Voices of Non-English Students and Teachers in English as a Medium of Instruction

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Abstract. English as a medium of instruction (EMI) is currently a trend for non-English courses. It is also implemented in various universities in Indonesia. However, Indonesian as the first language (L1) still exists in EMI implementation. It is used to make students understand. On one hand, teachers are ready to use EMI, but, on the other, students ask for the use of L1 because they have limited English competency, which impacts their understanding the English instruction. This research aims to investigate students' and teachers' perceptions and the implementation of EMI in the Biology study programme at a private university in Bali, Indonesia. EMI is used in delivering course content by the content teachers. A case study design was utilised for the current research. Forty students experienced EMI in the plant physiology course and two content teachers were considered as the subjects of the study. Data were collected by document study, observation, employing questionnaires, and interviews. The result showed that teachers and students agreed on the importance of using EMI with the use of L1 even though it impacts feelings of difficulty and anxiety. As such, Biology students have to be provided with intensive English courses, English for Biology terms, and Biology materials are written in English to enhance their English language skills both in written and oral communication.

Keywords: Biology class; English as a medium of instruction (EMI); perception

1. Introduction

English is the primary language used in communication for participating in the globalisation era. Globalisation has changed the direction of Higher Education's (HE) goals to not only focus on local context achievement but also on global needs (Tight, 2021). HE is also the crucial phase for students to focus and study (Moussa, 2021). There is strong and booming competition among institutions to bring their quality to the global level (de Wit & Altbach, 2021). The competition

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shifts institutions' goals and impacts many aspects, such as policy reforms and strategies of institutions to modify curricula and accelerate internationalising institutions and have global competition (Alhalwaki & Hamdan, 2019). Related to the notion, the massive spread of English as a medium of instruction (EMI) is increasingly generating initiatives to support EMI teachers in the higher education context (Deroey, 2023).

The globalisation aspects lead institutions to be part of the world-class university (WCU). Indonesia's 2020-2035 education roadmap is addressed to excel in 21st-century skills and world-class higher education achievement (Tjalla, 2021). Moreover, *Merdeka Belajar Kampus Merdeka*'s (MBKM) policy strengthens the effort to achieve the WCU. MBKM [freedom of learning] is a policy released by the Ministry of Education and Culture to strengthen students' competencies by providing autonomous and innovative learning systems and opportunities to take learning at the same university or a different university (Nasution et al., 2021). The policy is implemented in HE institutions in Indonesia, in a private university in Bali. It is implemented because of the policy and the vision and mission of the institution to be in charge of global competition. English is influential to Indonesian students as students who have English skills could improve the students' quality (Ratminingsih, 2021) and have better opportunities to succeed in the future (Nithideechaiwarachok et al., 2023).

Based on the education policy (UUSPN 20/2003 article 50 paragraph 3), the Indonesian government has issued the importance of EMI for international-oriented implementation education programmes. The policy acts as the umbrella for the use of English for students to learn course content. The use of EMI by the content teachers is shown in classroom practice. The students were found to have general English in the first year of their study. Based on the result, the general English mean score of students who participated in this research was 71.43 (scale of 0-100). If it is converted to the regulation of the institution's scoring criteria, it is slightly above average. As the mean score, they are supposed to have knowledge and experience and to have acquired English in the general English course as the indicator for the success of EMI implementation. Statistically, the general English score was not a significant predictor (Curle et al., 2020).

In contrast with other findings, academic language-related challenges are significantly predicted by proficiency in the English language (Soruç et al., 2021), English knowledge, and English academic skills (Rose et al., 2020) and showed a better grade point average (GPA) (Alhamami & Almelhi, 2021). However, in this study, the teachers did not purely use EMI in delivering the content to the students as a way to face the challenges. They tried to keep using English during the teaching and learning process and also used L1 so that the students could understand the course content. It is essential for teachers and students because L1 is the mediatory effect on EMI academic success (Curle et al., 2020). It shows that there are two important aspects to face the challenges for the success of EMI: having general English and using L1 alongside EMI.

Issues and concerns presented above motivated the researchers to hear the voices of students and teachers' perceptions on using English as the medium of instruction in teaching Biology. Specifically, the study sought to answer the following research questions to achieve its objectives:

1. What are the students' and teachers' perceptions of the importance of English in the non-English class?
2. What are the students' and teachers' perceptions about the use of English as a foreign language in the non-English class?
3. What are the students' perceptions on the feeling about the use of English as a foreign language in the non-English class?

2. Literature Review

The notion of globalisation and World Class University (henceforth, WCU), in the current classroom practice, is on the emphasis of using English as the medium of instruction in teaching non-English subjects. English is a growing trend for global language and has become the world's lingua franca (Galloway et al., 2020). English has also become the target language (TL) used as the language instruction. The use of English for teaching other than English subjects in countries or jurisdictions, where the first language of the majority of the population is not English, is labelled as English as a medium of instruction (Dearden, 2018). In addition, it is a key role in the internationalisation process of the institution (Doiz & Lasagabaster, 2020). However, there is an interesting aspect to this. Based on the result of a systematic review of research findings, it is stated that EMI refers to various educational approaches. Both of the definitions (EMI in HE and EMI in practical context) have appeared to be fluid (Macaro et al., 2018).

EMI is crucial for higher education institutions to be accommodated in teaching practice: it is to embrace globalisation (Lee, 2023). HE institutions have started to use English in teaching content courses since 2012 (Nguyen & Sercu, 2021). It has been widely used in the last two decades as part of internationalising HE institutions (Dafouz & Smit, 2021) and has become a major subject of research (Picavet et al., 2023) as an effort to take the institution into the global community. The use of English for non-anglophones is a global interest in instructional approaches (Schmidt-Unterberger, 2018). It is a requirement that being a member of the global community needs English; as such, English as the lingua franca is one of the features of EMI (Zuaro, 2023). The implementation of EMI can improve content learning (Macaro et al., 2018) and has affected students' outcomes (Graham et al., 2018) through language shifts (Costa & Mariotti, 2017). It confirms the related research that stated the importance of EMI for a student's success.

A number of HE institutions take part in being global community members by focusing on English and putting English practice into policy; and curriculum as a plan and an action (Dafouz & Smit, 2021). HE institutions are allowed to insert English courses as one of the compulsory courses in the MBKM curriculum. However, faculties are allowed to modify the presence of English for non-English subjects based on the vision and mission of the faculties. The

modification should accommodate and be based on the student's condition. For example, putting English as the instruction in which it is done by content teachers who have English competency. It shows that the institution decides the emergence of EMI in practice. In other words, the EMI implementation is determined through top-down decision-making processes (Sahan, 2020).

In Indonesia, EMI emerged in schools by teaching non-English courses with the use of English as classroom instruction (Simbolon, 2021). In addition, in this globalisation and internationalisation era, communicating in English is crucial for scientists because most of the references are in English (Alhamami & Almelhi, 2021). EMI is starting to be applied in one private university in Bali, particularly in the Biology study programme, to support the importance of English for scientists. Besides having one semester for a general English course, the students are also provided with course content delivered in English as the instruction. EMI is used in delivering course content by the content teachers who have the ability to use spoken and written English. Using English for academic purposes is a crucial factor affecting the quality of EMI practice (Drljača Margić & Vodopija-Krstanović, 2018; Ekoç, 2020).

3. Research Methods

The study was aimed at investigating the perception of students and teachers with the use of English in classroom activities. The study was carried out in the Biology Education Study Programme, Faculty of Teacher and Training and Education, Universitas Mahasaraswati Denpasar. General English is programmed in the academic policy whereby they learn general English in the first year. The programme has two credit hours and 16 meetings. It covers reading, listening, writing, and speaking. However, in this general English, Biology terms are not the focus. A case study design was utilised since it describes activities (Creswell, 2012) and strengthens understanding and dealing with evidence, such as documents, interviews and observations (Yin, 2009). In this study, documents, questionnaires, observation and interviews were used as the instruments to gather the needed data.

The subjects were taken using a purposive sampling method. The students taking plant physiology course were considered the subjects of the study. The study involved two content teachers and 40 students of the Biology study programme. The total number of participants was 42. The content teachers used English in this course. Specific terms in the context of Biology were delivered in English. It supports the idea that EMI is an optional choice to implement and not across the curriculum (Richards & Pun, 2021).

To obtain the data, this case study started with a document study. It was based on the regulation and semester course plan that relates to the implementation of EMI. A questionnaire was also used and distributed through Google Forms. The questionnaire was adapted from Levine's version (Levine, 2003) and comprises three aspects: (i) the importance of English used in non-English classes (four items), (ii) the use of English as a foreign language in the classroom (nine items),

and (iii) the feeling about the use of English as a foreign language in the classroom (six items).

Responses were recorded on a Likert scale (Strongly Important = 5, Important = 4, Neutral = 3, Unimportant = 2, and Strongly Unimportant = 1). Responses (ii) and (iii) were recorded on a Likert scale, too (Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, and Strongly Disagree = 1). Aside from the document analysis and questionnaire, classroom observation was also done to confirm the result of the document and questionnaire. It was done through Zoom virtual conference three times. The observation on EMI implementation was done by employing   field notes. To support the result of those three aspects, it was then continued by interviewing teachers and students. The interview was focused on the use of EMI by considering the questionnaire items.

In the present study, ethical issues were taken into consideration. Institution approval for the distribution of questionnaires to teachers and students was obtained. Participation was voluntary, and during the online observation, the teachers were informed to teach as naturally as possible so that their responses and classroom atmosphere were kept confidential.

The data gained from the document study were analysed based on the relatedness of the regulation content and semester course plan with the implementation of EMI for the non-English course. Descriptive-quantitative data procedure was used to explain the data of the questionnaire and to determine the percentage of the questionnaire results. The data were counted and provided with a description afterward. Moreover, quantitative data were calculated with the Microsoft Excel program and then analysed descriptively. The observation and interview were analysed based on the consistency of the information provided by the participants.

4. Findings
4.1 Students' and teachers' perceptions of the importance of English in non-English class

Based on the collected data, generally, the students considered that EMI is important to be implemented. The student's perception of the importance of English used in non-English classes is presented in Table 1.

Table 1: The importance of English used in non-English class

No	Item	SU	U	N	I	SI	Total
1	The use of English by non-English teachers	0.00	0.00	4.80	52.40	45.20	100.00
2	The use of English by non-English students	0.00	4.80	2.40	54.80	38.10	100.00
3	The implementation of peer teaching for	0.00	2.40	4.80	54.80	38.10	100.00

	EMI in non-English course						
4	The use of bilingual instruction	0.00	2.40	2.40	50.00	45.20	100.00

Notes:
All are in percentage
SU   : Strongly Unimportant
U   : Unimportant
N   : Neutral
I   : Important
SI   : Strongly Important

In Table 1, it can be seen that there are four items asked to students related to the importance of English used in non-English classes. The data show that there is a positive perception from the respondents on the use of English by teachers who are not from the English study programme. The results showed that 52.40% of the participants agreed that English is important, and 45.20% were strongly important. These findings were supported by Lee and Lee (2019). It was found that the use of English provided experience in the classroom setting, which positively influenced students' perceptions.

The result is in line with the second item based on the students' side. It results in 54.80% for important while the other 38.10% being strongly important. Both teachers and students are of the same mind regarding the importance of English in non-English classes. It is important not only for academic purposes but also for their future career. Having English competency will make them more competitive in the work field. It supports the study by Talaue and Kim (2020) that EMI might provide a competitive advantage for work.

Interesting results are also found for the other two items addressing peer-teaching between English and content teachers to maximise the use of English during classroom activities. Strongly important and important options show the highest percentage: 38.10% and 54.80%. It is also followed by item four, in which the respondents have put themselves in a positive perception with the use of L1 and TL hand-in-hand. They received 50% and 45.20% for important and strongly important options.

4.2 Students' and teachers' perceptions about the use of English as a foreign language in the non-English class

Table 2. The use of English as a foreign language in the classroom

No	Item	SD	D	N	A	SA	Total
1	The use of English frequently	0.00	0.00	0.00	50.00	50.00	100.00
2	The use of English in the classroom	0.00	9.50	2.40	66.70	23.80	100.00
3	The use of L1 is not allowed	4.80	54.80	11.90	26.20	2.40	100.00

No	Item	SD	D	N	A	SA	Total
4	The use of full English by teachers and students for learning the content	7.10	52.40	11.90	21.40	7.10	100.00
5	The use of English by non-English teachers in classroom activities	2.40	28.60	11.90	52.40	4.80	100.00
6	The use of English in discussion and dialogue	2.40	40.50	9.50	47.60	0.00	100.00
7	The use of full English, regardless of the amount of English used by students	2.40	38.10	9.50	45.20	7.10	100.00
8	The use of full English by students during learning and discussion	7.10	52.40	11.90	31.00	0.00	100.00
9	The use of full English in the discussion session	2.40	40.50	14.30	40.50	2.40	100.00

Notes:
All are in percentage
SD   : Strongly Disagree
D   : Disagree
N   : Neutral
A   : Agree
SA   : Strongly Agree

The second part focused on the items on the use of English in the non-English course, resulting in varied responses for the nine items as shown in Table 2. Three items show positive responses: items 1, 2, and 5. They agreed that the more frequently English is used in learning, the better they are. It shows a strong response for item 2: 66.70% and 23.80% of them have a positive agreement to use English during the learning process to possess English skills. The other items relatively show a fair distribution of agreeing and disagreeing. Another highlight for those nine items is item 3. The response shows a high percentage of grey perception. They seemed to be confused if L1 is not allowed in the teaching and learning process. The absence of L1 is a matter for them and their learning.

4.3 Students' perceptions on the feeling about the use of English as a foreign language in the non-English class

Table 3. The feeling about the use of English as a foreign language in the classroom

No	Item	SD	D	N	A	SA	Total
1	The anxiety of using English	0.00	28.90	7.90	57.90	5.30	100.00
2	The difficulty in English communication	0.00	5.30	5.30	71.10	18.40	100.00
3	The challenge in using English	0.00	0.00	5.30	57.90	36.80	100.00
4	The anxiety of speaking English during activities	0.00	23.70	10.50	57.90	7.90	100.00
5	The laziness in using English during learning	7.90	52.60	18.40	21.10	0.00	100.00
6	The difficulty in grammar	0.00	5.30	5.30	42.10	47.40	100.00

Notes:
All are in percentage
SD   : Strongly Disagree
D   : Disagree
N   : Neutral
A   : Agree
SA   : Strongly Agree

The last part of the questionnaire addresses the students' feelings about using English during the content course. Most of the items are highlighted in 'agree'. The use of English during the classroom activities in the non-English course makes them anxious. English is challenging for them and their anxiety impacts their difficulty in using English. It can be seen from the highest result of the item for the difficulty aspect. 71.10% of them were in 'agree', and 18.40% were in 'strongly agree' choice. They are in the same line that they have difficulty using English. However, this study found an impressive result on item five. There were 52.60% and 7.90% of the respondents in negative perception of statement five. They disagreed to stating themselves as lazy in using English to communicate in classroom activities.

Regarding the result of the questionnaire and the two-semester course plans, there seems to be a relationship between the interview result with the teacher and student. Both parties have the same point of view that to be a member of the global community, having English skills is a matter that needs to be considered. English is important to be used as a medium of instruction. It is a path to take part in global competition. As the teacher stated:

> "*Yes, English is important. However, students face difficulty in using it. Therefore, L1 and TL were used interchangeably, so that they are not confused. The important one is they want to learn*".

This finding confirmed the result of the two data collection, which is crucial to support the belief that English is important even though they have limitations in using it in classroom communication. The teachers tried to help to make them understand and be familiar with English. The students were taken into an English zone by using English as the instruction and putting Biology sources or references with English as the requirements. Being exposed to Biology references with the use of English is one of the efforts to take the students into the global world.

The teacher's viewpoint was confirmed by highlighting the student's response. One of the highlights from the interview with students is as follows:

> "*English is important. However, if the teacher uses full English, it is not good. Not all students are fluent in using English. Probably, the teacher can use 50% English and 50% Bahasa Indonesia. Sometimes, there are some terminologies that are similar to English*".

The student's responses showed the importance of English in Biology for their future. They need to be able to use English to support their content knowledge. They need to be exposed to English. However, the highlight is in the proportion of English. It is not good to have full English. It is better to use L1 and TL interchangeably because of students' limitations in English. The students' response confirmed the teachers' statements that the use of EMI cannot be fully used. Rather, there is conditioning instruction to make them understand the material given by teachers.

The conditioning instruction is confirmed with another interview result as follows:

> "*The feeling I experienced was nervous and afraid that I did not understand. But after being taught in English, the feeling is fun because learning plant physiology in English is rare*".

5. Discussion

This study investigated students' and teachers' perceptions of EMI and its non-English course implementation. The results showed that both teachers and students agreed on the importance of EMI and the use of English in the Biology study programme; for communication during the teaching-learning and for understanding English-specific terms. The findings aligned with the previous relevant studies (Alhamami & Almelhi, 2021; Simbolon, 2021). The results also confirm other studies showing that EMI implementation is determined by the policy of HE institutions (Dafouz & Smit, 2021; Sahan, 2020). Further on, the findings showed respondents' perception of EMI use and confirmed the reasons for choosing EMI, such as producing graduates with global literacy skills, promoting competitiveness, and facilitating international communication (Richards & Pun, 2021). However, in contrast with the study, related and relevant literature shows EMI creates a dilemma in the context of education policy and implementation (Alhamami & Almelhi, 2021; Tipprachaban, 2022).

The research results are also in line with the findings of Lee and Lee (2019). It is important for the students to have and use English in classroom activities. The students got experience in language learning with the use of English and improved their language skills (Abduh et al., 2022) and the teachers perceived the usefulness of EMI for classroom practice (Nur et al., 2023). Then, the students and teachers are in the same vein regarding the importance of English for non-English classes. It is not only for academic purposes but also for the students' future career. Being able to communicate in English can make them competitive. It supports the study from Richards and Pun (2021). Competitiveness is one of the reasons to put EMI as the choice in learning.

Although the results showed their importance, both parties were challenged in the context of English proficiency. Lack of English proficiency becomes a challenge for EMI implementation (Drljača Margić & Vodopija-Krstanović, 2018). As the status of English is a foreign language, students and teachers are facing difficulties in understanding words. Therefore, they thought that having peer teaching in an EMI setting is important to consider. There might be a collaboration between content teachers and English teachers in teaching content classes. It potentially helps students in understanding content while having English exposure.

During the implementation of EMI for the Biology students, teachers and students seemed to equip themselves with L1 while they found it difficult to share their thoughts in English. The findings agree on the use of L1 to support students' limitations in English, and it is indispensable during EMI implementation (Pun, 2021; Simbolon, 2021). It shows that L1 is crucial to be used in the EMI set. This finding also supports a research result on L1 use in EMI classes. There were found that approximately 90% of the respondents believed that L1 should be used to facilitate the students' learning (Kim et al., 2017). There is a potential that using bilingual as an EMI teaching strategy could be done by giving science-related keywords while using the Indonesian language as the language of instruction (Sukardi et al., 2023).

Furthermore, based on the general skill aspect stated in the semester course plan number four of the plant physiology course, the students' learning outcome is mastering the content knowledge to support themselves at the national and international levels. The international level represents an indicator that the Biology study programme is an effort to be a part of the global community. It is relevant when the content knowledge and its activities are delivered using EMI. They do not only have English as the instruction but also any kind of terminology in English, and the ways to communicate it are accommodated during the learning. It agrees on adjusting the EMI science class to meet the students' current level (An & Thomas, 2021).

The use of EMI in the plant physiology course is not a sudden action to facilitate them to acquire English. Based on the semester course plan document, the students are already accommodated with the curriculum. There is an English for Biology course taken in the first year of their study, especially in semester one.

This course covers the four skills, tenses, animals, plants, life-process, and biology-related. Those contents are delivered communicatively and cooperatively using L1 and TL. It is to assist them in learning English (Kim et al., 2017).

Therefore, this study shed light that the combination of English and L1 as language instruction could affect the students' perception during the teaching and learning process. It implies that Biology students have to be provided with intensive English courses, English for Biology terms, and Biology materials written in English to succeed in delivering content with the combination of English and L1 as the instruction. It supports research results on the influence of the medium of instruction for content transmission (Zuaro, 2023) which benefits English acquisition (Almusharaf et al., 2023). Policy on teachers' professional development for EMI practice should be paid attention to. This is in line with the previous research result. In implementing EMI, a policy on professional development is required (Galloway et al., (2020). Content teachers need to be trained and improved in their English proficiency to succeed in the EMI implementation.

6. Conclusion and Recommendation

In this study, the teachers and students agreed on the importance of using EMI for non-English courses, even though they found it difficult and were anxious to use English. The study also showed that the use of EMI cannot be fully used during teaching-learning. As the status of English as a foreign language, EMI success is better implemented through their L1 alongside EMI courses. The study is limited to the focus and the sample. However, this study could be a potential reflection and consideration for the HE regulators to revisit and review the policy by focusing on the English demand and sustainable professional development for teachers in creating qualified students. The study also shows that teachers could teach the content courses with the use of English when students are ready to use it in the teaching-learning process.

Based on the findings, it is recommended that the preparation should be improved or enhanced before having English as the medium of course instruction. Furthermore, future studies might concern the role of EMI for the non-English course and EMI teaching strategies, with more samples that could be carried out and the influence of the amount of L1 during the instruction. In addition, materials development that address intensive English courses, English for Biology terms, and Biology materials are written in English should be designed and are potential for future research.

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The Questionnaire

Section I. The importance of English used in non-English class

1. The use of English by non-English teachers

- o   Strongly Unimportant
- o   Unimportant
- o   Neutral
- o   Important
- o   Strongly Important

2. The use of English by non-English students

- o   Strongly Unimportant
- o   Unimportant
- o   Neutral
- o   Important
- o   Strongly Important

3. The implementation of peer teaching for EMI in non-English course

- o   Strongly Unimportant
- o   Unimportant
- o   Neutral
- o   Important
- o   Strongly Important

4. The use of bilingual instruction

- o   Strongly Unimportant
- o   Unimportant
- o   Neutral
- o   Important
- o   Strongly Important

Section 2. The use of English as a foreign language in the classroom

1. The use of English frequently

- o Strongly Disagree
- o Disagree
- o Neutral
- o Agree
- o Strongly Agree

2. The use of English in the classroom

- o Strongly Disagree
- o Disagree
- o Neutral
- o Agree
- o Strongly Agree

3. The use of L1 is not allowed

- o Strongly Disagree
- o Disagree
- o Neutral
- o Agree
- o Strongly Agree

4. The use of full English by teachers and students for learning the content

- o Strongly Disagree
- o Disagree
- o Neutral
- o Agree
- o Strongly Agree

5. The use of English by non-English teachers in classroom activities

- o Strongly Disagree
- o Disagree
- o Neutral
- o Agree
- o Strongly Agree

6. The use of English in discussion and dialogue

- o Strongly Disagree
- o Disagree
- o Neutral
- o Agree
- o Strongly Agree

7. The use of full English, regardless of the amount of English used by students

- o Strongly Disagree
- o Disagree
- o Neutral
- o Agree
- o Strongly Agree

8. The use of full English by students during learning and discussion

- o Strongly Disagree
- o Disagree
- o Neutral
- o Agree
- o Strongly Agree

9. The use of full English in the discussion session

- o Strongly Disagree
- o Disagree
- o Neutral
- o Agree
- o Strongly Agree

Section 3. The feeling about the use of English as a foreign language in the classroom

1. The anxiety of using English

- o   Strongly Disagree
- o   Disagree
- o   Neutral
- o   Agree
- o   Strongly Agree

2. The difficulty in English communication

- o   Strongly Disagree
- o   Disagree
- o   Neutral
- o   Agree
- o   Strongly Agree

3. The challenge in using English

- o   Strongly Disagree
- o   Disagree
- o   Neutral
- o   Agree
- o   Strongly Agree

4. The anxiety of speaking English during activities

- o   Strongly Disagree
- o   Disagree
- o   Neutral
- o   Agree
- o   Strongly Agree

5. The laziness in using English during learning

- o   Strongly Disagree
- o   Disagree
- o   Neutral
- o   Agree
- o   Strongly Agree

6. The difficulty in grammar

- o   Strongly Disagree
- o   Disagree
- o   Neutral
- o   Agree
- o   Strongly Agree