

TEACHERS' BELIEFS AND CLASSROOM PRACTICES IN TEACHING CONTENT SUBJECTS THROUGH EMI

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Abstract: The urge of 4.0 industrial revolutions has made the growth of English as a medium of instruction (EMI) in the educational field unbearable. The beliefs of EMI more or less would give a contribution to the teaching and learning process. This study aimed to investigate teachers' beliefs towards EMI, to find out how the beliefs reflect in their classroom practices, and the challenges that teachers encounter in teaching content subjects through EMI. The qualitative in case study design was applied and questionnaires, observation, and interviews were used to collect the data. The observations and interviews data were analyzed through thematic analysis and the questionnaire data were analyzed by using descriptive statistical analysis. The findings of this study showed that most content subject teachers at SIS Palembang had a strong belief towards EMI. In the classroom practices, it was found that all teachers put into practiced what they believed in teaching content subjects through EMI such as they used English during the class, applied some strategies to illustrate new vocabulary, used prescribed teacher guide books, provided clear and explicit instructions, engaged the students, delivered the content greatly, and rarely did the code switching, The challenges they encountered in teaching content subjects through EMI included language barriers, class discussion engagement, and lesson preparation.

Keywords: EMI; teachers' beliefs; challenges of EMI.

INTRODUCTION

The education sector has been influenced significantly by the globalization of English as a medium of instruction. English as a medium of instruction (EMI) is the use of the English language to teach academic subjects in countries where the first language (L1) of the majority of the population is not English (Dearden, 2016).

In this era, there are a growing number of educational institutions in non-Anglophone countries that have implemented EMI (Macaro et al., 2018) and this global trend has shown no sign of

dwindling and has gained momentum in recent years that is likely to continue into the inevitable future (Dearden, 2016).

This phenomenon grow rapidly because of the belief that a foreign language will be more effectively acquired if it is integrated with content rather than learned in isolation as a school subject. In other words, English should rather be used in 'real' contexts than just learned formally. In line with this, Smith et al. (2017) found that learning new language in a meaningful academic content can enhance students' language level while absorbing

content materials. Therefore, recent language teaching methods have been directed toward involving both content and language teaching simultaneously.

In accordance with the phenomenon, in Indonesia, the government has implemented several programs related to EMI, one of them was the establishment of International Standard Schools (Sekolah Berstandar Internasional or SBI). According to the law of National Education System Article 50 Paragraph (3) of Law No. 20 the Year 2003, the Indonesian government emphasizes that every district/province government must hold an International Leveled School or at least one International Leveled School for every unit of the education institution.

In SBI schools, English as a medium of instruction is used in teaching content subjects such as Math and Science. Through this implementation, students are expected to have more opportunities to practice the English language.

According to government policy which is stated in the Law of National Education System No. 20 the Year 2003 Article 33 Verse 3 about the use of foreign language in the teaching and learning process, it is said that a foreign language can be used as the medium instruction in a certain education unit to support the students' language competence (National Education System, 2003).

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However, there were limited schools in Indonesia that has implemented EMI. According to Kemendikbud (2019), From 149,435 primary schools in Indonesia, there were only 196 schools that have implemented EMI since they were SPK schools. This was because they were not aware of how important EMI is and the benefits of EMI. Besides, teachers and schools didn't realize one of the factors that influence a teacher's quality is their belief. According to Pajares (1992), a teacher's belief has a greater influence than the teachers' knowledge on how they plan their lessons, on the decisions they make, and on their general teaching practice.

Also, Wu et al. (2015) argue that teaching beliefs are crucial in influencing classroom behaviors that affect teachers' efforts, persistence, and resilience when faced with difficulties with students.

Furthermore, there were limited researches about teacher's beliefs towards the benefits of EMI in the primary level especially in Indonesia. This factor caused lack of the awareness of the importance of EMI from teachers and schools. As Mahboob (2020) mentioned that there were some understudied issues about English language used as a medium of instruction in early grades.

There were some previous studies related to this study that has investigated about teachers' beliefs and classroom practices. First, Yuan et al. (2020) who found that teachers formed different types of beliefs about the roles of English and EMI, about EMI teaching and learning, and about university curriculums and policies on EMI. Second, Briggs et al. (2018) conducted a research about comparing teacher belief towards EMI in secondary and tertiary education found that teachers in both phases believed that the greater exposure brought about by EMI was beneficial to students in terms of their English language learning. Third, Khatri (2019) found that all teachers believed that EMI helps not only student but also teachers to enhance competence in English language usage. Besides, teachers shared that EMI plays vital role in their professional development.

However, since the first and second research data were teacher self-report which focused on university level students and the third previous study focused on secondary level students that is different with this study which focused on primary level and real classroom observation and interview. This present study hopefully might give the reality demonstration and depth information about teacher's beliefs towards EMI and classroom practices in primary level.

Therefore, this study were aimed to find out content teachers' beliefs towards English as a medium of instruction, how content teachers' beliefs reflect in their classroom practices, and the challenges that content teachers encounter in teaching content through English as a medium of instruction.

METHOD

This study applies qualitative in a case study design. A qualitative study was characterized as an research process of understanding a social or human issue, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducting a setting characteristic (John & Creswell, 2018). The data were collected using questionnaires, interviews, and observations. This study took place at one famous private school in Palembang. The participants were 3 Mathematics and 2 Science teachers who taught at the primary school level.

The data collected using the questionnaires adapted from Tan (2009) were analyzed by using descriptive statistical analysis and reported qualitatively. The data obtained from interview and classroom observation were analyzed using thematic analysis suggested by Braun and Clarke (2006) by familiarizing with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, producing the report in order to find out the depth information about teachers' beliefs in teaching contents through English as a medium of instruction, to see how teachers' beliefs were put into classroom practices and challenges that they encountered.

FINDINGS AND DISCUSSIONS

Teachers' beliefs towards EMI

Table 1. *Result of teachers' questionnaire*

Scores Interval	Category	Number of Teachers	Percentage
1-16	Strongly Not Believe	0	0%
17-32	Not Believe	0	0%
33-48	Believe	1	20%
49-64	Strongly Believe	4	80%

Based on Table 1, the finding from the questionnaire showed that most teachers at the school strongly believed and believed in the benefits of English as a medium of instruction in teaching content subjects (math and science). The finding also showed that none of the teachers did not believe or strongly did not believe in the benefits of English as a Medium of Instruction in teaching content subjects.

This finding in a line with the findings obtained in the interview where the teachers, generally, had a strong belief towards the benefits of English as a medium of instruction in teaching content subjects.

Besides, most teachers believed that EMI is very important. They said that it is important because English is an international language and every activity that the students do will require them to understand English language. In this case, using English in teaching a content subjects gave the students a chance to learn and understand more about English.

If the school is like this school, I think it's good because the students will get both knowledge, from science they get and from the English skill they also will get. (T2)

Moreover, due to the globalization era and 4.0 industrial revolutions education, using English in teaching content subjects will prepare students to compete with others around the world and to continue their study abroad.

It's good for the students who will face the 4.0 industrial revolutions and globalization. As we know that globalization moves very fast right now, so we prepared for them. For example if they want to be a scientist in the future, they already can compete with scientists around the world. (T1)

In this school, the purpose is clear, we teach mathematics by using English because our purpose is to use an international curriculum and the students will take the Cambridge checkpoint test and it's all in English. So, if our students want to study abroad they have already gotten used to the instruction. (T3)

These findings were in accordance with Çağatay (2018) findings that the aim of EMI is to prepare an international career for the students. Similarly, Ernawati, et al. (2021) discovered that the use of EMI at this primary school can improve students' English skills and prepare students for the international competitions such as debate, international science Olympiad, and students could learn IGCSE Cambridge materials which were more practical than 2013 curriculum materials.

In line with teachers' previous statements, teachers also believed that teaching and learning content subject using EMI improved teachers and students' English skills, increased their vocabulary mastery, and helped them understand the content better.

Personally, I can apply my English skill into communication. I can make my English become fluent at least. For students, as we know there are

a lot of terms in science that have different meanings, if they learned science through EMI they already know that for example. The symbol of Force is *f* because it starts with the letter *f*. If the students are not from international school they will be confused because in Bahasa, letters of force start with *G* and not *f*. (T1)

For me the benefits are improving my speaking, reading, and writing skills. For students I think since they learn mathematics through EMI they can comprehend the lesson better because the instruction is simpler Besides, if from the language side, because students learned by using word problems in mathematics class they can improve their reading skills and enrich their vocabularies. (T4)

This was similar with the findings from Vidal and Jarvis (2020) that EMI give a lot of benefits to students such as helped students to improved their English language proficiency. In the same vein, Noviani, et al (2018) found that a high degree of satisfaction in teachers' mindsets and understanding of bilingual education because the English proficiency of teachers had increased and it reflected the success of the program in improving teachers' English proficiency. Furthermore, Yang et al. (2019) revealed that both the teachers and the students English language skills for both general and academic purposes improved. They also believed that EMI program had helped to cultivate the students' independent thinking skills and self-learning skills.

In addition to the benefits, teachers also believed that the students were able to cope with English as a medium of instruction since so far students at this school were able to follow the lesson and understand the content well and it was because the students were used to the English as a medium of instruction since they were in the early age.

I think if the students from SIS, we don't have such a thing because they are able to learn and understand the lesson in English well. It is because students learn all subjects in English since they are pre-school and P1 (T1).

I think my students can understand the lesson in English. The reason is because before entering the school all students here must have at least the basic of English and most student even have English as their second language or event first language because SIS is an international school (T5)

This result highlights the findings from Wallin (2017) that early exposure to the second language is important because young learner learn a second or third language through listening to and interacting with different speakers which will bring exposure to sounds, words, and grammars of the languages that they will use in the future. Therefore, it's easier for the students to learn content subjects when they have mastered the language. Teachers also mentioned that their school supported them in teaching contents through EMI by providing them with resources, guidelines, and training about how to teach content subjects (Mathematics and Science) by using books that use English language and how to do the activity/ assess students' work from the book.

We have my pals' teacher's guide from Singapore and from the teachers' guide book there are steps on how to teach the materials to the students, hands-on activity, and steps on how to answer questions with different methods. The book explains clearly on how to teach students so it's really helpful. (T3)

We have a teacher's guide and the school guidelines are enough for us. Even for the new teachers, they can read that. Moreover, the guidelines in the teacher's guide book help us in asking questions to the students related to the topic so that the students can understand the lesson. (T5)

Actually, I have joined training but it's not teaching science in English specifically but it's training to teach Science by using Cambridge book from Mentari. But yeah the book is in English. It's about how to develop the topic, experiment, and how to teach in an inquiry method. (T1)

This belief was built because of the school's readiness to support teachers in teaching and learning activities. In contrast with the government, teachers didn't believe that the Indonesian Ministry of Education has prepared them sufficiently well to teach mathematics and science in English. This finding is in accordance with the previous research that explained there are 60 percent of countries among 55 countries in the world that have no guidelines in implementing EMI and only 27.3 percent have guidelines (Dearden, 2016). In this case, Indonesia is one of those who don't have guidelines in implementing EMI.

Furthermore, teachers shared that they believed that their content mastery and linguistic competence were sufficient to teach the EMI class.

No, I don't have any problem using English. It is because I was a teacher in GLORIA and I have been teaching English before. (T2)

No. I think if you don't have any experience in teaching EMI and never learned English before it will be a big problem. But for me, I have been teaching in an international school before I entered SIS and they teach me a lot. Besides, in Sampoerna University all lecturers teach us by using EMI so I can teach Mathematics by using English. (T4)

No, like what I have said before, in my University all students were trained to teach Mathematics by using English. Even before we graduate, we have PPL in international school before. So, we are used to it. (T5)

These beliefs were shaped because teachers have been exposed to EMI before they were teaching in SIS. Some teachers were taught to teach content by using EMI in their university and the others have an experience in teaching EMI class in previous school.

In brief, this research results about teacher's beliefs supported the theory from Richardson (1996), who said that three main sources of teacher beliefs are personal experience, experience with instruction, and experience with formal knowledge.

Teachers classroom practices

From the observation, it was found that teachers put into practiced what they believed in teaching content subjects through EMI in the classroom. This is in line with what Skott (2014, p. 19) said that beliefs are expected to significantly influence the ways in which teachers interpret and engage with the problems of practice. It was observed that teachers manifested their beliefs in many aspects. First, it was found that their belief about the benefits of English in teaching contents through EMI was reflected in their effort to always use English during the classroom practice.

Second, it was found that their beliefs about the support/resource provided to aid EMI implementation was reflected in their act to always use some strategies to illustrate new vocabulary, used prescribed textbooks/teacher guide books in English provided by school, and added other

supplementary materials through various modalities (auditory and visual) in English such as using realia, bar graphs, picture, and video. However, teachers added that since the ministry of education didn't provide them with the guidelines, they can only use the guidelines given by the school.

Third, it was observed that teachers' beliefs about the sufficiency of their own linguistic competence was reflected in their way to provide clear and explicit instructions in English engage the students in various teaching and learning activities such as; class discussion, making a group project/experiment, and playing games, and summarize the ideas related to the content of mathematics and science in English well. This finding is in accordance with the results of the study conducted by Kubanyiova (2014) that teachers' practices are closely related to how they believe teaching should be carried out and to the teaching methods they have internalized throughout their careers. Fourth, it was discovered that teachers' beliefs of their content mastery was reflected in their act to always deliver the content greatly. It can be seen from the classroom interaction between teachers and students where teachers were able to answer unpredictable questions from students and students are able to understand teachers' explanations related to the lessons. This finding portrayed Warshauer's (2015) findings that an extensive and complex interplay of teacher knowledge of mathematics content and pedagogical content knowledge was important to teachers to maintain high cognitive demand of tasks, and sustain student struggle while supporting individual and whole class engagement.

Fifth, it was found that teachers' beliefs in the impressions of students' content mastery and linguistic competence was reflected in their effort to rarely did the code switching and gave the opportunities for the student to express and shared their ideas in English about the topics given individually in oral or written form.

Challenges in teaching content through EMI

Despite the benefits and the strong beliefs towards EMI in teaching content subjects, the challenges are things that were undeniable in the implementation process. Fitriati (2015) found that teachers struggled to teach English after implementing a bilingual education program. Besides, Fauziah, et al. (2021)

discover that Cambridge science teachers felt the challenges while participating in the program.

From the result of the interview, it was found that there were three challenges that teachers encountered in teaching contents through EMI; language barriers, class discussion engagement, and lesson preparation.

First, language barriers. Teachers mentioned that since English was not their first language even they believed that their proficiency was sufficient, there were still a lot of terms in science and mathematics that they didn't understand so they have to read carefully the spelling and the vocabularies before they were teaching.

Of course there must be challenges because it's not my first language so like what I have said before. I have to check the vocabulary first before I teach and so do the spelling (T1).

Moreover, language barriers also caused them sometimes to misinterpret the meaning of the questions from the book.

The challenges first, the terms in science that have been used. Sometimes I don't understand the terms. Second, understanding the questions. Like what I have said before, sometimes when we translate the questions it's not what the questions really mean. I mean, interpreting the questions (T3)

In line with this, Fauziah, et al. (2021) discovered that It was really challenging for the teachers to teach the students science concepts using scientific language because teachers needed to use scientific terms and they should also learn more vocabulary before teaching, just like the students. Similarly, Ma'ruf and Sari (2020) found that Science and mathematics teachers mentioned that it was difficult for them to explain terms of Science and Mathematics in English due to lack of vocabulary. Moreover, Aizawa and Rose (2018) who found that EMI teachers in Japan expressed difficulty in teaching in English, regardless of the level of their English proficiency. In other words, even high proficiency teachers also reported linguistic challenges.

Another language barrier problem that the teacher faced was also caused by some students' low proficiency in English. Teacher 4 mentioned that even though most students in SIS Palembang were able to speak English some students that just

entered the school late like in P3 didn't have good English.

I think my students' ability in SIS is fine. Of course some students that just enter the school late like in P3 don't have a good English have difficulties (T4)

Teachers explained that these students made teachers spent more time teaching the class, they had to re-explain again the lesson, changed some vocabularies until the students understand, gave them extra time to do worksheets, and even did code switching.

In the class, for some students, their English is excellent but there are some students that are not good at English. So, sometimes, we have to change and mention some words that the students with the low proficiency are familiar with. So I have to teach them repeatedly. So it's fair for them. Besides, it takes time to do the worksheet so I have to give them extra time (T1)

It's not too distracting or troublesome in teaching science because they just lack grammar. So sometimes they understand the lesson. But if in another case, it's more tiring because I have to do code switching (T2)

These findings similar with Sela and Luke (2020) that most teachers mentioned that the students with low level of English proficiency was a challenge for them because these students would hardly understand the content of subjects delivered or transferred. Also, Ahmad and Qasem (2019) stated that Learner's first language (L1) is a barrier to the development of spoken English. Therefore, this challenge was unavoidable since English is students' second language

The second challenge that teachers face was class discussion engagement. It was found that some students that had low proficiency found it difficult to engage in the class discussions. They tend to be quiet because they were not confident and afraid to make mistakes in saying the words.

The difficulties are from the students with low proficiency level. Maybe it's because they are not confident so they are quiet during the discussion. Besides, these types of students when they answer the questions their sound are too low maybe because they are afraid to make mistakes. But for some students that start learning English from pre-school they can follow (T1).

In addition, due to students' anxiety, the students felt more comfortable to talk or asked questions to their friends rather than the teacher.

...sometimes there are some students that ask directly to their friends. That's where the discussion happened. It's because some students feel more comfortable talking with their friends...it's their initiative to ask their friends, maybe because they are afraid to ask me directly. That's it (T3).

This finding was in accordance with Ozer (2020) that students' reluctance to talk in English due to their low level of English proficiency. Similarly, Manalastas and Batang (2018) discovered that the students confidence in EMI class was lower than those in the Multi Lingual Class due to language barriers in expressing themselves. Furthermore, Ibna Seraj and Habil (2021) identified that shyness, anxiety, self-efficacy, reluctance, emotions, and confidence of the students create barriers to students' development in spoken English.

The third challenge was lesson preparation. It was quite challenging because it was wasting the teachers' time since they need to read the book carefully and look at the dictionary before they were teaching. It was because there were some vocabularies/ terms that they didn't know the meaning and the pronunciation.

There are a lot of students that like to ask but it's out of the topic so we must answer their question as best we can and don't let it become a question mark for a long time. So usually I study the topic first. If there are some vocabularies that I don't know I will find it in the dictionary. Besides, I like to make the script before I teach so I know what I want to say but that was when I was still a newbie in this school. Now, I am not doing it anymore (T1).

For the preparation, we need to find out the vocabularies first so the work is double. It's because some terms in Science are quite different from the English word that we use in daily conversation so we have to find out the meaning first whether it is ambiguous or not (T2).

The difficulties are not a lot. I just need to read the book carefully first before teaching so I will not make mistakes in pronunciation (T3).

Moreover, teachers need to spend more time to understand the lesson and to read the material carefully before teaching. Therefore the teacher

knew how to deliver it to the student because English was not the teacher's mother tongue.

I have to read the material first because I am using Bahasa Indonesia language so I have to read the materials so I know how to deliver it to the students with my language until they understand. I cannot directly teach the class without preparation except it's urgent and for example we have 2 years' experience in teaching. However, there must be a procedure for that because I am Indonesian and Bahasa Indonesia is my mother tongue. And If I want to teach by using English I have to read and prepare (T5).

Regarding this finding, Doiz et al. (2018) found that lesson preparation was a challenge because lecturers need to spend an extra hour in elaborating the classroom materials and lessons preparation in English.

CONCLUSION

In relation to the objectives of the study, there were three conclusions that can be drawn. First, teachers' believed in the benefits of English as a medium of instruction in teaching content subjects. Second, teachers manifested their beliefs in accordance with the classroom practices. Third, teachers faced the language barriers, class discussion engagement, and lesson preparation as challenges in teaching content subjects through English as a medium of instruction. Based on the findings, it is suggested that first, school in Indonesia especially in primary level could implemented EMI because EMI is very beneficial. Second, school and teachers need to be aware of the source of teachers' beliefs which might influence the reflection of the beliefs in the classroom practices. Third, teachers cannot sweep aside to the challenges and further action is needed to overcome the challenges since it would affect the implementation of EMI.

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