbal and non verbal communication but also some visual aids, such as visual-graphical representations, mathematical equations, charts, tables, photographs, actions and so on, all of which should be delivered in natural language (Halliday & Martin, 1993).

Concerning the use of English as a medium of instruction in science and mathematics classes in Indonesia, comprehension problems may arise when students find difficulties about the language used in scientific texts. There are various specific terms in English used in science textbooks so that the textbooks are often considered to be too difficult for Indonesian students. There are also a lot of representations and symbols used to communicate scientific ideas, including graphs, charts, diagrams, mathematical symbols, and equations (Duran, et al.,

1998). Teachers of science and mathematics should understand that different visuals are important to help students' understanding of the scientific concepts. However, teachers' explanation is also crucial in helping students' comprehension, especially for second or foreign language learners. The nature of science texts has caused the contents not easily accessible to second language learners (Peacock, 1995). Sometimes, illustrations do not necessarily help, unless it is well mediated by teachers.

In a science class in which English is treated as a foreign language, the students have a double task of mastering both the science content and the language (Bunyi, 1999). Thus, the students need to develop their ability to communicate and to use the discourse of science in the classroom to help them learn. In the classroom, the science teachers' talk and interaction with their students will help the students channel and develop the ability to engage in and share scientific discourses. However, the condition can be difficult. When the teachers are unfamiliar with the language used in science teaching, it is likely that "learners may fail to understand the academic concepts through the language they are still learning because their subject content teachers are incapable of assisting them to do so" (Crandall, 1998, p. 18).

Studies similar to this present research (Hudson, 2009; Yahya, et al., 2009) have been done in Malaysia, as the country is trying to reform its education system so that the teaching of science and mathematics can use English as a Medium of Instruction. Hudson's focuses on Malaysian teachers' perception on the ways they prepare themselves to teach science using EMI. His study also includes discussions on the difficulties they find when learning English and on how the English course they have can be improved. In the same year, the other study was conducted on the perception of pre-university teachers in Malaysia who had joined English enhancement course concerning the use of English to teach mathematics and science. In Indonesia, a similar study (Ibrahim, 2001) has been done to find out whether EMI can be used in the university to deliver lectures and to find out its relevance with language proficiency improvement of both the students and the teachers.

Based on the presented background, this study aimed to discuss the teachers' self perception, attitude and motivation concerning their implementation of EMI and the challenges of implementing EMI for teaching science and mathematics in a senior high school in Indonesia. It specifically attempted to find possible problems and propose some potential solutions for implementing EMI in Indonesia, where English is only given a status as a foreign language. The study was done through a survey to the content teachers in the Cambridge International Programme (CIP) at one of the senior high schools in Bandung. The research questions are as follow:

1. What are the teachers' self perception, attitude and motivation concerning their implementation of EMI?
2. What are the challenges the teachers face when implementing EMI?
3. What can be concluded about the teachers' readiness for EMI implementation based on the findings that answer RQ 1 and RQ 2?

## **II. Methodology**

### **a. Participants**

In the research site, there were eight teachers teaching science and mathematics. The subjects of mathematics, physics, chemistry and biology had two teachers each. Six teachers participated in the current study; two were mathematics teachers, two taught physics, one was a teacher of chemistry and one taught biology. Four of them are male and two are female. The range of their teaching experience was 1.5-16 years. The range of the participants' English learning was 1.5-24 years, as some of them have already started to learn with English while they were in elementary schools. Only some of the participants had joined a TOEFL test and the score range was 493- 510.

### **b. Instrument**

To gain the data needed for the study, a set of questionnaire was employed. The questionnaire consisted of five parts that were preceded by some questions to find out about the profile of the participants. The first part of the questionnaire (part A) was about the participants' active use of English. Several questions in the questionnaire were taken from Estami and Fatahi's research (2008). The second part (part B) was about the participants' self-perception of their English language performance. The third part (part C) was about the participants' attitude and motivation towards English. The fourth part (part D) was about the challenges that the participants faced when teaching science/mathematics using EMI. The fifth part (part E) consisted of five open questions about the participants' experience in EMI implementation.

### **c. Data collection**

The data collection of this study began by sending a letter to the principal of the school asking for permission to conduct a study at the school. It was then followed by distributing questionnaires to the teachers of mathematics and science in CIP. There were nine questionnaire items given to the eight teachers of science and mathematics and to the program coordinator; however, there were only six questionnaire items returned on time and valid to be used as the source of data.

### **d. Data analysis**

To analyze the data gained, each item in each part of the questionnaire was coded. For part A and D, the coding was designed on five levels from "never" to "very often." The "never" was recorded as 0; "almost never" was recorded as 1, "sometimes" was recorded as 2; "fairly often" was recorded as 3, and "very often" was recorded as 4. For part C, the coding was designed on a 5-point Likert-scale ranging from "Strongly Disagree" to "Strongly Agree"; the strongly agree statement was recorded as 5; agree statement was recorded as 4; neither agree nor disagree statement was recorded as 3; disagree statement was recorded as 2; and strongly disagree statement was recorded as 1. The statistical analysis was conducted using Microsoft Excel.

### III. Result and Discussion

As described in part II point a, the teachers who participated in the study had at least one year of teaching experience, so they were familiar with the teaching and learning process in the school. They knew what were expected of them in preparing and delivering the lesson. Concerning their contact with the English language, the result of the questionnaire showed that they had been acquainted to English for quite a long time. Judging from their TOEFL score, in average the teachers possessed intermediate level of English language proficiency. Based on the TOEFL Overall Language Competency Descriptors, those with this level of English are likely to be understood by others when speaking and writing in English and able to grasp the main ideas when reading texts and listening to talks in English.

To find out about the teachers' active use of English, twelve statements related to how they used English were provided in the questionnaire. The teachers were to grade each statement as "never," "almost never," "sometimes," "fairly often" and "very often." The statements involved the use of English in the four language skills: listening, speaking, reading and writing.

Regarding the teachers' active use of English, the result of the questionnaire is shown in Figure 1. The scales 0 to 3 are the grades the teachers gave for their daily use of English.

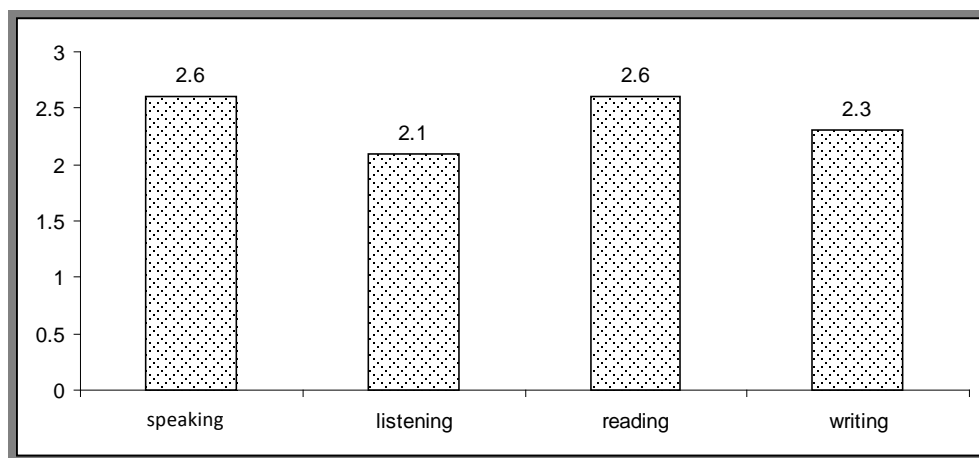


Figure1. The active use of English of the participants

As seen in the above figure, the participants reported that they used English mostly for conversation and reading. Three statements with the highest score in this part were: *I know the necessary strategies to help maintain a conversation with an English speaker*; *I understand when two native English speakers talk at a normal speed*; and *I understand English magazines, newspapers, and popular novels*. From the three highest-scored statements, it can be seen that the teachers thought they were active in conversation, as they said they knew the strategies to keep conversation going when they were speaking to

an English speaker. As they reported that they understood English magazines, newspapers and novels, they could be active in reading.

What is interesting, the findings in this part show that even though the teachers said that they could comprehend two native speakers talk at a normal speed, they did not like to watch English news or films without subtitles. That fact comes from the three lowest-scored statements, which were: *I watch English news (for example, CNN) and/or English films without subtitles, I understand the meaning of common idiomatic expressions used by English speakers, and I can easily write business and personal letters in English and can always find the right words to convey what I want to say.* From those statements, it can also be noticed that the teachers did not often use English for writing. They were also not familiar with the idiomatic expressions used by English speakers.

In relation to their daily duties as a teacher in an international program, conversation was used when they had to teach using EMI also during classroom interactions with the students. In the teaching and learning process, the teachers used textbooks when teaching and they found teaching materials also from reading books. We conclude that this is related to why they thought that they had actively used conversation and reading. Even though the result of the questionnaire for the four English language skills did not show significant difference, it is worth noticing that listening was thought to be the skill they applied least when using English. The result of the participants' self perception of their English language performance showed similar description.

Table1. The participants' self-perception of their English language performance

Skill	Mean
Speaking	6.8
Listening	6.7
Reading	7.2
Writing	6.5
Over all mean	6.8

To gain the above data, the teachers were asked to score (from 1 to 10) their language performance in the four language skills. The result showed that the teachers' best English language performance was thought to be in reading, followed by speaking, then listening and the last was writing. It was also shown in the finding that the teachers thought their performance in English language receptive skills was better than their productive skills.

Based on the findings earlier presented, the teachers showed a tendency to be quite comfortable with using English, especially for reading. They thought that they were quite active in speaking and felt that they were capable of speaking in



English quite fluently. It is interesting to notice that listening was thought to be the least used and the teachers' perception of their listening ability was also not as good as that of their speaking ability. We assume that this is because when the teachers thought of listening, they related it to the one-way listening--the one done in a language laboratory--not the listening that was done simultaneously with speaking when they were having conversations. Concerning writing, although the teachers used English in their daily life, some of them were not really confident with their writing ability. However, the overall mean showed that the teachers' perception of their English competence was good.

In part C, the teachers were asked to mark fifteen statements that were related to their thoughts, feelings and behavior related to using English. Based on the result of the questionnaire, the overall attitude and motivation of the teachers in using English were good, as shown in Figure 2. The scales 0 to 4 are the grades the teachers gave for each of the statements.

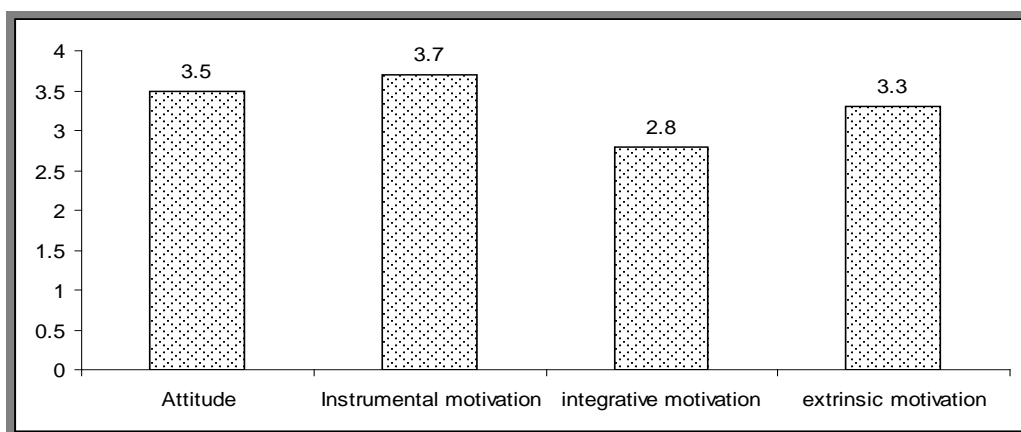


Figure 2. The participants' attitude and motivation related to using English

Concerning their attitude towards using English, the score 3.5 shows that the teachers' thoughts, feeling and behavior related to using English was good. The statement with the highest score in this part is *"I like speaking English."* Other statements with high score are *"I like to watch English movies and/or listening to songs in English,"* *"I like to read texts in English,"* *"The ability to speak English well shows that you are an educated person,"* *"Having English competence can raise my status among other teachers,"* and *"I prefer teaching science/mathematics using English than Indonesian."*

From the result, it is apparent that the teachers liked to use English both receptively and productively. What is more, they thought that English had a special place, in the sense that the ability to use English could determine the level of education of a person and having mastery of English could somehow put them in a higher status than other teachers'. The teachers' motivation to learn and use English was also good. The highest motivation was the instrumental motivation, in which the teachers were motivated to learn and use English because they needed English for practical things such as to deliver the lessons. This led to the high score for extrinsic motivation because what drove the teachers to learn and use English was the need to implement EMI as they were teaching in an

international program. This extrinsic motivation was also shown from the not-so-high score for integrative motivation, in which the need to be identical with English native speakers was not really considered important.

In part D, the teachers were asked to indicate the challenges the teachers found when implementing EMI. There were nine statements the teachers needed to grade, which were about the problems they faced when teaching science or mathematics using English. The result of the questionnaire was shown in Figure 3. The scales 0 to 2.5 are the result of calculations concerning the grades the teachers gave for the statements about the challenges they found when implementing EMI.

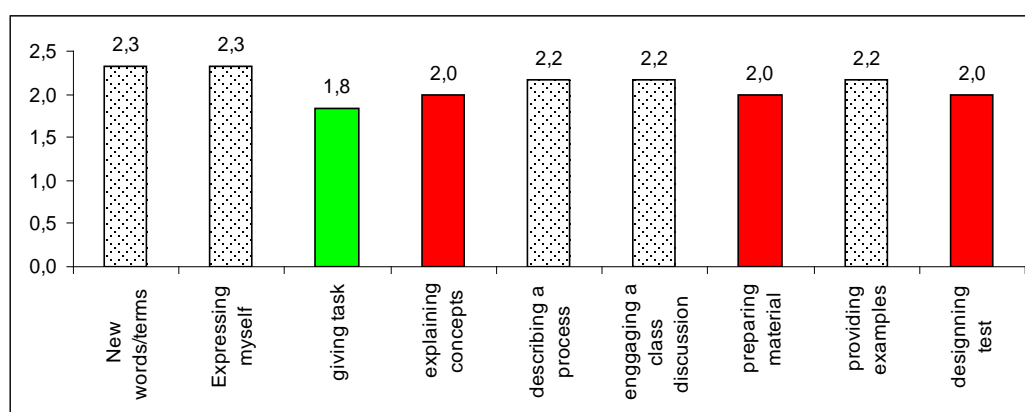


Figure 3. The challenges faced when teaching science/mathematics using EMI

The figure shows that the biggest challenge in EMI implementation was when the teachers had to be creative with the language in the lessons they delivered while they still needed to mind the use of specific vocabulary of science and/or mathematics. Activities such as giving tasks (which included giving clear instructions), explaining concepts, preparing the material and designing tests were considered to be the three biggest challenges in implementing EMI in class. However, it was also noticed that the teachers did not really show a tendency to find spontaneous use of English a challenge. When they had to express themselves in class, engage in class discussion and provide examples, they did not consider those activities as difficult as giving tasks. Thus, the result indicated that when the teachers could use English without being concerned with the technical jargons of mathematics or science, they became more relaxed and able to implement EMI.

The last part of the questionnaire asked five open questions to find out about the teachers' experience when implementing EMI. Three questions focused on the problems the teachers faced, whereas the last two questions focused on how the teachers tried to solve the problems.

In the first question, the teachers were asked about their experience in implementing EMI to teach science/mathematics during their first month of teaching. All teachers said that at that moment, the problem they faced was familiarity with the terms about science and mathematics. Some others added that they also had problems in finding good books about the lesson they taught to help

them prepare the material to deliver to the students. They said that they had limited access to material in English. One teacher even said that most of the good books were in Indonesian. This might somehow be a quite controversial statement; yet, it is quite understandable as the students in the program were still going to have national examinations at the end of their studies. Thus, the books that could help them prepare for their national examinations were of course books which were based on national curriculum, and such books were written in Indonesian. From those answers, it can be deduced that the teachers were eager to implement EMI starting from the first time they began teaching in the program. However, their unfamiliarity with the terms made the implementation of EMI not easy. They also wanted to have ready-to-use books to help them teach. It is assumed that the limited time they had in preparing their lessons was the reason why they needed such ready-to-use books. This need is understandable as teaching a content subject using English may need longer time to prepare than that using MT. The teachers had to prepare not only the material concerning the subject matter but also the language they should use to deliver the subject matter.

Another finding concerning the problem the teachers found during their first month of teaching was interesting. Some of the teachers said that they did not have enough confidence to teach science/mathematics using English as they thought that their students had better mastery of the English language than they did. In fact, students taking this program had passed an English test to meet one of the compulsory qualifications to enter the program. The standard of English competence in this program was different from those of other programs, as the international program required the students to have good conduct of English. This might be the cause why the teachers were not confident enough with their English.

The second question asked about the teachers' current problem in implementing EMI. Some still said that finding suitable material to be used in class was a problem. Some of the teachers also found it hard to explain the material thoroughly in English. There was also an argument among the teachers that because the students in the program would take *Ujian Nasional* (National Examination) at the end of the program, the concepts in science and mathematics had to be taught in both languages: English and Indonesian. However, some other teachers thought that as this program was an international program, it should be made different from the bilingual program. Thus, the use of English had to be prioritized, and to make the students become proficient in English, the use of English in class could not be interrupted with the use of (a) non-English language(s). The result of the questionnaire also showed that at this moment, the main concern of the teachers was on their English proficiency. Those who said that they had low self-confidence in their first month of teaching said that they still had that feeling at the moment of answering the questionnaire. They still did not find it easy to express themselves fluently in English, and they found it hard to conduct and be engaged in class discussions.

The third question focused more on the problem with the students when they were taught science/mathematics in English. All of the teachers said that the problem the students faced was in understanding the concepts in science and/or mathematics in English. It was due to the students' unfamiliarity with the English terms, specifically with the jargons used in the two subject matters. This problem

made the students answer the teachers' questions in Indonesian when they were having class discussions. Some of the teachers also said that some of the students had low listening competence. This factor also contributed to the students' difficulty in understanding concepts in both science and mathematics.

The next question was about the teachers' efforts to overcome the problem they found in implementing EMI. All of them said that when they found it difficult to implement EMI, they sacrificed the need to use English in the class and code-switched their instructions to Indonesian. This often happened, especially when the teachers had to explain about concepts as they wanted to make sure that the students really understood their explanation.

The last question in this part asked about how the teachers helped students' understanding the discussion. Some teachers said that when they found the students unable to understand their explanation, they repeated what they had told the students. In most cases, the repetition was done by using Indonesian. Some teachers also tried to use teaching aids to help the students understand more about the subject. The most often used teaching aid was pictures.

The result of the open questions is summarized in Table 2.

Table 2. Teachers' experience in EMI implementation

Problems in using EMI for the 1st month	Non-familiar terms; inadequate material; low self-confidence
Current problems	Hard to find suitable material; hard to explain material thoroughly in English; low confidence (in terms of fluency)
Problems students faced	Hard to understand concepts and non-familiar terms; low listening skills
Efforts to overcome the problems	More explanation using Indonesian
Efforts to help students' understanding	More explanation; using pictures

The above result also shows that creative use of English in specific context was somehow still problematic for the teachers. When they had to explain the subject matter to the students, they had not yet been able to use English to give thorough explanation to the students. The teachers tried to find help from reference books; however, they still found the available material not adequate. In an effort to solve the problem, all the teachers sacrificed the use of English and code-switched to Indonesian. This of course could help students understand the subject matter more, as the teachers were using the students' mother tongue. Some teachers tried to use teaching aids, but the only teaching aid used so far was pictures.

Based on the results of the questionnaire, it can be deduced that the teachers had good perception, attitude and motivation toward EMI implementation. This positive stance toward English use made them ready to implement EMI during their teaching sessions although their experience so far revealed that it was sometimes difficult for them to elaborate concepts to the students. Familiarity with the terms used in science and mathematics also became a problem for the teachers when they had to implement EMI for the first time, but this was no longer a big problem when they had dealt with the material for some time. As the shortest period of teaching in the program for the teacher was one and a half year, it can be presumed that the period of one year was enough for teachers of science or mathematics to familiarize themselves with the terms in the two subjects.

#### **IV. Conclusion and Suggestion**

To sum up, the research showed that the teachers of science and mathematics in CIP were quite ready for EMI implementation. However, it is suggested that they should be more prepared, especially in order to improve their self-confidence in using English. They should be equipped with Academic Language Proficiency so that giving tasks, elaborating concepts, preparing material and designing tests would no longer become barriers in implementing EMI. The science and mathematics teachers should also work together with the English teachers to integrate the content with the language skills needed. One of the ways should be to use transactional reading strategies (Borasi, et al. 1998), in which the science and/or mathematic content should be used in reading classes to help the students understand concepts better through language instructions.

In future, if the teachers are to implement EMI in all their teaching sessions and their classroom interactions with the students, they need to also be equipped with adequate material and various teaching aids. Providing English science and mathematics books as references for the teachers is a must for the school. The teachers should also be introduced to a variety of teaching aids, so that they can use those things other than pictures in their teaching sessions in order to help students' understanding on the concepts. If the school provides ready-to-use books as references and various teaching aids, hopefully the problem with students' understanding can be overcome. This solution will of course increase the teachers' self-confidence to implement EMI.

It is just true that this research was very limited, as it only focused on the teachers' point of view. Thus, further research is needed to find out about students' needs, ability, beliefs, and strategies concerning EMI implementation. Besides, a further study which includes interviews and observations is essential to get a comprehensive description of the strengths, weaknesses, threats and opportunities of EMI implementation and to find out the best techniques to implement EMI in the science and mathematics classes.



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## APPENDIX: QUESTIONNAIRE

Dear teacher,

We are Henni and Fenty L. S. We are teachers of D3 English Program who are now conducting research on the *Challenges of EMI Implementation for teaching*

*Science and Mathematics.* We would like to invite you to participate in our research. If you agree to take part in this project, you will be asked to complete a questionnaire which should take you about 30 minutes. Thank you for your help in advance. Please do not hesitate to contact us if you have any questions

Yours sincerely

Henni and Fenty L. Siregar

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### Research Participation Consent Form

I have read the explanation sheet for this study and have had the details explained to me. I understand that I may ask further questions at any time. I also understand that I may decline to answer any questions. I agree to provide information to the researcher by completing the questionnaire. I also understand that any information I give will be confidential.

Signature:

Name:

Date:

Email:

Phone number:

### Questionnaire

Name : \_\_\_\_\_ (optional) Age: \_\_\_\_\_ Gender: F / M

I am a teacher of: \_\_\_\_\_

How long have you been teaching?

How long have you been teaching in CIP?

How long have you been learning English?

Do you learn English from formal school or informal course?

Formal school: starting from \_\_\_\_\_ until \_\_\_\_\_

Informal course: (please mention the course and the length of study)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Have you ever taken TOEFL/IELTS/TOEIC test?

For TOEFL only: If yes, what kind of TOEFL was it? (Internet-based /  
Paper-based / Preparation test)

When was your last TOEFL/IELTS/TOEIC test?

What was your last TOEFL/IELTS/TOEIC score?

A. Please indicate your active usage of English by crossing (X) in one of the  
column:

No	Statement	Never	Almost never	Some times	Fairly often	Very often
1	In face-to-face interaction with an English speaker, I participate in a conversation at a normal speed.					
2	I know the necessary strategies to help maintain a conversation with an English speaker.					
3	I feel comfortable using English as the language of instruction in my class.					
4	I watch English news (for example, CNN) and/or English films without subtitles.					
5	I understand the meaning of common idiomatic expressions used by English speakers.					
6	I understand when two native English speakers talk at a normal speed.					
7	I understand English magazines, newspapers, and popular novels.					
8	I can draw inferences/conclusions from what I read in English.					
9	I can figure out the meaning of unknown words in English from context.					
10	I can easily write business and personal letters in English and can always find the right words to convey what I want to say.					
11	I can fill in different kinds of application forms in English such as a bank account application.					
12	I can write a short essay in English on a topic of my knowledge.					

B. Please indicate your English competence self-perception by putting a circle on the scale: (10=very good, 1=awful)

**In terms of English language skills, I consider my:**

- |                      |    |   |   |   |   |   |   |   |   |   |
|----------------------|----|---|---|---|---|---|---|---|---|---|
| 1. Speaking ability  | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 2. Listening ability | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 3. Reading ability   | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 4. Writing ability   | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

C. Please indicate your attitude and motivation when using EMI for teaching by crossing (X) in one of the column

No	Statement	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
1	I like speaking English.					
2	I like hearing English spoken.					
3	I like to watch English movies and/or listening to songs in English					
4	I like to read texts in English					
5	English should be taught to all Indonesian students					
6	The ability to speak English well shows that you are an educated person					
7	Having English competence can raise my status among other teachers					
8	I am forced to learn English by the people around me					
9	English is a difficult language to learn					
10	The textbooks used for teaching					

	science/mathematics should be written in English					
11	Learning English can enrich my cultural knowledge					
12	It is a good thing that English is used as a medium of instruction for teaching science/mathematics					
13	I prefer teaching science/mathematics using English than Indonesian					
14	I feel comfortable when a native speaker observes my class when I am teaching science/mathematics in English					
15	I would love to have academic discussions with other science/mathematics English-speaking teachers					

D. Please indicate the challenge that you face when using EMI for teaching:

No	Statement	Never	Almost never	Some times	Fairly often	Very often
1	When I teach science/mathematics, I have a problem in using new terms or words correctly in English.					
2	When I teach science/mathematics, I have a problem in expressing myself in English					
3	When I teach science/mathematics, I have a problem in giving task in English					
4	When I teach science/mathematics, I have a problem in explaining concepts in English					



5	When I teach science/mathematics, I have a problem in describing a process in English.					
6	When I teach science/mathematics, I have a problem in engaging a class discussion in English					
7	When I teach science/mathematics, I have a problem in preparing material in English					
8	When I teach science/mathematics, I have a problem in providing examples in English					
9	When I teach science/mathematics, I have a problem in designing tests in English					

E. Please answer the questions below (*Your answer can be in Indonesian/English*)

1. What were your problems when teaching science/mathematics in English for the first/in the 1<sup>st</sup> month of your teaching?

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2. What are your current problems in teaching science/mathematics using English?

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3. What are the problems that your students face when you teach them science/mathematics using English?

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4. If you have a problem in teaching science/mathematics using English, what are your efforts to overcome the problem?

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5. If you see that your students have a problem in understanding your explanation, examples/ instruction in English, what do you do to make them understand it/them?

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