

Exploring the roles of English and Arabic in English-medium higher education programs in Saudi Arabia

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Abstract

Higher educational institutions across the globe have been adopting English as a medium of instruction (EMI) (Brown & Bradford, 2017; Dearden, 2014; Lasagabaster, 2022). Within Arabian Gulf countries, EMI's growth has sparked concerns of weakening Arabic language skills and Islamic identity (Abdel Latif & Alhamad, 2023). Some opposition to EMI is found in Saudi Arabia, largely due to students' limited English proficiency (Al-Kahtany, Faruk & Al Zumor, 2016; Louber & Troudi, 2019). In effect, preparatory programs that involve intensive English language study are commonly used as a language support model (Curle, Jablonkai, Mittelmeier, Sahan & Veitch, 2020; Macaro, Curle, Pun, An & Dearden 2018). Nevertheless, previous studies from Saudi higher education indicate that translanguaging (Alanazi, 2021; Al Makoshi, 2014) and applying the content and language integrated learning (CLIL) approach (Eltoum, 2019) can minimize language barriers in EMI programs. These findings spark questions concerning the roles of English and Arabic in institutional EMI support strategies. To better understand how both languages can be applied to strengthen student outcomes and enhance EMI implementation, this study gauged the views of both teachers and graduates from Saudi EMI programs. This study employed a mixed-methods approach combining statistical and thematic analysis. Questionnaires with both Likert-scale and open-ended items were completed by 150 teachers and 150 graduates from Saudi institutions. The results confirm that language-related barriers represent the foremost challenge in EMI programs and that expanding the roles of English and Arabic can improve student outcomes. In effect, institutions can reinforce their language support strategies by applying bilingual language policies, using a language-focused approach, and integrating supplementary English language provisions. The findings suggest that incorporating such a comprehensive strategy can enhance EMI implementation by promoting short-term and long-term outcomes while addressing students' culture and needs.

Keywords: *English as a medium of instruction, content and language integrated learning, language policy, language support, teacher development*

Introduction

English as a medium of instruction (EMI) has become increasingly popular in higher education systems worldwide (Brown & Bradford, 2017; Dearden, 2014; Galloway, Numajiri & Rees, 2020; Kirkpatrick, 2011; Lasagabaster, 2022). The growth of English-medium programs can be explained by pressures to adopt internationalization strategies meant to increase collaboration between institutions and organizations. A key step in this strategy is to adopt EMI in lesson delivery and research (de Wit & Altbach, 2020) since the English language is dominant in academia (Lasagabaster, 2022; The British Council, 2013). In turn, adopting EMI facilitates the recruitment of international faculty and scholars, integration of an international curriculum, promotion of global citizenship, and establishment of partnerships (de Wit, 2019; de Wit & Altbach, 2020; Lee, 2015; Maringe, 2010). For students, EMI is believed to improve English language development, expand knowledge of the target culture, and open academic and career-related opportunities (Dearden, 2014).

Following these trends toward internationalization, EMI has been implemented in the Arabian Gulf. For learners, the approach is thought to build content matter knowledge, English language proficiency, and English communication skills while supporting efforts to retire rote learning methods. Ultimately, this development is meant to promote students' employability and national efforts to localize employment (Deveci, Ayish & Midraj,

2023). While EMI is associated with academic and career-related benefits in this context, implementing this approach in Saudi Arabia poses unique obstacles. Arabic is a cherished language in the region, and there are concerns within Arabian Gulf countries regarding diminishing Arabic language and literacy skills, adherence to Islamic identity, and Arab culture (Abdel Latif & Alhamad, 2023). EMI is also found to pose a barrier to achievement in content courses, spurring calls to change the language of instruction to Arabic (Al-Kahtany, Faruk & Al Zumor, 2016; Louber & Troudi, 2019). On the other hand, previous studies have shown that teachers have been integrating Arabic (Al Makoshi, 2014; Alanazi, 2021) or applying the content and integrated learning (CLIL) approach to make the content more accessible to learners in EMI classrooms (Eltoum, 2019).

The literature indicates that expanding the roles of Arabic and English in EMI programs through L1 translanguaging or integrating English language objectives may foster students' comprehension and outcomes. However, such practices represent coping mechanisms or experimental methods rather than official institutional strategies. This study aims to expand on previous research by investigating the difficulties in implementing EMI and offering suggestions to enhance institutional support in these programs. To do so, the research questions address proficiency-related challenges, stakeholders' views on the roles of English and Arabic in EMI, and additional recommendations to improve EMI programs. Subsequently, this research advances the literature on language support in EMI implementation. As EMI continues to grow, the findings inform strategies for implementing EMI in contexts in which this approach may be at odds with students' cultural adherence or limited English language proficiency.

Theoretical background

EMI and its institutional implications

EMI involves using "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" (Dearden, 2014: 4). When implementing EMI, institutions must deliberate on the roles of English and the learners' L1 in the support model applied, the approach used in EMI programs, and language policies applied within classrooms.

Institutions often integrate a model of language support to ensure students are prepared to learn content in English, or they may offer language provisions throughout EMI programs. One model involves preparatory year programs, in which students complete an intensive English program before beginning EMI courses (Curle, Jablonkai, Mittelmeier, Sahan & Veitch, 2020; Macaro, Curle, Pun, An & Dearden, 2018). The concurrent support model uses English for academic (EAP) or specific purposes (ESP) courses that are taken simultaneously with EMI courses to aid students as they cope with the demands of English in their content courses. While the previous models focus on English as a second or foreign language to be developed, another model only employs the language as a means to access EMI. The selection model uses standardized English tests to confirm that students have the necessary English proficiency to begin EMI. Finally, the Ostrich model describes when institutions take no action to support EMI students (Curle et al., 2020).

Within EMI programs, institutions may apply English as solely the medium for teaching and learning or a language to be explicitly developed within content courses. Generally, gains in English proficiency represent a by-product of the approach, yet there is no explicit focus on language development (Curle et al., 2020; Lasagabaster, 2022). On the contrary, the content and language integrated learning (CLIL) approach includes both the subject matter and language within its learning goals (Coyle, Hood & Marsh, 2010; Dalton-Puffer, 2011). In addition to addressing language, this approach also incorporates methodologies and theories related to second language acquisition, notably communicative language teaching and task-based instruction (Dalton-Puffer, 2007). While EMI and CLIL differ regarding the role of language in instruction, there is a middle ground between the two approaches. CLIL-ized EMI involves an overt focus on language development as a complementary or supplemental feature within content courses (Hu, 2023; Pérez Cañado, 2021). This approach focuses on teachers' ability to aid students in understanding content knowledge and using disciplinary language in classrooms (Moncada-Comas &

Block, 2021). While CLIL-ized EMI may seem like an ideal midpoint between CLIL and EMI, there are practical challenges in implementing the approach, such as appropriately balancing content and language objectives in lessons, negotiating content instructors' roles and sense of identity, and standardizing institutional language policies and practices (Hu, 2023; Moncada-Comas & Block, 2021).

Lastly, institutions must decide on the roles of English and students' L1 in language planning and policies. Full EMI is used when all elements of instruction are in English. In contrast, partial EMI involves the planned delivery of some elements in the local language (Pecorari & Malmström, 2018). Even within full EMI programs, institutions need to develop language policies that outline the terms for applying students' L1. Three main types of policies can be implemented in these programs. Monolingual policies involve the exclusive use of English in contexts in which students' L1s are seldom used. Bilingual policies involve applying English and a national language, and trilingual policies are described by the use of English along with national or regional languages (Risager, 2012).

Although stricter monolingual policies may be expected in EMI, there has been greater acceptance of language mixing in education (see Coleman et al., 2018) due to both social and practical reasons. Implementing EMI may cause the local language or its speakers to become stigmatized and face epistemic injustice (Sah & Li, 2024). In the Gulf region, EMI may disadvantage students who previously had limited exposure to English-medium curriculum in public schools or a lack of linguistic capital in their homes (Hopkins, 2023). Language proficiency also influences the complexity of learning content in another language, especially for students who have low levels of language proficiency (Lasagabaster, 2022). In effect, their success in English-medium programs can be negatively impacted (Curle et al., 2020). Considering these factors, previous findings have shown that EMI classrooms typically integrate students' L1 to aid comprehension or communication (Lasagabaster, 2022; Curle et al., 2020). These practices can be defined as translanguaging, which describes the "act performed by bilinguals of accessing different linguistic features or various modes of what are described as autonomous languages, to maximize communicative potential" (García, 2009: 140). Translanguaging shows greater acceptance in EMI (Lasagabaster, 2022), and this strategy can inspire a sense of linguistic security and identity and promote multilingual education (García, 2009). At the same time, instructors may avoid translanguaging due to fears of alienating international students, efforts to conform to institutional language policies, and limited teacher training in language-aware practices (Curle et al., 2020).

EMI implementation in Saudi Arabia

Within Saudi higher education, EMI has become ubiquitous. Previous studies have estimated that 50 (Macaro et al., 2018) to 100 (Deveci et al., 2023) Saudi tertiary-level institutions have adopted EMI. EMI is widely implemented in majors related to engineering, medicine, and computer science (Elyas & Al-Hoorie, 2024) and is being considered in other majors such as business (Barnawi and Al-Hawsawi, 2017). As these provisions continue to grow, so have concerns regarding the Arabic language's domain loss along with a weakened sense of cultural identity (Abdel Latif & Alhamad, 2023; Hopkins, 2023). Additionally, EMI is associated with barriers to comprehension and achievement. Saudi students' language proficiency ranks very low on a global scale (English First, 2023). At the tertiary level, they often lack preparation for EMI and show limited language skills (Phan & Barnawi, 2015).

Previous studies have highlighted both support for and opposition to EMI in Saudi higher education. A study from Al-Jarf (2008) shows approval for EMI in programs related to medicine, pharmacy, engineering, science, nursing, and computer science. The majority of the respondents believed English to be a superior language and associated the language with modernity and opportunities. On the other hand, students and teachers in a study conducted by Louber and Troudi (2019) described a preference for EMI. They reported pedagogical and practical barriers in implementing EMI as a result of students' limited English proficiency. In turn, teaching and learning was largely carried out in Arabic. Similar challenges were reported in Al-Kahtany's (2016) study, and students

advocated for changing the medium of instruction to Arabic. Students expressed their right to study content in their native language, spurring questions related to linguistic rights and hegemony within the institution.

Considering this integration of Arabic in EMI, two studies highlighted the use of coping strategies to aid students. In Alanazi's (2021) study, teachers and students described comprehension-related challenges, difficulties with discipline-specific writing, and limited fluency in communication. To assist students, coping strategies such as code-switching in Arabic and English language simplification were applied. Moreover, Al Makoshi (2014) explored teachers' use of code-switching at an EMI-oriented medical college. Her analysis of instructors' verbal techniques showed how Arabic was used to promote classroom management and cohesion in addition to content comprehension. This technique also facilitated communication, covering dense content, and student participation. Overall, both studies suggest that integrating students' L1 may ease language-related challenges and improve content learning.

Rather than investigating the potential use of Arabic in EMI, one study concentrated on the impact of the educational approach applied. Eltoum (2019) explored the effect of implementing CLIL within an introductory English-medium algebra course. Her findings show significant differences in the students' conceptual understanding of the content objectives, as students' test scores increased. She also found linguistic gains, but the test results were not significant. Eltoum described a positive learning environment that focused on active and deep learning within the CLIL classroom. Hence, applying CLIL may promote student achievement in introductory EMI courses.

Previous studies show support and opposition for EMI and describe how integrating Arabic reinforces students' comprehension. Furthermore, Eltoum's (2019) study indicates how student outcomes can be strengthened through employing a language-focused approach in EMI courses. Theoretically, expanding the role of Arabic or English can make content more accessible to learners in EMI programs. However, these practices represent coping mechanisms or experimental methods rather than aspects of an official institutional language support strategy. This research aims to expand upon these studies to better understand the views of teachers and graduates on the roles of English and Arabic in EMI programs, then outline suggestions to enhance institutional support strategies. More specifically, this study aims to confirm language-related barriers students face in EMI, investigate views on translanguaging, explore the potential impact of applying a language-focused approach, and gather opinions on other strategies to improve EMI programs. In effect, the findings are meant to inform recommendations to improve EMI implementation by balancing student support, outcomes, and culture.

Methodology

This research aims to investigate stakeholders' views on the roles of English and Arabic in EMI programs within Saudi higher education and chart recommendations for enhancing language support. To meet these aims, the following research questions were posed:

1. What are the main challenges that students and teachers face in EMI programs?
2. Do teachers and graduates believe that integrating Arabic into EMI programs can improve student outcomes?
3. Do teachers and graduates believe that implementing a language-focused approach in EMI programs can improve student outcomes?
4. What additional strategies do teachers and graduates recommend to improve EMI programs?

This study reflects a mixed methods approach in which questionnaires and thematic analysis were used. Responses to the Likert-scale and open-ended questionnaire items contributed both quantitative and qualitative data that were subsequently analyzed. The questionnaires were completed by teachers and graduates from public universities and colleges, private universities and colleges, and vocational institutions.

To explore the research questions, the mixed-methods design was most effective. Because qualitative and quantitative data from various sources were gathered concurrently, the design reflected triangulation (Ivankova & Creswell, 2009). This design facilitated comparisons in the data (Almeida, 2018; Ivankova & Creswell, 2009), as the findings from the quantitative data were cross-validated with the qualitative findings. Stakeholders' free responses explained the statistical trends found in their Likert-scale responses while offering context regarding any differences found by stakeholder type. Overall, a deep understanding of the four research questions could be achieved (Hesse-Biber, 2010), and thoughtful recommendations could be made in light of the findings.

To carry out this research design, a questionnaire was used as the data collection tool.² The items reflect a few questions used from a larger questionnaire that explored the prevalence, difficulties, and disadvantages associated with EMI in Saudi higher education. The questionnaires can be found in Appendices 1 and 2. The Likert-scale items were divided into the following sections: informed consent and demographic questions, language-related challenges, views on using Arabic, and attitudes toward using a language-focused approach. The questionnaire items regarding challenges focused on students' limited language proficiency. Concerning Arabic's role in EMI, these items addressed translanguaging in content delivery and resources. Lastly, the questions about a language-focused approach were prefaced by items that defined CLIL and gauged current CLIL provisions in the full questionnaire. Since teachers may not have been familiar with CLIL or CLIL-ized EMI, the items focused on the potential impact of applying a general language-focused approach. The open-ended questions addressed challenges in implementing EMI and recommendations to improve EMI programs. All items were available in English and Arabic to ensure respondents' comprehension.

The two questionnaires were pre-tested by three experts in the field, then piloted by 15 teachers and 15 graduates who had taught in or graduated from Saudi EMI programs. Native English speakers and Arabic speakers piloted the questionnaires to ensure that questions in both languages were comprehensible. After editing the items in line with their feedback, the final questionnaires were delivered to 150 teachers and 150 graduates during the period from November 2022 to November 2023. The teachers and graduates must have taught in or completed an English-medium program within the past five years. Rather than collecting data from students, graduates were recruited because their opinions offered insight into the impact of EMI both academically and in their experience post-graduation. The stakeholders were recruited through the researcher's connections and social media sites, as those meeting the inclusion criteria were invited to participate.

To provide a snapshot of EMI throughout the Kingdom, the recruitment process considered institution type, gender, and location. Since college and universities are largely gender segregated, recruiting roughly equal numbers of male and female participants reflected student enrollment and ensured that both male and female institutions would be represented (UNESCO, 2026). Efforts were made to recruit participants from a variety of provinces and institutions so that Kingdom-wide trends could be observed. Quota sampling was used to recruit 50 participants from public universities and colleges, private universities and colleges, and vocational institutions. This sampling plan was advantageous since all institution types could be represented, and the plan reflected the growth in vocational education and privatization of educational institutions (Knight Frank, 2021). Accordingly, the general findings and recommendations would apply to long-term national higher education planning. The data allowed for country-wide trends to be established, and disaggregation was done by stakeholder type to compare the perspectives of teachers and graduates throughout the Kingdom.

The closed-ended questions used a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The responses to these questions provided quantitative data. This data was analyzed according to statistical measurements, including the mean and standard deviation. To assign a description on the scale to the overall

² The questionnaires were approved by the University of Alcalá's ethics committee for research and animal experimentation (approval number CEID/2022/3/046). Participants completed and signed an informed consent page within the questionnaire before answering the items.

means found, Table 1 shows how five equal ranges of 0.79 or 0.80 from 1 (the lowest score) to 5 (the highest score) were matched to the statements. After, unpaired t-tests were conducted to calculate the p-values and understand if there were significant differences between the teachers' and graduates' responses.

Table 1: The mean ranges and their descriptions for the Likert scale

Likert-scale values	1	2	3	4	5
Value on agreement continuum	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Mean range	1.0-1.79	1.80-2.59	2.60-3.39	3.40-4.19	4.20-5

For the open-ended questions, manual coding was used to classify the responses into emergent themes. All responses were pasted into an Excel spreadsheet. Codes were entered into columns next to the texts, then Braun and Clarke's (2021) method for thematic analysis was employed. The researcher reviewed the data in depth, created initial codes, and sought out themes. After reviewing the initial themes, they were finalized with definitions and names. Lastly, a report was produced regarding the final themes and the frequency of the references. These codes represented the main themes, and the number of references to the themes was found in order to quantify the data. The results section integrated this data along with example texts that demonstrated the themes.

Results and discussion

Demographics

Table 2 shows participation by gender and location. Considering the gender of teachers and graduates, similar numbers of male and female teachers and graduates participated. This ensured that both the male and female branches of institutions were represented. As for the provinces, the percentages of participants from both graduates and teachers are similar. This data reflects the views and experiences of respondents from provinces with large student populations and numbers of institutions (Knight Frank, 2021) while also representing stakeholders' voices from other provinces.

Table 2: Participation by gender and location

Gender	Teachers	Graduates
Male participants	85	60
Female participants	65	89
Other/N/A responses	0	1
Province	Teachers	Graduates
Riyadh	33	33
Mecca	27	31
Medina	29	34
Eastern province	38	33
Qassim	7	8
Other	16	11

As for the participation by discipline (shown in Table 3), the number of teachers and graduates representing different types of programs is similar. The top programs relate to IT, business and hospitality, engineering, and health. These majors are common disciplines taught in English (Alseghayer, 2012; Rahman & Alhaisoni, 2013) or

are programs with increasing enrollment (Knight Frank, 2021), indicating that the sample accurately represents the population of EMI graduates and teachers.

Table 3: Participation by discipline

Discipline	Teachers	Graduates
Information Technology	26	44
Business and hospitality	51	41
Natural Sciences	12	4
Engineering	12	33
Health	25	11
Technical	6	9
Law	0	2
Humanities	9	4
No answer	0	2

Table 4 shows the reported English proficiency levels of both teachers and graduates. When reviewing graduates' initial and current levels of English, some stark differences can be seen. Initially, 44.7% of graduates had a level of English proficiency below professional working proficiency, and only 13.33% reported current levels below professional working proficiency. This data indicates gains in proficiency as a result of EMI or experiences after graduation. Furthermore, almost no teachers showed a level below this proficiency, validating their ability to report on students' English levels and progression.

Table 4: Reported English proficiency levels of teachers and graduates

English proficiency level	Current level Teachers	Initial level Graduates	Current level Graduates
0 – No proficiency. My knowledge of language is nonexistent or limited to a few words.	2	10	1
1 – Elementary proficiency. I know how to structure basic sentences.	0	29	6
2 – Limited working proficiency. I can have limited social conversations and understand basic commands.	1	28	13
3 – Professional working proficiency. I can contribute to the workplace but need help with more advanced language.	7	28	23
4 – Full professional proficiency. I can participate in advanced conversations at an advanced level but may have some misunderstandings or occasional mistakes.	73	31	68
5 – Primary fluency / bilingual proficiency. I was raised speaking the language or have spoken it long enough to become proficient in it.	67	24	39
Mean value	4.33	2.75	3.79

Views on language-related challenges

The first set of questions examined the language gap, which refers to the gap between students' initial levels of English language proficiency and the level needed for content mastery. Table 5 shows the mean values and standard deviations for the responses.

Table 5: Teachers' and graduates' responses to items related to the language gap

Item number	Question text	Mean	Standard deviation
18 T	The shift of medium of instruction from Arabic at school to English at university was very challenging for my students.	4.27	0.91
19 G	The shift of medium of instruction from Arabic at school to English at university was very challenging for me.	3.09	1.36
P-value		5.69E-16	
19 T	Teaching students who had not previously taken secondary courses through English was very challenging for me.	4.26	0.82

Reviewing the data from teachers, the mean values indicate strong agreement that the transition to EMI represented an obstacle for both graduates and teachers. The lower standard deviations in their responses reflect similar responses despite differences in institutions or programs. In contrast, graduates held a neutral view regarding the impact of the language gap. The p-value indicates a significant difference, further demonstrating the differing views between teachers and graduates concerning this barrier. Also, graduates' standard deviation is high, signifying a greater variety of responses. This result may be related to factors such as the individual's initial level of language proficiency, institution type, or program type. For instance, students with lower initial proficiency levels or who enrolled in institutions or programs with higher requirements for language skills may have struggled more with the language gap.

When examining the free responses that addressed challenges in implementing EMI (see Tables 6 and 7), the main themes largely reflect language-related shortcomings. Both groups of stakeholders mention difficulties with students' limited proficiency, language skills, and vocabulary knowledge.

Table 6: Themes and frequency of teachers' responses regarding challenges in implementing EMI

Theme	Keywords and phrases	Total references
English proficiency	Low level, secondary, national, elementary high school, not taught well, weak, lack of preparation, issues understanding English/lectures	43
Language skills	Weak reading/ writing/listening/speaking skills, pronunciation, not professional, vocabulary, terminology, one-way/poor communication, communication gaps/challenges, hesitate to speak	39
Content	Lack of understanding, difficult to understand, don't grasp content/concepts/material don't get the full meaning, simplify, water down, simple/basic content/language, longer time to explain/adapt/understand, delivery in different ways	29
Attitude	Attitude, behavior, weak passion, low attendance, lack of motivation/ commitment, disruptive, not focused, no interaction, resistance, absenteeism	15

Arabic	Translation, use of Arabic, overuse of native language	11
Lack of streaming	Different levels, mixed ability, fast, slow, no streaming	5
Achievement	Poor grades, low achievement, dropping out	5

Table 7: Themes and the frequency of graduates' responses regarding challenges in implementing EMI

Theme	Keywords and phrases	Total references
None	No challenges, N/A, none	40
Language skills	Reading, writing, listening, speaking, pronunciation, grammar, communication	27
Vocabulary	Terms, terminologies, vocabulary, meaning	26
Gap	Adapting, time, at first, level, low, change, school, lack	24
Applying language	Practice, use of Arabic, continuity, lifestyle, mastering, continuing, environment	12
Comprehension	Translation, understanding, concepts,	9
Professors	Lecturers, professors, Accents, native speakers, lacking English, teaching style	8
Achievement	Grades, assessments, tests	5

Teachers acknowledge the language gap and describe additional challenges spurred by students' limited English proficiency. One instructor describes how "[s]tudents found it very difficult to grasp basic concepts. This resulted in poor class performance and lack of motivation to learn" (TQ.1.42)³. Because students struggled to understand concepts in English, instructors faced issues with pacing due to time-consuming explanations and attempting to "maintain a healthy teaching environment so that no student gets embarrassed" (TQ.1.66). Moreover, a few responses showed frustration due to limitations in designing lessons and integrating higher-level tasks: "Asking students to answer one question in class is an easy exercise. Asking students to get involved in critical thinking and writing long essays is another level. The challenge I faced was regarding this latter" (TQ.1.109).

On the other hand, the responses from graduates do not reflect the same level of variety and frustration as the teachers' comments. The most common theme amongst the graduates (with 40 responses) is "none." When reviewing their responses, they describe the temporary nature of the language gap. One graduate explains how "[a]t the beginning it was a bit hard to understand very well and to communicate professionally as my language wasn't advanced" (GQ.1.93). Even for students who had lower levels of English proficiency when beginning EMI courses, their responses reflected acceptance of the importance of EMI and a sense of resolve: "The main problem is I started from scratch comparing to surrounding students who were better than me. However, my desire to learn the language to continue on the computer science was a must to succeed as all the materials were purely English" (GQ.1.74). Thus, while both types of stakeholders agree that students' insufficient English competence is a main obstacle in implementing EMI, graduates view this challenge as a short-term issue.

Views on using Arabic

Table 8 shows the responses from teachers and graduates concerning the benefits of using Arabic in EMI. The mean values from the teachers' responses indicate agreement; however, most of the values from the graduate

³ The anonymized coding reflects the questionnaire type (graduates or teachers, the open-ended question number, and the response number)

data reflect neutrality. All items also show significant differences based on the p-values. Hence, the data reflects greater support from teachers regarding the integration of students' L1. Furthermore, the standard deviations of the teachers' results are lower than this value in the graduates' data, indicating that the graduates had more varied opinions. This may be due to different experiences based on their initial language levels (see Table 4), as graduates who began their programs with lower levels of English may have preferred the greater integration of their L1.

Table 8: Teachers' and graduates' responses to items related to the benefits of using Arabic in EMI

Item number	Question text	Mean	Standard deviation
20 T	If the assessments were in Arabic, I believe that my students would have gotten higher grades in my courses.	3.56	1.16
20 G	If the assessments were in Arabic, I believe that I would have gotten higher grades in my courses.	2.91	1.45
P-value		4.87E-05	
21 T	If Arabic were used in lesson delivery, I believe that students would better understand the concepts taught in my courses.	3.72	1.08
21 G	If Arabic were used in lesson delivery, I believe that I would have better understood the concepts taught in my courses.	2.99	1.23
P-value		2.49E-07	
22 T	My students had difficulties understanding the course content because the English level of the materials was too advanced.	3.44	0.93
22 G	I had difficulties understanding the course content because the English level of the materials was too advanced.	2.35	2.21
P-value		1.23E-15	
23 T	Teaching my classes in both Arabic and English was more beneficial for students than only teaching in English.	3.92	1.11
23 G	Teachers using both Arabic and English in classes was more beneficial for me than only learning in English.	3.28	1.29
P-value		2.80E-05	

As for the free responses regarding challenges (see Tables 6 and 7), teachers referenced content comprehension more often than graduates. For Item 22, Graduates disagreed that English-medium materials represented a barrier. In fact, one response describes how "[t]he subject would have been of the same quality if I had studied in my mother tongue" (Author's translation GQ.1.45). Since graduates see the language gap as a temporary problem, their responses may reflect beliefs that Arabic is only needed for language support in introductory classes. Because teachers recognize language-related challenges as a larger obstacle compared to graduates, they promote the more general use of Arabic throughout EMI programs.

Considering recommendations for improving EMI (see Tables 9 and 10), both graduates and teachers reference changes in language policies in their free responses. Graduates do not recommend changing the language of instruction to Arabic. In fact, they request English-only policies, native English-speaking teachers, and additional English classes alongside individual and national efforts to improve their language development. Their views indicate a complete lack of opposition to EMI, perhaps due to established assistance from translanguaging practices (as shown by the data from Item 23 G) and few challenges faced in their later years of study within these programs. At the same time, graduates are sympathetic towards their classmates who had limited exposure to

English in their schooling. One graduate explains how “[s]ome of the students have a hard time understanding the course being taught in English as they haven’t learned the language from a young age so they will face difficulties” (GQ.1.61). Perhaps as a means to assist these students, a few responses suggest using Arabic-medium aids such as vocabulary lists and parallel Arabic-medium content.

Table 9: Themes and frequency of teachers’ recommendations for improvement in EMI programs

Theme	Keywords and phrases	Total references
Language support mechanisms	Simplify/simplified courses, support classes, more often/courses, beginning courses, language courses, preparation year, intensive English courses, foundational level, streaming, ESP, CBI, EAP, vocabulary, reading, writing, listening, speaking, English skills, stream	63
Methodologies	Participate, presentations, discussions, practice, hands-on, real conversation, communication, focus on speaking, engagement, Situational, realia, technology, PBL, Practical English, assignments, examples, exercises	23
Language policy	Arabic, elementary, school, test, bilingual, immersion/technique, admission test, assessments	21
Resources/aids	More resources, international standards in resources, language aids, definitions, recorded lectures, international and local cases, companion websites, industry experts, appropriate textbooks, diverse materials, resource development, images, videos	15
Technology	Technology, search	6

Table 10: Themes and frequency of graduates’ recommendations for improvement in EMI programs

Theme	Keywords and phrases	Total references
Methodology	Skills, reading, writing, listening, speaking, materials, resources, vocabulary, good, basic, conversations, practice, intensive, interaction, simple, communication	52
Institutional policies	Professors, English-only, English and Arabic, accents, courses, strict, occupational	51
Individual efforts	Practice, conversation, homework, assignments, daily life	21
National efforts	Elementary, secondary, high school, strong foundation, from early ages, young, application	9

While some teachers support English-only policies, others promote bilingual policies. The variation in their responses suggests that teachers advocate context-specific solutions that align with their students’ differing levels and needs. One response explains how a one-size-fits-all policy may not be applicable:

“I believe there should be less focus on standardizing syllabi and assessments. . . . In general, we have qualified instructors, but they aren’t given a free hand to adapt the syllabi to meet students’ needs” (TQ.2.31). In addition, teachers’ free responses encourage employing admissions tests and offering additional English language courses. Their requests reflect expectations for language development at the tertiary level before students enroll in EMI courses and in tandem with content courses. Alongside these additional provisions, some teachers still

recommend Arabic-medium assistance: “By supporting [students] with other courses that focus on academic writing and daily English language activities, and by using both languages English and Arabic as content and in teaching to break the boarder between the two languages” (TQ.2.56). Despite some differences of opinion between graduates and teachers on language policy, both acknowledge the benefit of dedicating more space to Arabic in EMI courses while expanding English language provisions.

Views on applying a language-focused approach

The data related to teachers’ and graduates’ responses concerning the potential effect of applying a language-focused approach is shown in Table 11. Both types of stakeholders agree or strongly agree with the items, reflecting their support for this approach. Item 24, which addresses minimizing classroom-related challenges, has the lowest mean among both teachers and graduates. The p-value indicates a significant difference only for this item, signifying a divergence in opinions regarding the short-term impact of the approach. Due to graduates’ experience in their postgraduate studies or careers, they may believe that the long-term benefits of employing a language-focused approach surpass the short-term advantages in the classroom.

Table 11: Teachers’ and graduates’ responses to items related to the potential use of a language-focused approach

Item number	Question text	Mean	Standard deviation
24 T	A focus on both language and content in English-medium courses can minimize classroom-related challenges.	3.92	0.93
24 G	A focus on both language and content in English-medium courses can minimize classroom-related challenges.	3.71	0.77
P-value		0.044	
25 T	A focus on both language and content in English-medium courses can support graduates’ future academic opportunities.	4.34	0.74
25 G	A focus on both language and content in English-medium courses can support students’ future academic opportunities.	4.18	0.72
P-value		0.059	
26 T	A focus on both language and content in English-medium courses can support graduates’ future career-related opportunities.	4.39	0.74
26 G	A focus on both language and content in English-medium courses can support students’ future career-related opportunities.	4.22	0.76
P-value		0.050	

As for minimizing the difficulties in EMI classrooms, the solutions seem to be more complicated. Both teachers and graduates’ reference institutional policies and methodologies as a means to improve EMI programs (see Tables 9 and 10). Teachers also request that institutions simplify content courses and offer additional language courses. A language-focused approach may represent a partial solution, especially early in a student’s EMI journey: “In the beginning level courses where course content is comparatively easier, the teachers should focus on the communication skills of students so that higher courses will be easier to understand when communicated in English” (TQ.2.55). Nevertheless, the results indicate that a more comprehensive strategy involving institutional and classroom-based language support is needed. The following recommendation concisely describes such a strategy: “Courses taught through English can be improved by enhancing teacher training, supporting student

language development, adapting course materials to suit students' language proficiency levels, and incorporating technology to supplement classroom instruction" (GQ.2.43). Consequently, the role of English would need to be adjusted both within content courses and in language provisions.

For academic opportunities (Item 25), teachers' responses show strong agreement, and their free responses regarding recommendations for improvement (see Tables 9 and 10) further explain this data. They address the importance of integrating more resources along with additional language classes, such as EAP and ESP courses:

Need for intensive English for Specific Purpose (ESP) programs at freshman year where ESP teaching teams should be liaise with subject matter experts (aka faculty members of the department will be teaching major-related courses to students to agree on the English language to be taught in the ESP course(s) and the students' major-related technical jargon to be included in the ESP course(s). (TQ.2.144)

Their responses suggest an aim to reinforce students' disciplinary language development, perhaps to prepare them for postgraduate studies in their fields. Meanwhile, both teachers and graduates strongly agree with Item 26, which addresses career-related opportunities. This agreement aligns with their recommendations for improvement. Responses from teachers and graduates describe teaching methodologies that emphasize practical learning and interaction, perhaps to develop key communication skills needed by employers. For instance, one graduate's response recommends a focus on speaking skills that would "[help] when you get in the workplace and you need to communicate many complicated topics to leadership in a simple and easy to understand way" (GQ.2.3).

Overall, the responses indicate that applying a language-focused approach may minimize language-related challenges while maximizing future opportunities for students. Therefore, both types of stakeholders acknowledge that changing the role of English in EMI courses from the language of instruction to an area of explicit focus may improve short-term and long-term outcomes.

Discussion

This study investigated the roles of English and Arabic in promoting student outcomes in EMI programs to recommend language support strategies to improve EMI implementation. Regarding research question one, the results confirm that students' limited English proficiency represents the primary challenge in Saudi EMI programs. Teachers highlight this obstacle and its impact on students' comprehension, which coincides with the findings from the literature (Alanazi, 2021; Al-Kahtany et al., 2016; Louber & Troudi, 2019). Nonetheless, graduates seem to view this language gap as a short-term phenomenon. Their responses align with the results of Alanazi's (2021) study, in which challenges related to students' limited language skills were found to be more prominent as students began EMI programs.

For research question two, stakeholders approve the continuation of EMI while expanding the role of Arabic. Considering language policy, both teachers and graduates acknowledge the benefit of using students' L1 in EMI. Teachers acknowledge that language barriers may extend past students' first year of study and impact their comprehension of the course content. Their acceptance of Arabic's role in EMI reflects the overall paradigm shift that is reducing the stigma associated with language mixing in educational settings (see Coleman et al., 2018). Simultaneously, the findings show overwhelming support for EMI along with demands for greater exposure to and opportunities to use English. The findings diverge from criticisms of EMI in the literature, which highlight issues related to social justice and the dominance of English (see Hopkyns, 2023). Moreover, graduates seem to downplay the challenges they faced in EMI classes and emphasize the advantages of these programs for their future opportunities. Given the trajectory of Saudi Arabia's economic growth and the need for English speakers in the labor market (see Kingdom of Saudi Arabia, n.d.), the practical benefits of learning content in English may outweigh the negatives related to a loss of language or culture. Hence, the results contradict Al-Kahtany et al.'s (2016) results, in which students believed that using Arabic as a medium of instruction was in the Kingdom's national interest.

Considering research question three, teachers and graduates believe in expanding the role of English in content courses by using a language-focused approach. They agree that explicitly focusing on English language development in content courses may minimize language barriers. Their responses align with beliefs that CLIL-ized EMI can promote students' language acquisition and their understanding of the subject matter by explicitly addressing language (Hu, 2023; Moncada-Comas & Block, 2021). In addition, the findings describe how employing this approach may improve student outcomes. Responses regarding academic opportunities may reflect potential growth in discipline-specific skills and literacy as a result of integrating language into content courses (Coyle, 2018). As for career opportunities, the results coincide with previous studies that show increased employability amongst bilingual or CLIL learners (Arnaiz-Castro et al., 2022; Gómez Parra et al., 2021; Yang, 2017).

Lastly, recommendations for additional language support models answer research question four. Graduates request greater exposure to English and the use of communicative methodologies, and teachers recommend integrating additional language provisions such as ESP and EAP courses. Their responses call for expanding English's role in content and language courses. These findings suggest that the preparatory model should be combined with concurrent support offered throughout EMI programs. Thus, the findings reflect the notion that models meant to prepare students for EMI are typically not sufficient, requiring the development of a language support system that is relevant throughout the program (Curle et al., 2020).

Recommendations and implications

Considering the findings of this study, some recommendations are made to enhance language support strategies within EMI programs. Institutions should review their language policies to ensure they reflect students' language levels and carve a space for Arabic as needed. Rather than applying a one-size-fits-all policy, program leaders should balance students' exposure to English, their English language development, and any necessary L1-medium assistance. Policies should consider learning outcomes, disciplinary literacy outcomes, and the language of instruction (Airey et al., 2017). Comprehensive policies can promote standardization within departments or programs while devoting space to the application of students' L1 as a resource.

To improve students' comprehension and outcomes in EMI programs, institutions must consider applying multiple language support models. Institutions can use concurrent language classes in addition to the preparatory model. With language teachers leading courses, students' disciplinary and academic language may be further developed. EAP and ESP courses have been implemented in Turkey, another country known for using preparatory year programs in its universities. Research suggests that these courses reinforced students' language acquisition, particularly their receptive skills and vocabulary development (Öztürk, 2013; Sandal & Özkan, 2022).

In addition to language provisions, institutions should apply a language-focused approach within English-medium content courses. Offering professional development training sessions can guide teachers in integrating language objectives and focusing on English language communication skills in their lessons. Training should address areas such as language awareness, scaffolding, pedagogy, strategies for using students' L1, and subject-specific language. Similar topics can be seen in an EMI handbook developed by the Transnational Alignment of English Competences for University Lecturers (n.d.), demonstrating how these areas are essential for language support in EMI.

Lastly, a few recommendations are made for future studies. The main limitation of this study is a reliance on self-reported data regarding students' English proficiency and stakeholder views. Future studies should integrate observational and achievement-related data to better understand the barriers to implementing EMI. Experimental research that explores the impact of combining translanguaging and a language-focused approach should also be conducted. Moreover, researchers can conduct longitudinal studies to investigate the challenges students face at different levels of study. This would facilitate a deeper understanding of the language gap and allow recommendations for language support to be tailored by year of study.

The implications of this research are relevant to both policymakers and practitioners in Saudi higher education and similar contexts. Policymakers must consider students' needs and goals when implementing EMI. Often, students' limited English proficiency represents a barrier to their success in English-medium programs (see Curle et al., 2020; Lasagabaster, 2022), which may fuel opposition. However, the reality of internationalization necessitates English proficiency for students' future studies or careers. Policymakers need to strengthen English language support while dedicating a space for students' L1 in EMI programs. For practitioners, EMI teachers must reflect on how they can bolster students' language development. To improve student outcomes, they must consider integrating language objectives and communicative activities in their lessons. As EMI expands, these findings inform institutional strategies for effectively implementing EMI. Arabian Gulf countries show similar economic diversification plans paired with low English proficiency levels (English First, 2023). Institutions must improve short-term and long-term outcomes while addressing students' culture and needs. In effect, their language support strategies must thoroughly consider using a language-focused approach, bilingual policies, and multiple support models.

Conclusion

This research investigated the roles of English and Arabic in EMI and recommended strategies to promote language support in EMI programs. To do so, the following areas were explored: the main challenges in EMI implementation, views regarding translanguaging and integrating a language-focused approach, and additional recommendations to enhance EMI programs. The key difficulties relate to language, as students' limited English language skills represent a major barrier. To improve outcomes, stakeholders recommend expanding Arabic's role through translanguaging practices. Carving a space for students' L1, especially as students transition to EMI, may minimize the language gap and opposition to EMI. Simultaneously, teachers and graduates believe that expanding English's role in content and language courses can bolster short-term and long-term outcomes. Stakeholders' recommendations for changes in methodologies and language support models also indicate the necessity of developing English language skills in EMI programs. In turn, policymakers need to consider adapting language policies that dedicate a space for Arabic while offering additional English language provisions. For practitioners, professional development opportunities should be offered to help content teachers integrate language into their lessons. Overall, this study's findings indicate that expanding the roles of both English and Arabic in EMI programs can improve students' outcomes within EMI programs and after graduation. Given these results, higher educational institutions must consider using a language-focused approach, bilingual language policies, and multiple support models in their language support strategies. As EMI continues to grow in contexts in which there may be resistance to EMI or a lack of English proficiency, such a comprehensive strategy can enhance EMI implementation and outcomes by meeting students' needs.

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Appendices

Appendix 1: Teachers' questionnaire

1-9	Information and informed consent pages
10	At which Saudi university or vocational institution did you most recently teach?
11	Is this institution a university, college, or vocational institution?
12	What is the location of this institution?
13	What specialization did you most recently teach?
14	What is your gender?
15	What is your English language level?
16	Did you previously teach tertiary subject courses in which English was used as the medium of instruction? (note-language courses are not subject courses)
17	Have you taught courses within a Saudi tertiary institution within the past 5 years?
18	The shift of medium of instruction from Arabic at school to English at university was very challenging for my students.
19	Teaching students who had not previously taken secondary courses through English was very challenging for me.
20	If the assessments were in Arabic, I believe that my students would have gotten higher grades in my courses.
21	If Arabic were used in lesson delivery, I believe that students would better understand the concepts taught in my courses.

22	My students had difficulties understanding the course content because the English level of the materials was too advanced.
23	Teaching my classes in both Arabic and English was more beneficial for students than only teaching in English.
24	A focus on both language and content in English-medium courses can minimize classroom-related challenges.
25	A focus on both language and content in English-medium courses can support students' future academic opportunities.
26	A focus on both language and content in English-medium courses can support students' future career-related opportunities.
27	What challenges did you face when teaching through English?
28	How do you believe courses taught through English can be improved?

Appendix 2: Graduates' questionnaire

1-9	Information and informed consent pages
10	At which university or vocational institution did you most recently study?
11	Is this institution a university, college, or vocational institution?
12	What is the location of this institution?
13	In which specialization was your degree?
14	What is your gender?
15	How would you describe your English language level when you began your tertiary studies?
16	How would you describe your current English language level?
17	Were your university/college courses taught in Arabic or English?
18	Have you graduated from a bachelor's or diploma program within the last five years? Or will you graduate this year?
19	The shift of medium of instruction from Arabic at school to English at university was very challenging for me.
20	If the assessments were in Arabic, I believe that I would have gotten higher grades in my courses.
21	If Arabic were used in lesson delivery, I believe that I would better understand the concepts taught in my courses.
22	I had difficulties understanding the course content because the English level of the materials was too advanced.
23	Teachers using both Arabic and English in classes was more beneficial for me than only learning in English.
24	A focus on both language and content in English-medium courses can minimize classroom-related challenges.
25	A focus on both language and content in English-medium courses can support students' future academic opportunities.
26	A focus on both language and content in English-medium courses can support students' future career-related opportunities.
27	What challenges did you face when learning through English?
28	How do you believe courses taught through English can be improved?