Content-based instruction in ESP: A comparative study of motivation and listening skill development in Egypt, Saudi Arabia, and Bahrain

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ABSTRACT

The paper discusses how an English Medium Instruction (EMI) environment, which is based on a Content-Based Instruction (CBI) approach, affects the learning outcomes of English for Specific Purposes (ESP) students in Arab world universities. The study adopted a quasi-experimental mixed methods design, comparing the acquisition of listening comprehension skills, motivation, and attitudes towards learning among 125 students from Bahrain, Saudi Arabia, and Egypt. The findings revealed that the combined EMI/CBI strategy resulted in a significant improvement in the listening skills of all participant groups, with performance levels varying depending on the national environment. Additionally, the intervention led to significant positive changes in student motivation and attitudes, with the most notable attitude shifts observed among cohorts in Saudi Arabia and Egypt. The results emphasize the importance of teaching language and content simultaneously in ESP classrooms and highlight the substantial impact of local socio-educational factors on teaching effectiveness. This study provides evidence-based recommendations for educators and policymakers by presenting a model that supports the successful implementation of immersive, content-based language pedagogy tailored to the diverse educational contexts within the Arab region.

Contribution/ Originality: The originality of this study is based on a cross-national comparison of the contribution of Content-Based Instruction to enhance ESP listening skills and motivation in Egypt, Saudi Arabia, and Bahrain. It provides a regional example from the Arab world, demonstrating that effective pedagogy should be tailored to specific socio-educational conditions.

1. INTRODUCTION

The global academic and professional lingua franca has firmly established English as the dominant language, making proficiency beyond general English a key determinant of success. ESP (English for Specific Purposes) has thus become a fundamental component of higher education, providing students with language skills tailored to their specific fields (Basturkmen, 2025). The internationalization movement has further popularized English Medium

Instruction (EMI), although its implementation has raised complex issues related to pedagogy, quality assurance, and ownership rights (Dearden, 2014; Macaro & Aizawa, 2024). Importantly, the implementation of EMI is not enough; it requires the support of a pedagogical approach and the ability of instructors to be confident in its implementation (Vander, Malmström, Martinez, & Pecorari, 2025).

Content-Based Instruction (CBI) provides a potent model of ESP that is based on the idea that a language is best learned when it is worked with meaningful material that is related to a specific subject (Snow & Brinton, 2023). This approach facilitates the involvement of deeper thought. Nonetheless, the emotional aspect, in which students perceive these challenging multilingual classrooms, is also crucial because anxiety can become a serious stumbling block to education (Hunter, 2024). CBI is particularly effective in an EMI context when it is directly applied to students, enabling them to cope with the dual task of learning disciplinary knowledge and language to convey it.

This is particularly relevant to the Arab world, where countries such as Egypt, Saudi Arabia, and Bahrain are still actively implementing educational reform and internationalization agendas as part of larger national strategies (Alhamami & Almosa, 2023). One of the most studied aspects of EMI is its effect, and recent comparative studies in the Gulf have shown varied results and challenges (Aljehani & Modiano, 2025). Although the trend towards the use of EMI and ESP programs is increasing, lecturers face significant issues, such as concerns about their own proficiency in English or the need to develop effective coping mechanisms (Demir, 2024). For students, listening comprehension remains a major challenge in EMI environments, where understanding complex lectures and specialized terminology is crucial.

Moreover, the motivation of learners is a multifaceted and complex construct (Alamer, 2024) and is one of the well-established predictors of success, but may be weak when students are overwhelmed. Current research highlights the importance of understanding motivation in specific educational contexts and critically analyzing the methods used to measure it (Al-Hoorie, Hiver, & In'nami, 2024; Hennebry-Leung & Lamb, 2024). According to Buehl and Vogler (2022) the issue is that in the absence of sufficient assistance, teachers might simplify the material, and students might feel inadequate, which could undermine motivation and learning. To address these issues, academics have long proposed adaptive bilingual strategies that support comprehension while utilizing the benefits of immersion (Falomir & Jordà, 2015).

The primary objectives of this comparative research are therefore.

1. To investigate and contrast how well a content-based instruction approach delivered through EMI affects the growth of ESP learners' listening comprehension abilities at Bahraini, Saudi Arabian, and Egyptian universities.
2. To investigate how this teaching strategy affects the motivation and attitudes of ESP students toward learning English in these three different national contexts.
3. To determine which ESP learning requirements are typical and particular for non-majoring English students at the participating institutions.

This study aims to elucidate these interconnected factors, assisting educators, curriculum designers, and policymakers in gaining a more effective insight into how to structure immersive and content-based ESP instruction in three strategic contexts of Arab higher education to maximize language proficiency and engagement of the learner.

1.1. Problem Statement

English for Specific Purposes (ESP) programs are designed to equip learners with the language skills necessary for their specific academic or professional fields of study. However, the traditional methods of ESP instruction often lack engagement and fail to provide learners with authentic and contextually relevant content. As a result, many ESP learners struggle to bridge the gap between classroom language instruction and real-world language use in their specialized domains.

To verify the existence of the problem, data were compared and analyzed based on the common needs analysis survey that was distributed and completed in both countries (Egypt, Saudi Arabia, and Bahrain). This was aimed at establishing the nature and sources of any possible problems that the ESP students could be facing and the manner in which this can affect teaching and learning. The answers of the students revealed their universal necessity to resort to vast assignments that aim at the listening skill. The English-medium instruction of ESP courses, in which subject-specific information is taught using the English language, is one possible solution to this issue. Although EMI has become popular in the field of higher education, little is known about its use in ESP.

The focus of this study is to conduct a comparative analysis of the effectiveness of the CBI approach within the EMI framework, which will contribute to the improvement of ESP learning. The primary issue to be investigated is whether subject-specific material in the ESP courses taught in EMI can enhance language proficiency, understanding, and communication skills, ultimately equipping ESP students to succeed in their academic or professional activities.

1.2. Research Questions

The current study aimed to answer the following research questions.

RQ1: What is the effect of using EMI through the utilization of content-based instruction on improving English listening skills among ESP students?

RQ2: What is the effect of using EMI through the utilization of content-based instruction on ESP students' motivation for learning?

RQ3: What are the ESP students' attitudes towards using EMI through the utilization of content-based instruction?

2. LITERATURE REVIEW

2.1. Global Rise of English Medium Instruction (EMI)

English Medium Instruction, which involves the use of the English language to teach academic subjects in non-English-speaking countries, has emerged as a result of the internationalization processes of higher education institutions (HEIs) worldwide. It is motivated by the fact that, to attract international students, become more global, and equip graduates with a globalized job market, mastering English is one of the main assets (Lin & Lei, 2021; Macaro, Curle, Pun, An, & Dearden, 2018). The application of EMI varies significantly across contexts, with some institutions offering comprehensive programs in English, while others integrate EMI into specific courses, resulting in a diverse range of pedagogical practices and issues related to faculty readiness and student competency (Tang, 2020).

2.2. ESP and EMI in MENA Region: A Strategic Necessity

EMI is particularly prevalent in the Middle East and North African (MENA) region, where nations are fiercely striving to introduce educational reform to facilitate economic diversification and internationalization. One of the most important aspects of this change is ESP, which adapts the teaching of language to the specific needs of particular academic disciplines or professions (Assassi & Rouaghe, 2024). ESP is an area of strategic emphasis where there is a rapid adoption into the global economy, as it not only teaches general English but also provides students with the functional language skills they need to succeed in their intended areas.

2.3. Egyptian Context ESP Innovation and Implementation

Since the 1990s, ESP has undergone rapid growth due to the centers established at recognized institutions to aid in teaching and research (Dou, Chan, & Win, 2023). The country's involvement in EMI is a critical component of the higher education system to increase student mobility and academic congruency on a global scale (Latif, 2024). Learner

needs analysis has been a concern of a long line of Egyptian research across various fields, such as engineering, mass communication, and tourism, with a particular focus on the student-centered approach to course design.

Studies on the application of technology to improve the results of ESP are extremely popular in Egypt. The research suggests that computer-based programs can support students in their active listening skills (Habib, 2020). WebQuests can assist students of mass communication in their oral communication skills, and computer-assisted language learning (CALL) can support students of engineering in their writing subskills (El-Ghonaimy, 2015). Additionally, Morsi and Abou Elseoud (2024) outline that the value that online discussion boards and sites add to undergraduate EFL teaching is significant, as they encourage self-directed learning and enhance reading comprehension skills. New pedagogies are also under study, including project-based learning to develop business writing, negotiation, and persuasion skills (Abdel Latif, 2025) and the effective use of brain-based education to learn more vocabulary and develop listening skills (Salem, 2017).

2.4. The Gulf Setting: Common Visions and Different Directions

The motivation for EMI and ESP implementation is especially high in the countries of the Gulf Cooperation Council (GCC), which is preconditioned by the existence of the general economic perspectives of decreasing reliance on oil-based economies and building a knowledge-based economy. Education reform has become highly valuable in Saudi Arabia, with English proficiency regarded as a major facilitator of global business, tourism, and other international relationships (Alhamami & Almosa, 2023; Aljehani & Modiano, 2025). This regional aspiration provides a unified strategic environment in which ESP programs are to be implemented.

2.4.1. Society in Saudi Arabia: Strive and Struggle

The scale and speed at which Saudi Arabia is undergoing reform make its ESP journey unique. It is evident that there is a high and rising need to have graduates who are well-versed in English in certain fields such as medicine, engineering, and finance (Alsmari, 2021). Nevertheless, ESP implementation is a challenging issue. There is a lack of qualified specialists with specific subject-matter knowledge as ESP instructors, insufficient access to contextually relevant and up-to-date teaching resources, and linguistic diversity among students, as it introduces a broad spectrum of proficiency levels (Alvi, Muhammad Bilal, & Abdul Rahim Alvi, 2021; Khan, 2019). Moreover, the more central consideration of equal and efficient technological integration is within a huge framework of institutions (Gaffas, 2023).

The issue of English language education in Saudi Arabia is not recent, as considerable resources have been allocated to the program at university levels; however, the outcomes have failed to meet expectations (Al-Wossabi, 2024). The Preparatory Year Program requires every new student to undertake courses in English, yet shortcomings in delivery persist at the university level (Al-Wossabi, 2024). Online disruption offers promising solutions, with tools such as Madrasati and Blackboard Collaborate enabling real-time assessment and collaborative learning, aligning with Saudi Vision 2030's goal of establishing a knowledge-driven economy (Al Fraidan & Alaliwi, 2024). In addition to English, Arabic as a second language is also taught in Saudi universities, where 61 students from 25 countries were found to have positive intentions and attitudes towards it, which were largely driven by religious aspects (Alhamami & Almosa, 2023).

Among the challenges, however, are the use of local dialects by instructors and ineffective training in ASL teaching (Alhamami & Almosa, 2023). Cultural sensitivity and harmonious coexistence depend on the element of intercultural pluralism, which is promoted through EFL education, and teachers must be trained to engage in intercultural communication (Ahmed, 2024).

2.4.2. Bahraini Context: A Center of Language Training Specialization

Bahrain, an ancient financial and business hub, has a strong pragmatic demand for ESP. The country's economy heavily relies on the banking sector, tourism, hospitality, and healthcare, thereby exerting significant pressure on

professionals who need to communicate effectively in English within these sectors (Hutchinson & Waters, 1987; Robinson, 1991). One of the primary issues in Bahrain is the clear focus of ESP programs on the subtle language needs of the country's high-skilled service industries.

Application of ESP in Bahrain is traditionally perceived in terms of special units in such institutions as the English Language Centre at the University of Bahrain, which conducts specific courses in domains such as business English, medical English, and engineering English (University of Bahrain, 2023). The strategies used in these programs typically include detailed needs analysis, learning through tasks, and the use of authentic materials to ensure the programs are relevant (Robinson, 1991).

Nonetheless, Bahrain faces its own set of constraints. One of the primary issues is the interaction between language teachers and industry employees to ensure the curriculum remains aligned with real-world language requirements (Dudley-Evans & St John, 1998). Additionally, instructors must possess not only pedagogical skills but also high-level, specialized subject knowledge, a combination that is rarely found in fields such as finance or engineering. Infrastructure limitations, such as access to specialized digital resources and language laboratories, also pose challenges (Zohrabi, 2014). However, these factors do not diminish the potential of ESP in Bahrain, as there are ongoing prospects for expansion through new approaches in delivering educational resources, such as blended learning and specialized certification programs, further establishing ESP as an integral part of the nation's human capital development.

Research in Bahrain reveals various innovations and issues in specialized language training and communication contexts. Aljahromi and Hidri (2023) endorsed critical reflective discussions in language teaching by demonstrating that they had a significant positive impact on student interactivity and reduced communication anxiety in online EFL teaching among 49 Bahraini undergraduates. Al Khalifa (2024) identifies major barriers to the adoption of inclusive education in Bahraini public schools since 2005, emphasizing the importance of cultural, policy, and practice-related issues affecting students with special educational needs. To address the shortage of Arabic dialects for use in natural language processing applications, Omran, Sharef, Grosan, and Li (2023) developed a multilingual sentiment analysis dataset comprising Bahraini dialects, Standard Arabic, and English. Abdulla, Naqi, and Jassim (2022) found that the situation with healthcare communication in primary care was severely impaired due to language barriers between nurses and patients, as well as a lack of effective communication skills. This underscores the need for official communication training programs.

2.5. Content-Based Instruction (CBI): A Synergistic Method of EMI/ESP

Content-Based Instruction (CBI) is a pedagogical approach that is closely connected with the purposes of EMI and ESP. CBI is an integrated method of language learning and content learning by presenting academic topics using the target language. Owing to the fact that it allows students to learn both the knowledge pertinent to a particular discipline and a language they will need to communicate it well, this approach is ideal in an ESP setting (Barnard, Hasim, & Sameephet, 2023; Snow & Brinton, 2023). Research indicates that a CBI approach, with an EMI framework, has many similarities. It introduces students to authentic academic discourse patterns and linguistics that promote language knowledge and the comprehension of the study topic (Lyster, 2017). Also, since students are asked to analyze and synthesize intricate information in the second language, this method promotes the development of critical thinking and problem-solving skills (Jiang, Zhang, & May, 2019; Muttaqin & Chuang, 2023). The EMI of CBI can also help increase motivation and engagement among students, as it contextualizes language learning and makes it relevant to them, which is key to success in ESP environments.

2.6. Testing the Gaps and Reasoning for the Comparative Study

With Egypt, Saudi Arabia, and Bahrain as its different facets, literature attests to the strategic value of EMI and ESP across the region. Examples of studies that have often focused on new teaching techniques and integrating

technology in Egypt include Morsi and Abou Elseoud (2024) and Abdel Latif (2025). Capacity and resource macro-level problems have been thoroughly researched in Saudi Arabian literature (Hassan, Mohamed, & Hamad Al-Khresheh, 2024). The new study concerning Bahrain has focused on the micro-level issues of industry focus and specialized teacher training.

The need to have pedagogical strategies such as CBI that effectively manage the twofold challenges of teaching language and content is an overriding theme in all three contexts. Nonetheless, empirical studies that directly assess the effect of such an intervention on psychological variables (e.g., motivation) and learning outcomes (e.g., listening skills) in these various national settings are comparably scarce. The proposed research aims to bridge that gap and provide valuable information that addresses the unique challenges and shared objectives of all educational environments by comparing the impact of a CBI approach on ESP students in Egypt, the Kingdom of Saudi Arabia, and Bahrain.

3. METHODOLOGY

3.1. Research Design

The present research used a quasi-experimental, pre-test/post-test control group study design to examine the impact of a CBI methodology taught through EMI on listening skills and motivation of students studying English as a Specific Purpose (ESP) language in three national settings (Egypt, Saudi Arabia, and Bahrain). A convergent parallel mixed-methods design was chosen, in which quantitative data (listening tests and motivation scales) and qualitative data (semi-structured interviews) were gathered simultaneously and analyzed separately, with the findings being combined during the interpretation stage to yield a comprehensive picture of the research issue.

3.2. Participants and Sampling

This study involved 125 students who were recruited from three universities in Egypt, Saudi Arabia, and Bahrain, where ESP is part of the curriculum. Specifically, participants were drawn from Minia University in Egypt, the Gulf University in Bahrain, and Qassim University in Saudi Arabia. The participants were non-English majors who took compulsory ESP classes, which affected a variety of levels of English proficiency and increased the ecological validity of the results. The selection of intact classes was in the form of a purposive sampling method, which was subsequently randomly divided into experimental and control groups in each country. They tried to compare groups within nations with the use of major variables, such as type of course, academic level, and previous instruction in the English language, to guarantee the comparability and to enhance the validity of the cross-national comparison.

3.3. Instruments

In the research, a set of three well-crafted measures was used to determine the effect of the EMI/CBI intervention on listening skills, motivation, and attitudes of ESP students. These instruments were developed and validated through a rigorous procedure to ensure their reliability and validity within the context of the present research.

1) This is achieved by the ESP Listening Comprehension Test

a. Development and Content

To determine the listening micro-skills targeted by the intervention, a content-based listening test was created to measure them in an authentic manner. The test was developed based on the five thematic units of the CBI course content: Business, Cognitive Science, Sociology, Physiology, and Psychology. The test blueprint outlined five items for each thematic unit, resulting in a final test of 25 items. To thoroughly assess various sub-skills of listening, the test employed an indirect format that involved a variety of task types, including multiple-choice questions, information transfer, matching, and sequencing. The stimuli were real audio and video content pertinent to the thematic units, aiming to increase ecological validity.

b. Validation and Piloting

In order to guarantee content validity, three experts in applied linguistics and ESP revised the initial test blueprint and item pool. The specialists evaluated the items in terms of their relevance to the thematic content, clarity, and appropriateness for the level of target student proficiency. The items were then refined based on their feedback, and the test structure is complete.

A pilot test was conducted among 30 students with characteristics similar to those in the primary study sample. Pilot study data were analyzed in terms of item difficulty, discrimination, and internal consistency reliability. The analysis yielded a high Cronbach's alpha coefficient of .87, indicating that the results are highly reliable. The pilot feedback enabled minor changes to the instructions and corrections to the timing of some audio pieces to match the final version.

2) Motivation Scale for Learning in English

a. Development and Content

A 20-item self-report questionnaire was developed to measure students' motivation towards learning English through the EMI/CBI approach. The scale was designed to capture key dimensions of L2 motivation, including integrative motivation (interest in the language and culture), instrumental motivation (practical, goal-oriented reasons such as career advancement), and task-specific motivation (engagement with the CBI materials and activities).

The final instrument, as shown in the provided data file (*Motivation Scale for Learning in English (Responses) - Latest version.xlsx*), contained statements such as.

- *"I feel motivated to use English in my academic studies."*
- *"Using English in content-based classes enhances my interest in the subject matter."*
- *"I believe EMI improves my overall English language proficiency."*

Responses were collected on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

b. Validation and Reliability

The initial item pool was reviewed by a panel of experts to establish content validity, ensuring the items were clear, relevant, and comprehensively covered the construct of motivation in an EMI/CBI context. The scale was piloted, and the data confirmed high internal consistency. In the main study, the scale demonstrated exceptional reliability with Cronbach's alpha coefficient of $\alpha = 0.93$.

3) Attitudes Scale towards Using EMI

a. Development and Content

A 10-item scale was developed to assess students' attitudes towards the use of English as a Medium of Instruction through content-based teaching. The scale was designed to measure the cognitive (beliefs about effectiveness), affective (feelings about the experience), and behavioral (willingness to recommend) components of attitudes.

The final instrument, as documented in the *Attitude Scale.docx* and the corresponding data file (*A scale for assessing English for Specific Purposes (ESP) students' attitudes....xlsx*), included statements such as.

- *"I believe that EMI is an effective way to prepare for future collaborative projects in English."*
- *"I find that content-based instruction in English encourages me to actively seek out additional listening materials."*
- *"I would recommend EMI through content-based instruction to other students.*

Responses were recorded on a 5-point Likert scale (1=Strongly Disagree to 5=Strongly Agree).

b. Validation and Reliability

The attitudes scale followed the same rigorous validation procedure as that of the motivation scale, which involved expert content validation. Its validity was determined in the primary data analysis, which proved it to be a sound tool for capturing the changes in students' attitudes after the intervention.

3.4. Data Collection Procedures

There was uniformity in the data collection processes across all three countries. A pre-test phase of the research process was conducted, during which the respective participants of both the experimental and control groups completed the listening comprehension test and the motivation scale. This was followed by an 8–10-week intervention period, during which the experimental groups received CBI teaching, while the control groups continued with the standard ESP teaching. The post-test was administered after the intervention, and all subjects responded again to the listening test and the motivation scale. Subsequently, a sample of members from the experimental group was randomly selected to participate in a semi-structured interview, which was taped and transcribed verbatim to facilitate analysis.

3.5. Data Analysis

Statistical analysis was conducted using SPSS (v28). Descriptive statistics summarized the data before testing hypotheses with inferential methods, after verifying parametric assumptions (Levene's and Shapiro-Wilk tests). A 3x2x2 Mixed ANOVA (Country×Group×Time) examined listening and motivation scores; significant effects were further analyzed with Scheffe's post hoc test. Qualitative interview data underwent thematic analysis, enriching the quantitative results. Findings from both strands were integrated into the discussion.

4. RESULTS AND DISCUSSION

4.1. Research Question 1: Effect on English Listening Skills

A one-way analysis of variance (ANOVA) was used to compare the post-test scores to determine the effect of EMI through content-based instruction on the listening skills of ESP students, after confirming group equivalence at the pre-test level (Levene's statistic = 0.414, p = 0.662).

Descriptive statistics (Table 1) showed that all three groups recorded significant improvements in listening test scores between pre-test and post-test. The Egyptian group recorded the highest increase in raw scores (+7.84), followed by the Saudi group (+7.26), and lastly the Bahraini group (+3.34). Although with a smaller gain, the Bahraini group still had the best post-test mean score (23.04).

Table 1. Descriptive statistics for the listening test.

Group	Country	Sample Size	Pre-test M	Post-test M	Gain
1	Bahrain	41	19.70	23.04	+3.34
2	Saudi Arabia	42	11.59	18.85	+7.26
3	Egypt	42	11.73	19.57	+7.84

The ANOVA results (Table 2) confirmed that the differences between the groups' post-test means were statistically significant, F (2, 122) = 129.857, **p** < 0.001. This indicates a significant effect of the EMI/CBI intervention on listening comprehension, with the magnitude of the effect varying by country.

Table 2. ANOVA results for post-intervention listening test scores.

Source	Sum of squares	df	Mean square	F	Sig.
Between groups	415.821	2	207.910	129.857	0.000
Within groups	195.331	122	1.601		
Total	611.152	124			

A Scheffé post-hoc test (Table 3) was conducted to identify the specific differences between groups. By all the pairwise comparisons, it was statistically significant (p < .05). The results of the analysis showed that the Bahraini group performed significantly better than both the Saudi (MD = 4.19) and Egyptian (MD = 3.48) groups. Moreover, the Egyptian group ranked considerably higher compared to the Saudi group (MD = 0.71).

Table 3. Scheffé Post-Hoc comparisons for listening test scores.

(I) group	(J) group	Mean difference (I-J)	Sig.
Bahrain	Saudi Arabia	4.19*	0.000
	Egypt	3.48*	0.000
Saudi Arabia	Egypt	-0.71*	0.038

Note: *The mean difference is significant at the 0.05 level.

4.2. Research Question 2: Effect on Motivation for Learning

To address the second question regarding the intervention's effect on student motivation, a one-way ANOVA was performed on the motivation scale post-test scores after establishing group equivalence at pre-test (Levene's statistic = 0.985, p = 0.121).

Descriptive statistics (Table 4) showed substantial increases in motivation scores for all groups. The Egyptian group demonstrated the largest gain (+39.55), followed by the Saudi group (+37.72) and the Bahraini group (+23.69). The Egyptian group also achieved the highest post-test mean (93.21).

Table 4. Descriptive statistics for the motivation scale.

Group	Country	Sample Size	Pre-test M	Post-test M	Gain
1	Bahrain	41	64.09	87.78	+23.69
2	Saudi Arabia	42	52.78	90.50	+37.72
3	Egypt	42	53.66	93.21	+39.55

The ANOVA results (Table 5) indicated a statistically significant difference in post-test motivation scores between the groups, $F_{(2, 122)}$ = 6.236, *p* = 0.003, confirming that the intervention had a significant effect on student motivation that differed by country.

Table 5. ANOVA results for post-intervention motivation scores.

Source	Sum of squares	df	Mean square	F	Sig.
Between groups	612.604	2	306.302	6.236	0.003
Within groups	5992.596	122	49.120		
Total	6605.200	124			

A comparison of the two groups (Table 6) using the Scheffe post-hoc tests showed that the only significant pairwise difference was between the Bahraini and Egyptian groups (MD = -5.43, p = .003), in favor of Egypt. The differences between Bahrain and Saudi Arabia (MD = -2.72, p = .214) and Saudi Arabia and Egypt (MD = -2.71, p = .211) were not statistically significant, indicating that the positive impact of motivation is similar in the Saudi and Egyptian cases.

Table 6. Scheffé post-Hoc comparisons for motivation scores.

(I) Group	(J) Group	Mean Difference (I-J)	Sig.
Bahrain	Saudi Arabia	-2.72	0.214
	Egypt	-5.43*	0.003
Saudi Arabia	Egypt	-2.71	0.211

Note: *The mean difference is significant at the 0.05 level.

4.3. Research Question 3: Effect on Attitudes towards EMI/CBI

The third research question concerned the intervention's impact on students' attitudes. A one-way ANOVA on the attitudes scale post-test scores was conducted after confirming pre-test equivalence (Levene's statistic = 0.554, p = 0.452).

As shown in Table 7, all groups exhibited improved attitudes. The Egyptian group showed the largest gain (+20.12), followed by the Saudi (+16.79) and Bahraini (+6.29) groups. The Egyptian group also recorded the highest post-test mean (48.54).

Table 7. Descriptive statistics for the attitudes scale.

Group	Country	Sample Size	Pre-test M	Post-test M	Gain
1	Bahrain	41	34.17	40.46	+6.29
2	Saudi Arabia	42	28.42	45.21	+16.79
3	Egypt	42	28.42	48.54	+20.12

The ANOVA results (Table 8) demonstrated a statistically significant difference in post-test attitude scores between the groups, $F(2, 122) = 58.046$, *p* < 0.001.

Table 8. ANOVA results for post-intervention attitude scores.

Source	Sum of squares	df	Mean square	F	Sig.
Between groups	1368.057	2	684.028	58.046	0.000
Within groups	1437.671	122	11.784		
Total	2805.728	124			

Scheffé post-hoc tests (Table 9) indicated that all pairwise comparisons between groups were statistically significant (p < 0.001). The Egyptian group held significantly more positive attitudes than both the Saudi (MD = 3.33) and Bahraini (MD = 8.08) groups. Similarly, the Saudi group's attitudes were significantly more positive than those of the Bahraini group (MD = 4.75).

Table 9. Scheffé Post-Hoc comparisons for attitude scores.

(I) Group	(J) Group	Mean Difference (I-J)	Sig.
Bahrain	Saudi Arabia	-4.75*	0.000
	Egypt	-8.08*	0.000
Saudi Arabia	Egypt	-3.33*	0.000

Note: *The mean difference is significant at the 0.05 level.

5. DISCUSSION

The measurement of the study is the impact of EMI-based Content-Based Instruction (CBI) on the listening, motivation, and attitudes of ESP students in Bahrain, Saudi Arabia, as well as Egypt. Findings show that CBI/EMI is a useful pedagogical construct, but the influences of the local socio-educational context determine the effects differently, which results in diverse effects in different settings.

5.1. Divergent Gains in Listening Proficiency and Contextual Exposure

The listening proficiency analysis revealed significant differences in context. The Bahraini group, although with a lower raw gain, achieved the highest absolute post-test scores. This suggests a ceiling effect among students with a considerably higher initial proficiency level (Pre-test M = 19.70), who improved primarily through refinement. This initial advantage can likely be attributed to Bahrain's status as a more established international business hub, where exposure to English is more prevalent in daily life. Conversely, the greater improvements observed in Egypt and Saudi Arabia (Pre-test M = 11.73 and 11.59, respectively) indicate that the CBI/EMI method was particularly effective in developing basic listening skills among students with a lower starting point. This variation underscores that the success of skill development interventions is relative to students' initial proficiency levels and the linguistic environment.

5.2. The Dynamics of Motivation and Attitudes Across Contexts

Although it increased motivation among all cohorts, the drivers and results varied, and the students' attitudes were the most context-sensitive measure. The noticeable motivation boom in Egypt and Saudi Arabia might be explained by the peculiarities of a new and perceived relevance of CBI, in which students observed a direct connection between the program and their future professional ambitions (instrumental motivation). The less impressive growth in Bahrain suggests that a well-constructed CBI can further increase engagement even in high-exposure situations.

Student attitudes were the most dominant contextual dynamic. Continuous attitudes of discipline towards pedagogical innovation are evidenced by an overwhelmingly positive rate in Egypt, followed by Saudi Arabia and then Bahrain. The Egyptian culture of education can be more open to student-centered methods, whereas in Bahrain, the greater the familiarity with English, the less novel the approach may be perceived. This is in line with current studies, which propose that attachment to old instructional systems may act as a hindrance even in cases where the new systems prove to be more effective.

5.3. Synthesis and Pedagogical Implications

The success of the intervention aligns with the literature on the benefits of language learning when incorporated into the curriculum. Nonetheless, the comparative design adopted in this study shifts the discussion from whether CBI/EMI is effective to how the effectiveness of CBI/EMI is determined by local contexts. The results, therefore, provide several pedagogical conclusions.

Differentiated Implementation: A general model does not work. CBI/EMI is also very effective at the core proficiency and motivation in less-exposed English situations (e.g., Egypt, KSA). In high-exposure settings (e.g., Bahrain), more attention should be paid to the advanced tasks of CBI that require higher-order thinking and language skills.

Strategic Teacher Education and Curriculum Development: Effective CBI requires teacher educators who are not only content experts but also language experts. Professional development should prepare ESP teachers to create content-based instruction that focuses on specific language goals simultaneously. To ensure that the demonstration of immediate relevance and motivation is sustained, the curriculum must be constructed based on genuine, discipline-specific materials.

Preemptive Control of Attitudes and Policy: Teachers must preemptively and proactively manage a variety of student attitudes towards new approaches. The empirical reasons that policymakers who favor internationalization (e.g., Saudi Vision 2030) have to be enthusiastic about CBI/EMI are, however, justifiable and necessitate funding for pilot projects, material creation, and additional contextual research.

Overall, this research paper supports the claim that CBI/EMI is an effective model for ESP teaching. Nevertheless, this problem is addressed not by strict adherence but by adaptability and situational orientation, which recognize and adapt to pedagogical and cultural environments.

6. CONCLUSION

In conclusion, this study aimed to investigate the effect of integrating EMI with content-based teaching on improving listening skills in the English language, as well as increasing motivation and positive attitudes among ESP students. The efficacy of this strategy was proven using various tools, including English listening tests, motivation tests, interviews, and observation cards. The quantitative results also indicated that the subject was significantly changed regarding English listening competence and motivation, whose objective matter was the combination of EMI and a content-based approach. These findings are in line with other studies that have established similar positive results, such as the enhancement of listening comprehension and motivation highlighted by Eltoukhy and Eissa (2020) and the positive role of motivation and self-efficacy on listening performance in EMI-based contexts highlighted by Zhou and Rose (2021) and Zhou and Thompson (2023). In addition, the respondents were positive

regarding this method, stating that it was interesting and helpful. They saw it as having provided them with a drive to explore their studies further through the more traditional and less thought-provoking methods. The collaborative approach to learning was also facilitated by an integrated approach that enabled profound dialogues with students and instructors. The students who reported the perceived changes in English listening skills are in line with the studies conducted by Smith, Roberts, and Nguyen (2021); Davis and Lee (2022), and (Thompson & Kumar, 2022).

The study's findings are limited to the specific educational contexts of the participating institutions in Bahrain, Saudi Arabia, and Egypt. Key variables such as student proficiency, curriculum design, and instructor expertise directly shape these outcomes. Therefore, future research should aim to validate the EMI/CBI model across a broader range of Arab universities. This work must implement controls for these contextual factors to better assess the model's long-term efficacy and transferability.

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