

An investigation of lecturers' teaching through English Medium of Instruction – A case of Higher Education in China

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Abstract

Teaching through English Medium Instruction (EMI) has been a strategic move in some European and Asian countries as part of their educational internationalisation. A large number of studies on EMI teaching have appeared in the last decade. The majority of these report on issues and concerns at macro-level including: the lack of structured policy guidance, EMI lecturers and students' low level of English proficiency, and a shortfall of research informed training programs for EMI lecturers. Up to date, there is little research into EMI in-class teaching and learning. Lived experience in EMI in-class practice has been largely ignored. To fill this gap, this research explored a group of academics' in-class EMI practice in a Chinese university. Their teaching process through EMI was observed and recorded, with data analysed through a multiple theoretical lens. Data reveal that EMI teaching is a complicated issue and can be neither standardised nor prescribed. It needs to be addressed as a pedagogy responding to and influenced by local context, driven by language, culture and education systems. This research is expected to provide insight for the development of localised institutional guidelines for EMI teaching and lecturers' professional development in EMI teaching.

Keywords: English Medium Instruction; Translanguaging; Chinese academics; Language transfer; higher education

1. Introduction

Teaching through EMI (English Medium of Instruction) is a fairly new learning delivery system, which has arisen as part of an emergent dynamic: the globalisation of education within a global economy. It is described and commonly accepted as the “use of the English language to teach academic subjects in countries or jurisdictions where the first language (L1) of the majority of the population is not English” [1] (p. 2). Thus, it is not a major topic in the countries where English is the national language. Rather, it is the ‘business’ of the rest of the world where governments pressure lecturers to use English as the medium of instruction, with the purpose of raising their domestic students’ English proficiency through subject learning and/or making their class accessible to international student groups.

Teaching via EMI across Europe dates back to the 1990’s and evidenced in the Bologna Declaration [2] as a statement of EU tertiary education reform. EMI was seen as a strategic move for EU countries to internationalise their universities’ curriculum and accreditation in the fast developing, globalised world [3, 4]. With the increasing competitive marketing of higher education in recent years, some major Asian countries and/or regions such as China, Vietnam, Korea and Taiwan are swiftly moving toward EMI delivery in their higher education for various but similar reasons [5, 6, 7].

The Chinese Ministry of Education (MOE) has recently introduced policies that prioritize EMI teaching in its higher education, as part of the country’s strategic plan for developing “double first-class universities” [8, 9]. The ambition is to make China the top destination for international students [6]. Similarly, teaching through EMI has become a “national movement” [10] (p. 195) in Taiwan’s higher education, for the purpose of attracting international students and addressing universities’ decreasing enrolment number due to a low domestic birth rate [11]. South Korea and Vietnam share similar rationales for promoting

EMI teaching in their higher education. Further, the increasing number of international enterprises and growing demands for a skilled labour force with English proficiency requires employers to value and improve English language skills. This has prompted local universities to provide courses taught in English and, in many instances, to use EMI in subject teaching [12, 13, 14, 15]. However, this market-driven top-down initiative hasn't been in operation smoothly [3] and the literature has reported various problems in EMI teaching.

2. The prevalent problems due to the demand of teaching through EMI

Following governmental political agendas, institutions across regions and countries appear to have enthusiastically engaged with and implemented teaching via EMI. For historical and cultural reasons, and some institutions (such as those operating within the Indo-European language family) may be more advanced than others (such as those in the Asian Sino-Tibetan language family). However overall EMI is an immature practice, in its early stages of development [1]. Literature reports that majority of the institutions and EMI lecturers applying this pedagogical method encounter difficulties of all kinds.

2.1 Identified problems in teaching through English Medium Instruction

Recent research identifies institutions' growing concerns about their lecturers' ability to teach EMI programs [1, 16, 3, 17, 4] and EMI lecturers' English proficiency is singled out as the key barrier for EMI teaching [18, 19, 20, 21]. A research study conducted across 55 countries found that most of the universities under investigation did not have a "standardised English benchmark test" for EMI lecturers but simply assigned those who were believed to have good oral English [1] (p. 27). A more recent study found that for quality control purposes, some universities started generating and implementing policies for internal assessment of EMI lecturers' English proficiency [22]. This partially reflects university

executives' incomplete understanding of EMI teaching. Effective EMI pedagogy is more than simply a matter of engaging a teacher who speaks English proficiently.

A number of researchers have called for quality workshops as a solution to the problem of improving EMI teachers' proficiency [23, 24, 25, 26, 16]. These scholars argue that thoughtfully designed workshops or structured short courses are needed. However most of the universities offering a significant number of subjects through EMI, admitted that they did not provide training for their EMI lecturers, for reasons of cost or through assumptions that training was not necessarily needed [27, 1, 3, 4, 28]. For example, a recent survey conducted among 79 universities in Europe found that there is no "sufficient attention to the training and accreditation of the teachers engaged in EMI" and "the training of teachers in EMI is far from being treated as an important issue in European university education" [27] (p. 557).

The existing EMI training programs have focused on lecturers' English communication skills and are often conducted by language centres [29, 30, 31, 4]. These trainings have largely overlooked EMI teaching pedagogy which is regarded as a serious problem and repeatedly pointed out by researchers [29, 27]. It seems that in current research there is an absence of data that can both explicate current experience in EMI lecturers' classroom teaching besides their English speaking, and that can inform the development and design of appropriate EMI workshops.

Similarly, EMI lecturers tended to narrow their focus on language issues when seeking professional development. The majority of the lecturers and teachers in the field are not even sure what other aspects besides language they should look at their EMI teaching [32]. Their concern is about their own and students' non-colloquial and 'accented' English, poor English communication quality with their students, students' misunderstanding of, and confusion at subject vocabularies in English [33, 34, 35, 36, 37, 38]. Some EMI lecturers believe in

attending international conferences or a short study tour to an English-speaking country as the solution for their EMI teaching [39, 40, 41, 42]. Clearly, research with valid classroom data may inform them of their needs and understanding of EMI teaching as a more complicated pedagogical issue than only a language problem.

2.2 Methodological weakness of current literature

Most popularly cited research reports in EMI field have been based on collecting survey and interview data [1, 43, 44, 45, 46, 4]. For example, in Europe, a large-scale survey conducted by Dearden in 2014 collected EMI lecturers' perception of their pre- and post EMI teaching experience and their beliefs about their role. Through another survey, Dearden & Macaro [43] compared EMI teachers' attitudes towards EMI programs in three countries. Similarly, Briggs, Dearden, & Macaro [44] in their study collected and compared secondary and tertiary teachers' beliefs about EMI teaching. O'Dowd [27] surveyed 79 European universities' opinion on usefulness of EMI training and EMI lecturers' accreditation. Through questionnaire and interviews, Werther, Denver, Jensen & Mees [4] examined students' perceptions of their lecturer's English and teaching content, and lecturers' view of their English proficiency as well. Arnó-Macià & Mancho-Barés [46] also sent questionnaire out to collect lecturers' and their students' attitudes towards content and language integrated learning (CLIL) and their understanding of concepts EMI and CLIL. Research conducted through questionnaire and interview questions, by collecting people's opinions, perceptions, beliefs, attitudes and confidence about EMI teaching and learning can be a problem as what is actually happening in EMI classrooms is not clear.

Asian countries' EMI research has followed a similar path. Hu & Lei [5] studied national, institutional and personal ideologies about EMI, and the factors that formed lecturers and students' beliefs on local EMI programs. This study was conducted in a Chinese

university through analysing policy documents, individual interviews and focus groups.

Through questionnaire and interview, Kim [47] in Korea surveyed and interviewed university lecturers and students on their belief of the necessity of EMI teaching and their performance and expectation of learning through EMI class. Rose and McKinley [48] collected and analysed 37 Japanese universities' EMI policy documents. This document analysis has enabled the researchers to argue that higher education language policies throughout the East Asian region share similar movements. They also found that none of these universities views EMI teaching from pedagogical perspective.

As indicated, from a topicality angle, majority of the literature has conveyed a message: English is the problem of EMI teaching, and if this problem is solved, EMI teaching will be good. This simplistic message has to some degree failed to inform EMI policies, training programs and EMI lecturers on the other key components in EMI teaching. To large extent, the methodology selected for the research should be blamed given that little has been conducted through collecting rich data from actual EMI classes. Fewer findings of the literature are based on observation and analysis of what is actually happening in universities' EMI classrooms through examining lecturers on "what they do, how they do it, why they do it" [49].

3. The research design

This research asks: What features have EMI lecturers demonstrated in the process of their teaching? Instead of following the recent research that looks at what they *think* they are doing and saying in their EMI class, this study focuses on exploring what they *are* doing and saying in EMI classes. By 'doing', it aims to look at their teaching from pedagogical aspect from teaching strategy to handling teacher-student relationship: by 'saying', it intends to

investigate their English expression and instruction. Further through multi-theoretical angle, it is expected to make sense of their EMI teaching, and impact factors such as their first language, culture and education system with a hope that it will contribute to lecturers' EMI professional development, the making of EMI policy documents and the design of quality EMI training programs.

3.1 The site and participants

A major university in southeast China was selected as the research site. The university has implemented EMI teaching in a range of subject areas for five years and currently about 100 academic staff are registered lecturers in the university's EMI program. Twenty participants were recruited through the University's Teaching Affair Office. They are professors, associate professors and lecturers in the field of Biochemistry, Global Studies, Engineering, Physics, Maths, Medical Science, Marketing, Computer Science and Metaphysics. Their age ranges between early thirties and early fifties, and their EMI teaching experience ranges between one and five years.

3.2 Focused participant observation

To understand how Chinese lecturers implement EMI teaching in practice, this research is conducted through researchers' participant observations. A total of twenty lessons (a 50-minute lesson from each participant) of EMI were observed and audio-recorded by two of the three researchers (the authors of this report). Participant observation allows opportunities to observe classroom situations, and to document and analyse the ongoing teaching and learning behaviour of EMI lecturers and their students, including language use,

teaching strategies and teacher-students interaction. It enables a holistic view of EMI teaching. As Macaro [39] argues, observing and recording what actually happens in EMI classes is an essential step to enact trustworthy EMI research. However, in the existing studies, researchers are more removed, reporting on related but tangential EMI issues, such as participants' self-reporting and self-believing type of data on EMI.

In the field of education, researchers' participant observation is an increasingly used method to collect data and one of its advantages is, as argued by Dewalt & Dewalt [50] (p. 92), it enables the researchers "to develop a holistic understanding of the phenomena under study that is as objective and accurate as possible" if the data is recorded precisely. Observation can conquer the limitations of other method such as interview and narrative studies which report on what people think or imagine they are doing instead of what they are actually doing [51]. In a culture-related study such as the research being reported, it is especially necessary to use participant observation as it helps the researcher to explore questions that are culturally relevant, and to better understand what is happening in the culture. The methodology thus "lends credence to one's interpretations of the observation" to the phenomenon and context under study [52] (p. 143).

The weakness for this method is the observer's potential bias in the observation that might impact on the result. The observer needs to keep an open and nonjudgmental attitude and be aware of and interested in new things while attending to any propensity for feeling culture shock [53]. To minimize the weakness the method might cause, a three-phase focused observation is designed, through adaption of Fortanet-Gómez's EMI framework [54] and Han and Yao's education-linguistic model [51]. Phase One focuses on the language: classroom discourse, pragmatic language, functional grammar and communication competence. Phase Two focuses on pedagogical aspects: classroom management and scaffolding strategies for learning and emotional engagement. Phase Three observes the

translanguaging and transculturalism aspect: whether and/or how lecturers mobilise theirs and their students' first language, culture and education system in the EMI class.

3.3 Multi-theoretical lens of analysis

As argued in the literature, teaching through EMI is a contextualised pedagogical issue. It "is not just a simple matter of translating what one was going to say or present visually into English" [45] (p. 56). Proficient English does not make an effective teacher without the additional teaching strategies [26]. Unquestionably, linguistic theories will be too narrow as analytical tools for interpreting phenomena in EMI classes. EMI teaching, as a more complicated pedagogical issue, may be influenced by EMI lecturers' culture-related teaching philosophy, principles and education system [49]. Viewing it as such, the data of this research were processed through a triangulated analysis. The theoretical tools used are L1/L2 transfer [55], translanguaging [56], pragmatics [26] and dimensional paradigm on teaching and learning between cultures [57].

4. Findings and discussion

Key themes emerging through data analysis. These include unique lecturer-student interaction mode probably influenced by local education system and/or culture, L1's shadowing role in the lecturers' EMI teaching, and active use of translanguaging and pragmatic strategies in these EMI classes.

4.1 Unique lecturer-student interaction mode

Data reveal that in all the twenty classes observed, there were very few in-class dynamic activities recorded. There were no opportunities for students to work with each other. The only in-class interaction was when the lecturers initiated questions for students to respond. However, questioning did not prove to be successful in leading to interaction. As the excerpts

(see Table 1) indicate, leading questions were often asked in order to affirm the position of the lecturer and responses to the questions were habitually inferred by the lecturer.

Table 1: Seeking for interaction through questioning

N	Excerpts	Question type
1	T: “Did you read the 2 articles I sent you?” S: (Silence). T: “Did you? Did you?” S: (No answer).	Checking; factual
2	T: “Do you follow me?” S: (No answer) T: “Do you follow me?” S: (No answer) T: “So you cannot follow me?... Just speak out if you can’t. It doesn’t matter.” S: (No answer). T: “Anybody? Can you understand? Just tell me.” S: (Silence)	procedural in nature
3	T: “Based on this argument, what can you learn?” S: (Silence) T: Anybody can tell me? Anybody? S: (No answer)	Cognitive question
4	T: what do you think of this answer? S: (Silence) T: any idea on this? S: (No answer)	Cognitive question require students to think

As the data suggest, asking and re-asking the same or similar questions tends not to elicit responses from students. The questions in Excerpts 3 and 4 (Table 1) need students to not only know the fact but more importantly to give their opinion and judgement based on the fact. Expressing an opinion in English provides an additional challenge. This echoes Blosser’s and Kyeyune’s research finding [58, 24]. That is, a lack of response arises when students are intimidated by the difficulty of English, and/or when specialist discipline-based

terms are not understood; or when cognitive questions are challenging and require a higher level of thinking from students [58]. In this way students' response rate can be reduced.

In many cases straightforward questions asked by lecturers, such as "Do you follow me?" or "Did you read the two articles I sent you?" (Table 1: Excerpts One and Two) did not receive a response. Such questions are checking facts or are procedural in nature. They do not need logical operation or to use previously learned knowledge. The questions do not even need an answer with more than 'Yes' or 'No'. It is not highly convincing if English is to be blamed as the only or main reason for a non-responding class. Procedural questions and fact-checking questions in simple pattern English (e.g. Do you follow me?) should not be a challenge for the students as most of those in the EMI program would have passed university required English proficiency (University Band Four English which is equivalent to IELTS 5.5).

Interestingly against such 'un-reciprocal in-class interaction', students queued for one-on-one dialogue with their lecturer after class and this was found to be a popular phenomenon among most of the classes observed. It was as a standard practice encouraged by the lecturers, as half of the observed lecturers at the end of their teaching session indicated below:

T1: "Ok, take a break, take a break! If you have any questions you can ask me now".

T2: "If you didn't see the picture, come to see me in the afternoon".

T3: "If you are still not sure, come and ask me during the break."

This mode of interaction appears to be the accepted practice, as the lecturers have the power to determine the form of interaction they prefer and extend this invitation to students [57]. These private interactions indicate that both the lecturers and students preferred a conversation privately instead of in the public. It is not always related to the lack of

confidence in English expression as it could be heard that they switched the language code between English and Chinese liberally. Some existing research found that for Chinese students, speaking up or asking questions in front of the whole class interrupts the precious teaching time [59, 60]. There is also research pointing out that the majority of Confucius heritage students prefer not to make their voices heard as it is assumed to be a less respectful behaviour for an individual case to hold the whole class up from moving forward [61]. This might help explain why conversations occurred between the lecturers and their students during session break or after class.

4.1.1. Cultural dimensional interpretation of the interaction

It is useful to interpret the phenomenon of student silence in class through the lens of Hofstede's dimensional paradigm on the differences in teaching and learning between cultures [57]. According to this framework, in a high Power Distance (indicating a clear social hierarchy) and strong Uncertainty Avoidance (limited tolerance for difference and ambiguity) society like China, "teachers [are] supposed to have all the answers" [57] (p. 10), "freedom of speech is not a primary concern" [57] (p. 16), "harmony should always be maintained" and "people are less tolerant of deviant persons and ideas" [57] (pp.10 -11). This is different from the practices in countries such as the UK and Australia, which are seen as low Power Distance and weak Uncertainty Avoidance societies [57]. In those countries, teachers expect students to speak up spontaneously and believe effective learning is based on two-way communication in class. Hofstede argues that despite frequent criticism, the cultural dimension theory is durable and robust, given that on "a year-by-year basis in many cases find no weakening of the correlations" [57] (p. 21).

4.2 L1/L2 transfer – Lecturers' English instruction shadowed by their L1

The data analysis also indicates that the lecturers' mother tongue – Chinese (L1) - strongly influenced their English (L2) language use. The phenomena of L1/L2 transfer typically occurred throughout the observed lectures in three areas: phonological, semantic and syntactic transfers.

4.2.1 Grammatical and semantic transfer

Across the two languages (Chinese and English), the researchers consistently perceived some similarities on individual items. This is despite the fact that English and Chinese are distant or even unrelated languages [55]. Tables 2 and 3 provide examples of language transfer in these three areas of phonology, semantics and syntax.

Table 2: Transfer of grammatical and semantic meaning

	Excerpts (Sentences in brackets are adjusted for correct English usage)	Codes
Group 1	- “What it look like?” (What does it look like?) - “Peers can help?” (Can peers help?) - “So, anybody tell me?” (Can anyone tell me?) - “I ask you again”. (I will come back and ask you about this later.) - “Follow me! Follow me?” (Do you follow me?).	Question sentences
Group 2	- “if do this ... it connect xxx ... How to connect the first and second?” (If we do this, it will connect to xxx. How can the first and the second then be connected?) - “Without US the police what would the world be? Peace? Stable? Would be in chaos.” (If we didn't have the US policing the world, what would the world be like? Would it be peaceful? Stable? It would be chaos.). - “We need to think about why different view for governing the country” (We need to think about why there are different views for governing a country).	Subject-less sentence
Group 3	- “Which one is special characters?” (Which ones are special characters?)	Singular/plural form
Group 4	- (The lecturer wrote “patriotism” on the whiteboard) “Do you know what is it?” (Does anyone know what this means?)	sub-clause structure

Group 5	- “Now open your computer.” (Now turn on your computer.) - “Good! You’ve got sharp eye! (“Good! You see things clearly.”) - “Just speak out. I don’t like class quiet”. (Speak up! I don’t like a quiet classroom).	Semantic transfer
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The above examples reflect the reliance on sentence structures of the speaker’s first language which created transfer errors. Consistently incorrect structures observed include:

- The structure of question sentences: Sentence structures are often seen following the Chinese pattern of adding a rising tone and question mark at the end of an assertive sentence (see example in Group 1).
- Statements without a subject: This occurs as there are no strict subject-predicate rules in Chinese sentences and a sentence can be valid without a subject (see Group 2).
- Lack of clarity with reference to singular and plural: There is no singular and plural consistency issue in the Chinese subject and predicate relationship, and some of the lecturers transferred this usage into their English expressions.
- Lack of clarity in sub-clause structures: Overuse of conjunctions reflects the influence of particular Chinese language expressions (see Group 3).
- Semantic transfer: This occurs when Chinese concepts or terminologies do not have English equivalents. For example, ‘turn on’ is translated into Chinese ‘open’, thus ‘turn on the computer’ becomes ‘open the computer’, and ‘turn on the light’ becomes ‘open the light’.

Across English and Chinese language, there are cognates different in both grammatical form and semantic meaning. These excerpts indicate that the lecturers’ English use has shown strong influence by grammatical rules and semantic units of their first language. As earlier linguists argued, unrelated first language could play a significant role in a second language

learning [62] and “one’s L1 knowledge has as much influence on the learning of an unrelated second language as on the learning of a related one” [63] (pp. 38-39). The conceptual patterns and linguistic codes in Chinese have provided the essential support in their English instruction.

4.2.2 Phonological transfer – consonants, vowels and consonant-vowel complex

Data demonstrate phonological transfer in pronunciation of particular English-language words in the lecturers’ English Medium Instruction. This was the case even with speakers who are fluent in English in the classroom. The main problem is with English consonants and vowels that are absent in Chinese (the speakers’ first language), and those words that end with friction consonants. Examples from the observation data appear in Table 1 below.

Table 3: Phonological transfer– consonants, vowels and consonant-vowel complex

Consonants: /ð/ /θ//dʒ//tr//tʃ//l/		Vowels: /eɪ//e//aɪ//eə//ʊ//æ//ʌ/		Chinese consonant-vowel combining /f//t//d//s/	
Lecturers’ pronunciation	The English words	Lecturers’ pronunciation	The English words	Lecturers’ pronunciation	The English words
[zan]	Then	[du/u]	Do	[gai/si]	Guess
[zi:si]	This	[tu/u]	too	[pla/si]	Plus
[ze]	The			[i/fi]	If
[aze]	other			[i/zi]	is
[sing]	thing	[Min]	Main	[hai/de]	Had
[sink]	think	[dou/min]	Domain	[gu/de]	Good
[sru:]	through			[an/de]	And
				[in/ste/de]	Instead
				[nide]	need
[chuans-]	Transform	[uen]	When	[di/li/te]	delete
[Chuanpu]	Trump	[en]	n	[ei/te]	eight
[machi]	much			[ba/te]	but
				[krei/te]	create

				[dao/te] [gai/te]	dot get
[an/gou]	Angle	[dang]	Done		
[Jia/ste]	Just	[wai/ri/bao]	Variable		
[you/ruo/li]	Usually	[pai/er]	pair		
		[san] [kou/san]	Sine Cosine		

In these examples it is explicit that the lecturers' L1 directly influences their L2 pronunciation. The English consonants /ð/, /θ/, /dʒ/, /tr/, /tʃ/ and /l/ were replaced by the Chinese sounds [z], [s], [j], [ch], [q] and [o] (see column 1 and 2 in Table 3). This is due to the absence of these English sounds in the Chinese pronunciation system. The English vowels /eɪ/, /e/, /aɪ/, /eə/, /u/, /æ/ and /ʌ/ were changed to [i], [en], [an], [ai], [u], [ai] and [ang] in some lecturers' pronunciations (see columns 3 and 4 in Table 3). It was also observed that a significant proportion of the lecturers would tend to add the vowel sounds [e] and/or [i] to words ending with silent consonants /f/, /t/, /d/ and /s/ (columns 5 and 6 above). This appears to be due to some characteristics of the Chinese pronunciation system. The majority of the sound system of Chinese words are structured as a consonant-vowel complex. This means that Chinese words end with vowels instead of consonants. Some of the lecturers were observed adding a vowel at the end of those English words ending with a consonant, as influenced by their familiarity with Chinese pronunciation.

Through these excerpts it can be seen that the lecturers more or less depended on the relationships they could establish between English and Chinese in their pronunciation. As Ringbom argued, if the learner's L2 is closely related to the L1, prior knowledge of the L1 language will be consistently useful [55]. However, the data here reveal that although the two languages are very distant, and not much prior knowledge is relevant, the lecturers could

primarily depend on their perceived L1/L2 phonological connection, making pronunciation of their first language an essential aid, not a troublesome obstacle in their EMI teaching.

4.2.3 *Prior cross-linguistic knowledge*

In his language transfer theory Ringbom argues that transfer occurs between European languages such as English and French, and English and German whereas with a minimal relationship between Chinese and English there is a corresponding minimal language transfer in learning environments [55]. The transfer theory suggests that Chinese lecturers cannot draw on their Chinese linguistic heritage when using English to teach. However, data gathered in this research reveals that transfer does occur; indeed, it is a significant method of communication implemented by many EMI lecturers. Before the acquisition of correct forms (pronunciation, semantic meaning and syntax), lecturers were observed using comparable Chinese forms to ensure intended meaning was communicated. These transferred forms (for example, think – [sink], see Table 3) may sound wrong or strange to English speakers but observation notes indicate that they did not seem to bother the Chinese language background students. This might be due to teachers and students sharing the same L1: in such a situation both were absorbed in similar negotiation of L1 and L2 transfer.

4.3 *Translanguaging strategies in the EMI classes*

Translanguaging is known as “a pedagogical practice which switches the language mode in bilingual classrooms” [56] (p. 45). The usage of translanguaging strategies was found in these lecturers’ EMI class, to be particularly for the purpose of highlighting key points, for students’ comprehension, and lecturers’ meaning-making through negotiation of the two languages.

Table 4: Translanguaging to scaffold learning

EXCERPTS		FUNCTION
1	T: We have mentioned this in our last class. Table of coding. 编码的表	Emphasis
2	T: If we just use two variables, can you think about it? S: (no response) T: 想一想怎么用两个变量求值	Reiteration
3	T: How do we determine the interval of convergence for a power series? S: (silence) T: 当时我们讲的是....	Cluing
4	T: I don't know whether you finished your homework. Do you have difficulties? S: (silence) T: 有吗? S: 有。	Encouraging
5	T: This is ehhe... 这是随意性, 跟过程没关系。	Sense making

As excerpts above indicate, dynamic, overlapping and concurrent use of the two languages was noted. Code-switching between languages seems to arise through the unsystematic decision-making of lecturers in response to the content and difficulty of the English word/s or concepts. As Garcia argued, there appeared to be no clear-cut decisions or consistency around the hybrid use of the two languages [56]. Excerpts 1-4 suggest the lecturer emphasises a key point (Excerpt 1), reiterates the meaning (Excerpt 2), provides a clue (Excerpt 3) and encourages them for an answer (Excerpt 4). The switch of code (from English to Chinese) was strategic in scaffolding the students' learning. In Excerpt 5 (Table 4), the lecturer used Chinese to negotiate the meaning due to the absence of his English expression. It was a sense-making process. It was noted that the students preferred to respond in Chinese even when the answer could be as simple as 'yes'. This was despite their lecturers' English code (Table 4: Excerpt 4). According to Gutierrez, Baquedano-Lopez, & Alvarez, this was "affiliative" use of translanguaging [64] (p. 128). Namely, the students felt the sense of belonging and emotionally attached to their L1 and felt disconnected if they use L2.

Institutional understanding of EMI is that of ‘English-medium instruction’, rather than what is actually enacted in most classrooms: content-integrated language instruction (CLIL) [46]. However, analysis of these data indicates that rather than focusing on perfect English, in these content-based EMI classes, meaning-making and understanding of the content are the focus of these lecturers. Their English may not be perfect and their communications sometimes require reversion to their first language. In the early stages of implementing an EMI program, translanguaging should be encouraged as “a pedagogical practice” in the EMI class where the focus is on the information conveyed for optimum learning rather than the form of conveyance [56] (p. 45). The lecturers were fully aware that EMI programs should not seek for perfect but ‘good-enough’ English. For them producing graduates with complete subject knowledge is the mission of the course whereas students’ bilingual capability would be always secondary [46].

4.4 Pragmatic strategies used in the EMI classes

Data demonstrate that around 30% of lecturers fully developed pedagogical strategies in their English Instruction. This practical approach to teaching pursues logical explanation through connective words and conjunctions. The three types of strategies being frequently implemented are signposting, reasoning explanation and repetition. These have an improvisatory character and arise in response to circumstance rather than as prescriptive approaches to teaching. It needs to be noted that the majority of the group demonstrated isolated use of these strategies.

4.4.1 Structuring the learning through sequential signposts

Observers remarked on attempts by lecturers to trial new ways of working when they identified students being challenged by the EMI delivery mode. Structured signpost

strategies, such as those outlined below, were witnessed in use, as methods to ensure lecture content was more accessible to students.

Table 5: Sequential signposting

Excerpts	Codes
T1: “In the previous period we first did (X)..., then we did (Y)...” “Now we look at the improvement, ok?”	Previous, then, now
T2: “So this explains the idea I just mentioned”. “I will explain the procedure step by step...”	Just mentioned, procedure, step
T3: So, our last example, also one of the most important examples...”	Last
T4: “This is the first knowledge point in this class. The next issue we are going to explain is when to use single and when to use double quotation marks”	The first, the next
T5: “To some extent it is very difficult to understand this. We will discuss this later”.	Later
T6: “We mentioned this is our last class”. “At the end of the last class we talked about scope sequences for special characters”. “These are all we learned in the last class. Now we are going to learn some new knowledge.”	Last, end, now

As these data show, the lecturers highlighted the steps or procedures or transitions in the content by ‘signposting’ the sequence. ‘Prospective signalling’ (pointing forward in the discourse), and ‘retrospective signalling’ (referring to prior discourse) are evident in the data [26] (p. 955). The lecturers signposted sequential order to students, relating what they had learned to what they should expect to learn in future sections of the lecture. This strategy is used to guide students’ attention to important or difficult concepts, and hence lexical signposts such as “difficult” and “important” are applied. Considered use of techniques of this kind can be effective. Not only do they allow the teacher to provide coherence, but they

also allow students to feel part of a process in which both subject matter and language of delivery are in sync to assist their learning.

4.4.2 Reasoning the explanation

It was observed that majority of the lecturers, when explaining concepts, formulae and procedures, did so through describing a cause-and-effect relationship, often between concepts or experiences (see Table 6). This strategy enabled students to follow the logical structure of the content and thus increase thinking capability.

Table 6: Reasoning the explanation

Excerpts	Codes
T1: "...that's why we should..."	why
T2: "So how can this happen? ... Let's look here (pointing at a formula on the PPT). We have the formula (xxxx). If you start from (X) you will get (Y)."	So, how
T3: "How should we select...?" (Silence...) "How?" ... (No answer)	How
T4: "This is very important! Let me explain it. When you ..."	When

4.4.3 Repetition strategy

Repetition as a key strategy was observed in the current teaching repertoire of the lecturers. Earlier research has found that repetition can be a critical strategy in an EMI class.

Table 8: Repetition strategy

<i>N</i>	<i>Excerpts</i>	<i>Codes</i>
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Excerpt 1	T: which one do you choose? Which one? Which? I like to hear your voice.	Repeating to encourage students to give their opinion
Excerpt 2	T: how should we select xxx? How? S: (no response) T: This is very important! Very important!	Repeating to attract students' attention
Excerpt 3	T: what are the types of distribution we learned last week? S: Uniform, normal and Chi-square. T: Yes. The uniform distribution, the normal and the Chi-square, and F distribution.	Repeating for reinforcing the learning

Björkman advocates for “repetition for emphasis ..., repetition of disfluencies and repetition of parts of others’ utterances” to reinforce both language and subject knowledge learning [26] (p. 958) As discussed earlier, minimal teacher-student interaction was observed in most of the EMI classes, and only very occasionally did students respond to lecturers’ questions. This made repetition particularly important strategy in teaching as the lecturers received little response from students. Data demonstrate that repetition was employed to raise students’ attention, to encourage students to give their opinion, and to reinforce key points for learning.

4.4.4 Reasoned structure of teaching content

From a linguistic perspective, Björkman argues that a highly proficient language speaker does not necessarily make an effective teacher [26]. To be effective a teacher needs to employ appropriately pragmatic educational strategies. Data demonstrate that pragmatic strategies were used by lecturers to reduce misunderstanding. Introducing new content was signalled by sequential words, or important information were often accompanied by cause-effect words. Besides, to assist with understanding differences and similarities between ideas, clear and comparative conjunctions were employed.

These findings are echoed by Meyer and Ray's mapping of logical structure of text [65]. They describe six categorical relationships between ideas in a written text: comparison, problem-and-solution, causation, sequence, collection, and description. Meyer hypothesised that using connective words and conjunctions that communicate the logical structure within a text would provide effective mnemonic hooks that facilitate learning [66]. In these lecturers' EMI (oral texts), sequence, causation and comparison were found to be the main strategies to help learners develop and process information into organised schemata. One argument that can be made is that the majority of lecturers in this study demonstrated expertise in their subject area and mapped their teaching content with explicit logical relationships between ideas, concepts and formulae. This is a distinct advantage for teachers working through EMI. It means they are organising content in a rational way and as this work can then be taken further through EMI to lift students' bilingual abilities and opportunities through the international power of the English language.

5. Conclusion

To supplement methods employed in the existing research (e.g. survey, interview and document analysis), this study was purposively designed, from a pedagogical as well as linguistic perspective, to critically collect data from various EMI classes through observation. It examined lecturers' actual practice and explored possible impact factors through a multi-theoretical perspective. This research provided some key findings that may enable EMI lecturers in the field to reflect on their practice and make adjustments in their future practice. This research found that Chinese background EMI lecturers' classroom English is strongly influenced by their first language. Specifically, their English pronunciation, the structure of their articulations, and semantic meaning expressions are all to some extent shadowed by their first language, and seemingly their students are not bothered by their language features

as such. This implies that imperfect English does not stop EMI lecturers from making an effective teacher, and it suggests that EMI lecturers shouldn't be overwhelmed by their accented English and grammatical errors.

Beyond language, some EMI lecturers demonstrated ability to use key pedagogical strategies. They relied on translanguaging when short of English expressions; they used signposting language when structuring the movement and teaching process. When explaining complicated content, some of them were able to provide logic or reasons to map their illustration. It can be argued that these are advantageous strategies as the intention was to make content received well by students. However, the majority of the participant lecturers did not demonstrate a full use of these strategies. The result suggests future EMI training programs can reinforce lecturers' capability in this aspect for teaching improvement.

Further, a universal trend from the data demonstrates that these Chinese background lecturers and their students formed a unique 'dynamic' relationship. That is, there was little interaction in class but active student-lecturer dialogue after class. This is apparently related to the local education system or culture as it makes good sense when interpreted using dimensional paradigm on teaching and learning between cultures. This implies that teaching through EMI is a contextualised pedagogical issue, and the pedagogy is inevitably influenced by the local culture in which the lecturers are positioned in relating to their students.

Like any other research, this study has its limitations. Firstly, this research didn't include interview data from students, thus in terms of students' silence in class, it is hard to distinguish the two possible reasons: cultural habit or English barriers. Further, for some of the findings such as un-reciprocal in-class interaction and one-on-one dialogical interaction after class, the study did not encompass a comparison with other types of classes to determine whether these characteristics are only shown in EMI class or these could be found in all

classes in general. Thus, this study suggests future research may consider including and comparing observation data from classes delivered by lecturers in English and Chinese Medium Instruction.

Ethics Approval: The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of Western Sydney University (Project identification code: H13012). All the original data (20 hours of audio recording) are saved at the Library of Western Sydney University.

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