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The Interplay of Proficiency, Anxiety, and Academic Identity in Arab EFL Students' Attitudes towards Code-Switching

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Abstract

A substantial body of research has established that Arab English as a Foreign Language (EFL) students generally hold positive attitudes towards classroom code-switching (CS). However, these attitudes are not monolithic, and existing studies frequently examine them in relation to isolated variables, focusing predominantly on the descriptive, pedagogical functions of CS. This paper adopts a more nuanced sociolinguistic lens by investigating the complex, interactive relationship between three key variables: self-perceived English proficiency, foreign language classroom anxiety (FLCA), and students' academic identity/disciplinary affiliation. Drawing on a sequential explanatory mixed-methods design, quantitative data were collected via an adapted psychometric survey from Arab university students (N = 510) across distinct academic majors (Language-related vs. STEM fields), followed by semi-structured qualitative interviews (n = 40). The results show that while overall attitudes toward CS remain highly positive (M = 3.69), attitudes are heavily nuanced across cognitive and interactional dimensions. Hierarchical regression analysis revealed that foreign language anxiety was the most potent predictor of positive attitudes (β= .298, p < .001), whereas self-perceived proficiency yielded no significant main effect. Crucially, significant interaction effects emerged: the positive relationship between anxiety and favorable CS attitudes was significantly stronger for high-proficiency students (β = .102, p = .018$) and for STEM majors (β = .167, p < .001). Qualitative thematic analysis illuminated these interactions, revealing that language-related majors view CS through an analytical, identity-legitimizing lens, whereas STEM majors adopt a strictly instrumental perspective driven by content-access needs and evaluative anxiety. These findings challenge rigid, institutional "English-Only" policies and

offer an empirical foundation for strategic, planned translanguaging frameworks within higher education in the Arab world.

Keywords: Code-Switching, Language Anxiety, Proficiency, Academic Identity, EFL, Arab Students, Attitudes, Mixed Methods

Introduction

Code-switching (CS), broadly conceptualized as the systematic alternation between two or more linguistic codes within a single communicative event, is a natural and pervasive discursive feature of the multilingual repertoire. Within the field of English as a Foreign Language (EFL) pedagogy, classroom CS—specifically the alternation between the learners' first language (L1) and the target language (L2)—has shifted from being viewed as a sign of linguistic deficiency to being recognized as a complex cognitive, pedagogical, and socio-affective resource. In academic settings across the Arab world, where Modern Standard Arabic, local Arabic dialects, and English intersect dynamically, classroom CS serves as an essential communicative bridge. This practice extends far beyond simple vocabulary substitution; it reflects deep-seated cognitive processing, institutional power dynamics, and the fluid negotiation of cultural and academic identities among learners.

Despite the pervasiveness of classroom CS, research examining student and teacher attitudes toward the practice remains highly fragmented and ideologically polarized. On one hand, an extensive body of literature argues that both learners and educators maintain favorable perceptions of CS, citing its utility in clarifying complex grammatical concepts, lowering affective barriers, and facilitating classroom solidarity. On the other hand, a competing line of inquiry documents deep-seated ambivalence or overtly negative evaluations. These negative attitudes are typically cultivated within institutional ecosystems that enforce strict target-language immersion or propagate a traditional "monolingual bias," wherein any reliance on the L1 is stigmatized as a marker of incomplete linguistic competence. This ongoing empirical tension suggests that language attitudes toward CS are not static percentages but are instead shaped by an intricate matrix of individual, psychological, and contextual variables.

A critical evaluation of the existing literature reveals several prominent gaps that undermine the development of generalizable pedagogical models. First, the vast majority of studies conducted within the Middle East and North Africa (MENA) region have targeted general undergraduate populations, often failing to differentiate between learners whose future professional and academic trajectories impose vastly different communicative demands. Postgraduate or specialized upper-level EFL students, who display unique patterns of academic autonomy and complex discursive requirements, remain heavily underrepresented. Second, and more importantly, prior research has routinely examined learner variables—such as language proficiency, foreign language classroom anxiety (FLCA), or disciplinary background—in isolation. This atomistic approach overlooks the reality that psychological anxiety, cognitive proficiency, and academic self-concept do not function independently; rather, they interact dynamically to form highly idiosyncratic attitudinal profiles.

To address these empirical limitations, this study proposes a comprehensive, interactive framework that bridges educational psychology and sociolinguistics. Recent empirical soundings have yielded highly conflicting results; for instance, some contemporary research

indicates that language anxiety strongly predicts positive attitudes toward teacher-led CS due to its face-saving utility, while language proficiency unexpectedly exerts no significant main effect. This directly contradicts earlier traditional paradigms which asserted a straightforward, linear, negative relationship between a student's linguistic proficiency and their approval of CS.

Furthermore, emerging evidence suggests that a student's academic major significantly shapes their sociolinguistic orientation, with learners in language-centric fields (e.g., Translation and Theoretical Linguistics) exhibiting significantly more positive evaluations of CS than their peers in technical fields. It is highly plausible that students socialized within language disciplines evaluate CS through a sophisticated, metalinguistic lens, viewing it as a legitimate bilingual practice, whereas students in Science, Technology, Engineering, and Mathematics (STEM) domains perceive it through a purely functional, instrumental lens driven by the immediate need for content comprehension.

Consequently, this study investigates the structural relationships and interaction effects between self-perceived proficiency, classroom anxiety, and disciplinary identity among Arab university EFL students. By deploying a rigorous, sequential explanatory mixed-methods design, this research seeks to answer the following four questions:

1. What are the baseline attitudes of Arab EFL students towards classroom code-switching across its cognitive, pedagogical, and social dimensions?
2. How do self-perceived English proficiency and foreign language classroom anxiety individually and interactively influence these sociolinguistic attitudes?
3. What are the perceived benefits and challenges of code-switching among students from different disciplinary backgrounds?
4. How do these students interactively articulate the role of code-switching in negotiating their academic and linguistic identities?

Literature Review

Theoretical Foundations of Code-Switching Research

Defining Code-Switching and the Shift to Translanguaging

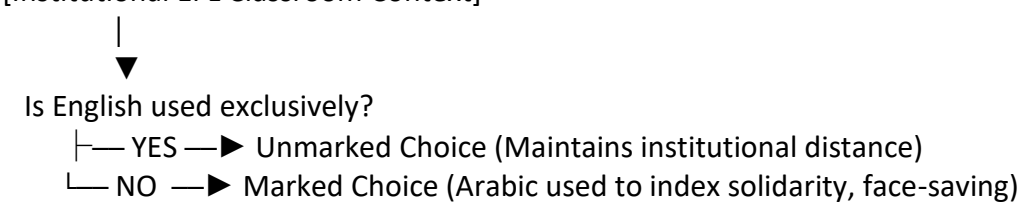
Historically, structural sociolinguistics has conceptualized code-switching as "the alternation between two or more languages within the same discourse". Early structuralist typologies, such as those pioneered by Poplack (1980), meticulously differentiated between *inter-sentential* switching (occurring at structural clause or sentence boundaries) and *intra-sentential* switching (occurring within a single syntactic clause). These frameworks operated on the assumption that a bilingual speaker possesses two separate, bounded linguistic systems that are toggled on and off according to rigid grammatical constraints.

In contemporary applied linguistics, however, this dual-system paradigm has been robustly challenged by the theory of Translanguaging. Pioneered by García and Li Wei (2014), translanguaging posits that multilingual individuals do not navigate independent languages; instead, they select features from a single, integrated, and holistic internal semiotic repertoire. Within this conceptual evolution, classroom CS is no longer pathologized as a mechanical breakdown in target-language processing. Rather, it is viewed as a deliberate, agentive, and cognitively sophisticated orchestration of all available semiotic resources to optimize meaning-making and academic engagement.

Myers-Scotton's Markedness Model

To understand the social and interpersonal motivations governing classroom language alteration, Myers-Scotton's (1993) Markedness Model provides a vital explanatory framework. The model asserts that speakers possess an internalized competence regarding the social meanings indexed by linguistic choices within a given community. In any communicative encounter, a speaker chooses between an unmarked code (the expected, socially conventional language choice for that specific context) and a marked code (a linguistic choice that violates conventional expectations to achieve specific interactional goals).

In an institutional EFL classroom, the unmarked code is typically the target language (English), as mandated by administrative policies. When an Arab EFL learner intentionally introduces a marked code (Arabic), they are consciously altering the social distance between themselves and the interlocutors. This marked shift serves to index cultural solidarity, signal peer alignment, manage face-threatening threats, or negotiate the asymmetrical power distributions that characterize the teacher-student hierarchy.



Sociocultural and Affective Frameworks

From a Vygotskian sociocultural perspective, language is primarily a psychological tool that mediates higher-order cognitive processing. Within the EFL classroom, the L1 operates as a critical mediational tool within the learner's Zone of Proximal Development (ZPD). By utilizing their native linguistic capital, learners co-construct meaning, scaffold abstract conceptual frameworks, and systematically regulate their own learning processes.

This cognitive scaffolding is intrinsically linked to the emotional ecology of the classroom, as captured by Krashen's (1982) Affective Filter Hypothesis. The hypothesis states that negative emotional variables—specifically high anxiety, low motivation, and compromised self-confidence—act as a psychological barrier that prevents comprehensible input from reaching the language acquisition device. When classroom policies permit strategic code-switching, it reduces cognitive overload and provides an immediate emotional safety net. This lowers the affective filter, mitigates evaluative apprehension, and ultimately enhances language processing and input internalization.

Individual Differences: Anxiety, Proficiency, and Academic Identity

The Intersecting Roles of Anxiety and Proficiency

For decades, the relationship between a learner's language proficiency and their reliance on the L1 was modeled as a simple inverse correlation: as linguistic mastery increased, the functional need for—and positive attitude toward—CS would logically decay. This linear assumption has been heavily complicated by recent empirical investigations. Almansour (2024) demonstrated that when foreign language classroom anxiety (FLCA) is entered into multivariate models, it exerts an incredibly powerful, statistically significant main effect on

attitudes toward CS, whereas language proficiency as an independent predictor frequently renders non-significant results. High-anxiety learners, irrespective of their actual structural proficiency, exhibit a strong preference for teacher-led and peer-assisted CS, utilizing the L1 as an affective shelter against the fear of negative evaluation.

Conversely, low-proficiency learners face intense cognitive constraints that demand L1 scaffolding for basic comprehension. This indicates that the structural interaction between proficiency and anxiety is non-linear and highly complex, requiring sophisticated statistical moderation analyses to unpack.

Disciplinary Affiliation and Academic Self-Concept

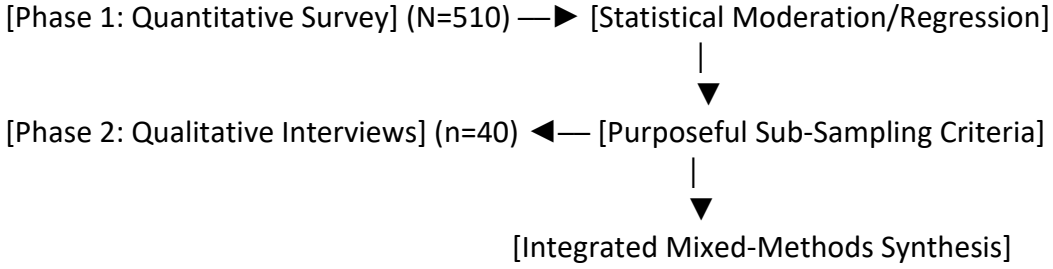
A major, yet frequently ignored, variable in the formation of sociolinguistic attitudes is the student's academic identity and disciplinary socialization. Entering a specific academic domain is not merely a matter of acquiring technical knowledge; it involves an induction into a distinct discursive community with unique language ideologies. Empirical work by Alsulami et al. (2026) has revealed that students majoring in language-centric fields, such as Translation and Linguistics, report significantly more positive attitudes toward CS than those enrolled in other academic streams.

This variance can be attributed to differing orientations toward language: translation and linguistics students are socialized to view language analytically, recognizing code-switching and translanguaging as legitimate, natural manifestations of a highly developed bilingual competence. In contrast, students in STEM disciplines often internalize a highly instrumental view of language, treating English purely as a mechanical vehicle for the transmission of scientific facts and technological data. Consequently, their evaluations of CS are dictated not by sociolinguistic appreciation, but by the immediate pragmatic utility of the code in securing content comprehension and passing high-stakes examinations.

Methodology

Research Design

To comprehensively capture the interactive relationship between the variables, this study used a sequential explanatory mixed-methods design. This approach is structured in two distinct, sequential phases: a dominant quantitative phase followed by an explanatory qualitative phase. The initial quantitative phase captures broad statistical trends, main effects, and interaction terms across a large sample size ($N = 510$). The subsequent qualitative phase uses purposeful sampling to gather nuanced, phenomenological data through semi-structured interviews, allowing the researcher to unpack the psychological mechanisms and personal narratives that underlie the statistical interaction patterns.



Participants and Sampling Matrix

The sample comprised 510 Arab postgraduate and upper-level undergraduate EFL university students recruited from premier public and private higher education institutions across Saudi Arabia and the wider Arab region. A strict stratified purposive sampling strategy was deployed to ensure equal representation across two distinct disciplinary orientations: Language-Related majors ($n = 275$; including Translation, Applied Linguistics, and English Literature) and STEM majors ($n = 235$; including Engineering, Medicine, and Computer Science).

The demographic composition was closely balanced for gender (Male: 52%; Female: 48%) to control for potential gender-based sociolinguistic variances noted in prior regional studies. The inclusion criteria required all participants to be native speakers of Arabic, possess an advanced instructional relationship with English (where English is the primary medium of instruction), and have extensive direct exposure to classroom settings where Arabic-English code-switching is naturally practiced.

Data Collection Instruments

Psychometric Survey Instruments

The quantitative instrument comprised a highly structured, multi-section questionnaire administered electronically and via paper booklets, taking approximately 25 minutes to complete.

- **Attitudes Toward Code-Switching Scale (ATCSS):** Adapted from Alsulami et al. (2026) and Almansour (2024), this 18-item instrument measures language attitudes across four psychometric subscales: *Teacher Persona* (α = .82), *Subject Access* α = .85), *Classroom Management* (α = .83), and *Interpersonal Relations* (α = .84). Items were scored on a 5-point Likert scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*).
- **Foreign Language Classroom Anxiety Scale (FLCAS):** A 33-item instrument adapted from Horwitz et al. (1986) and validated specifically for Arab academic ecologies. It assesses three core constructs: Communication Apprehension, Fear of Negative Evaluation, and Test Anxiety. The scale displayed exceptional reliability in this study (α = .91).
- **Self-Perceived Language Proficiency Scale:** An 12-item self-assessment matrix adapted from Hamouda and Aljumah (2020), prompting students to rate their competencies across the four macro skills (Listening, Speaking, Reading, Writing) on a 5-point Likert scale (1 = *Very Poor*; 5 = *Excellent*; α = .88).

Qualitative Interview Protocol

The qualitative instrument consisted of a semi-structured interview guide designed to elicit deep phenomenological reflections on classroom language choices. Interviews were conducted either in person or via secure video-conferencing channels, lasting between 30 and 45 minutes. To maximize communicative comfort and emotional authenticity, participants were given the autonomy to switch freely between Arabic and English.

All sessions were audio-recorded, transcribed verbatim, and cross-translated by a certified bilingual researcher. Member-checking protocols were applied to the transcripts to ensure descriptive validity.

Statistical and Thematic Data Analysis

Quantitative data processing was performed using SPSS 28.0 and AMOS 28.0. Following baseline descriptive analysis and independent-samples t-tests, a rigorous hierarchical multiple regression analysis was constructed to isolate main and interaction effects. Continuous predictors (Proficiency and Anxiety) were mean-centered prior to the computation of interaction terms to mitigate multicollinearity, and significant interactions were systematically probed using simple slopes analysis.

Qualitative data were subjected to inductive and deductive thematic analysis using Braun and Clarke's (2006) six-phase framework, facilitated by NVivo 12 software. Inter-rater reliability for the qualitative coding matrix was established via double-blind coding of 20% of the transcripts, yielding a Cohen's Kappa coefficient of $\kappa = .86$, confirming high analytical trustworthiness.

Findings

Quantitative Results

Descriptive Overviews and Structural Subscales

The quantitative data show that Arab EFL students hold consistently positive baseline attitudes toward classroom code-switching, as evidenced by an overall composite mean score of 3.69 (SD = 0.716) on a 5-point scale.

A repeated-measures ANOVA revealed highly significant structural differences among the four attitudinal subscales, $F(3, 1527) = 14.82$, $p < .001$, $\eta 2 = .08$. Post-hoc pairwise comparisons with Bonferroni adjustments indicated that the mean score for *Subject Access* (M = 3.85, SD = 0.809) was significantly higher than both *Classroom Management* (M = 3.59, SD = 0.834, $p < .001$) and *Teacher Persona* (M = 3.56, SD = 0.826, $p < .001$). Similarly, *Interpersonal Relations* (M = 3.78, SD = 0.794) scored significantly higher than classroom management and teacher persona ($P \leq .002$).

This empirical hierarchy demonstrates that Arab EFL learners value CS primarily as a cognitive tool for processing academic content and as a social mechanism for maintaining interpersonal alignment.

Bivariate Group Comparisons: Anxiety, Proficiency, and Discipline

To ascertain the individual impact of individual differences, independent-samples t-tests were conducted. When segregating the sample by anxiety levels (Low Anxiety vs. High Anxiety, based on median splits), a massive, statistically significant effect emerged.

As detailed in Table 2, high-anxiety students displayed vastly more positive attitudes toward CS across almost all dimensions, particularly within *Classroom Management* (M = 3.84, $t = -4.287$, $p < .001$, $d = -0.72$) and *Interpersonal Relations* (M = 4.01, $t = -3.844$, $p < .001$, $d = -0.65$). Crucially, however, anxiety exerted no significant impact on the perception of the *Teacher Persona* ($p = .055$), confirming that while anxious students rely on CS for affective survival, it does not fundamentally alter their respect for the instructor's professional persona.

Table 2
Comparison of CS Attitudes by Anxiety Level

Attitude Construct	Low Anxiety (n=225)	High Anxiety (n=285)	t-value	p	Cohen's d
Teacher Persona	3.41 (0.905)	3.68 (0.738)	-1.934	.055	-0.33
Subject Access	3.59 (0.912)	4.07 (0.638)	-3.592	<.001	-0.63
Classroom Management	3.28 (0.865)	3.84 (0.716)	-4.287	<.001	-0.72
Interpersonal Relations	3.52 (0.853)	4.01 (0.669)	-3.844	<.001	-0.65
Overall Attitude	3.45 (0.794)	3.90 (0.571)	-3.834	<.001	-0.67
Note: Values expressed as Mean (SD).					

In stark contrast, a one-way ANOVA across three proficiency levels (Low, Intermediate, High) yielded entirely non-significant results across all subscales and overall attitudes, $F(2, 507) = 0.907$, $p = .406$. This statistical null result indicates that language proficiency, when evaluated as an isolated main effect, does not dictate a student's baseline attitude toward classroom CS.

When examining disciplinary affiliation, another clear pattern emerged. Independent-samples t-tests showed that students in Language-Related majors maintained significantly more positive overall attitudes toward CS ($M = 3.86$, $SD = 0.682$) than their counterparts in STEM fields ($M = 3.51$, $SD = 0.736$, $t = 4.567$, $p < .001$, $d = 0.50$).

To further unpack this relationship, a mediation model was executed via the PROCESS macro (Model 4). The analysis revealed that Academic Identity (the strength of disciplinary self-concept) partially mediated the relationship between academic major and CS attitudes (Indirect Effect = 0.156, SE = 0.042, 95\% BCa CI [0.078, 0.241]), confirming that institutional socialization directly dictates sociolinguistic evaluations.

Multivariate Hierarchical Regression and Interaction Modeling

To uncover the interactive relationships between these variables, a three-step hierarchical multiple regression analysis was constructed. Step 1 controlled for basic demographic covariates (Gender, Age, Years of English Study). Step 2 introduced the centered main effects of Proficiency, Anxiety, and Disciplinary Affiliation. Step 3 entered the two-way interaction product terms.

Table 5
Hierarchical Regression Analysis Predicting Overall CS Attitudes

Predictor Variable	**Step 1 (β)**	**Step 2 (β)**	**Step 3 (β)**
Control Variables			
Gender (Male = 1)	.089*	.075*	.071*
Age	-.012	-.008	-.006
Years of English Study	.101*	.078*	.075*
Main Effects			
Self-Perceived Proficiency		.056	.045
Foreign Language Anxiety (FLCA)		.324**	.298**
Disciplinary Affiliation (Language = 1)		.251**	.235**
Interaction Effects			
Proficiency $\times$ Anxiety			.102*
Proficiency $\times$ Disciplinary Affiliation			-.078
Anxiety $\times$ Disciplinary Affiliation			.167**
Model Statistics			
R2	.045	.218	.252
Δ R2	—	.173	.034
F change	5.234*	38.456**	9.234**
*Note: **p < .001, *p < .05. Standardized beta coefficients reported.*			

The final regression model accounted for 25.2% of the total variance in CS attitudes, F(9, 500) = 18.76, p < .001. Step 3 accounted for a significant addition of variance, Δ R2 = .034, p < .001, confirming the presence of significant interaction dynamics.

- **The Proficiency $\times$ Anxiety Interaction (β = .102, p = .018):** Simple slopes analysis demonstrated that the positive relationship between anxiety and favorable CS attitudes was highly pronounced for high-proficiency students (simple slope = .045, p < .001), but flattened into structural non-significance for low-proficiency students (simple slope =

.012, p = .178). This indicates that high-proficiency learners strategically leverage CS as a sophisticated emotional coping mechanism under high-stress conditions.

- **The Anxiety $\times$ Disciplinary Affiliation Interaction (β = .167, p < .001):** Probing revealed that the positive predictive power of anxiety on favorable CS attitudes was vastly more potent among STEM students (simple slope = .042, p < .001) than among Language majors (simple slope = .018, p = .034). This underscores that psychological anxiety is a primary catalyst for L1 reliance within technical disciplines that lack language-socialization frameworks.

Qualitative Results: Thematic Synthesis

The qualitative data from the semi-structured interviews (n = 40) and open-ended items provided deep insight into the statistical interactions, revealing three major themes.

Theme 1: Translanguaging as a Cognitive Scaffold for Conceptual Processing

Across both disciplines, students overwhelmingly framed code-switching not as a linguistic failure, but as an essential tool for navigating complex academic concepts. This theme corresponds directly with the Subject Access subscale. For language majors, this manifested as a dual-language processing strategy:

"When I encounter difficult theoretical concepts in English, switching to Arabic helps me process the information more deeply. It's not about being unable to understand English—it's about making the meaning more accessible and memorable. I can think through the concept in Arabic and then express it in English with greater confidence." *(Participant 23, Translation Studies)*

For STEM majors, the cognitive scaffolding was entirely instrumental, designed to unpack dense, technical terminology:

"In my programming courses, the technical terminology is challenging even in English. When my instructor switches to Arabic to explain algorithmic logic, I grasp the concept much faster. The Arabic explanation provides a foundation that makes the English terminology more meaningful." *(Participant 56, Computer Science)*

Theme 2: The "Linguistic Safety Net" and Affective Preservation

High-anxiety participants explicitly detailed how CS serves as a structural psychological shelter, validating the significant regression interaction terms. Students explained that the option to utilize Arabic functioned as a face-saving mechanism that mitigated the fear of public failure:

"When I'm feeling anxious about speaking English in class, hearing Arabic from the teacher makes me feel more at ease. It's like a safety net—I know that if I can't express myself in English, I can use Arabic and still participate." *(Participant 14, Literature)*

Crucially, the qualitative narratives illuminated the **Proficiency x Anxiety** interaction, demonstrating that advanced linguistic skills do not eliminate evaluative fear:

"I have good English skills—I've studied English for over 12 years. But in my postgraduate seminars, I still feel anxious about speaking. The content is complex, and I worry about making mistakes in front of my professors and peers. When the instructor uses Arabic, it helps me

feel more confident. It's not that I don't understand English—it's that Arabic helps me manage the pressure." *(Participant 98, Engineering)*

Theme 3: Disciplinary Socialization and Language Ideologies

The qualitative findings explained the significant **Anxiety x Disciplinary Affiliation** interaction by highlighting the contrasting language ideologies internalized by the two groups. Students in language fields reported lower baseline evaluation stigma because their coursework normalized bilingualism:

"I don't experience a lot of language anxiety because our program normalizes bilingualism. We discuss CS in our classes, and we understand it as a natural aspect of bilingual communication. The anxiety that students in other fields might feel about speaking English is not as present for us because we've been socialized to see CS as legitimate." *(Participant 44, Applied Linguistics)*

Conversely, STEM students operated under an intense institutional monolingual bias, viewing Arabic as a practical necessity but an ideological violation:

"I don't think about CS in theoretical terms. For me, it's a practical tool. If Arabic helps me understand the engineering concepts faster, I'm in favor of it... But I need English for my future career, so I want to use it as much as possible. Arabic is helpful, but it's not the goal." *(Participant 101, Mechanical Engineering)*

Discussion

The findings of this investigation provide an empirical advancement in the study of classroom code-switching and translanguaging within foreign language contexts. By examining the interactive relationships between proficiency, anxiety, and academic identity, this study moves beyond basic, descriptive percentages to offer a multi-layered look at the language attitudes of Arab EFL learners.

Deconstructing the Monolingual Bias through Anxiety and Proficiency

The most striking quantitative finding is the complete absence of a significant main effect for self-perceived language proficiency, coupled with the powerful main and interactive effects of foreign language classroom anxiety (FLCA). This directly contradicts traditional pedagogical models which assumed that a learner's reliance on and preference for the L1 would naturally decline as their target-language proficiency advanced. Instead, these results align with and significantly extend the work of Almansour (2024), demonstrating that language attitudes are governed far more by affective factors than by structural language capacities.

The significance of the Proficiency x Anxiety interaction term introduces an important theoretical insight. While low-proficiency learners require CS as a baseline compensatory tool for semantic comprehension, high-proficiency learners systematically deploy CS as a strategic emotional resource under high-stress conditions. This finding can be explained by Myers-Scotton's (1993) Markedness Model. Advanced learners possess the linguistic competence to operate exclusively in English, yet when faced with complex academic content and intense evaluative pressure, they intentionally select the marked code (Arabic). This tactical switch serves as an immediate face-saving device, mitigating the fear of negative evaluation among peers and professors.

Consequently, this study provides empirical support for Krashen's (1982) Affective Filter Hypothesis, demonstrating that CS acts as a primary mechanism to lower emotional barriers. It serves as a "linguistic safety net" that allows advanced bilingual minds to manage both cognitive load and emotional stress simultaneously.

Disciplinary Socialization and the Operationalization of Academic Identity

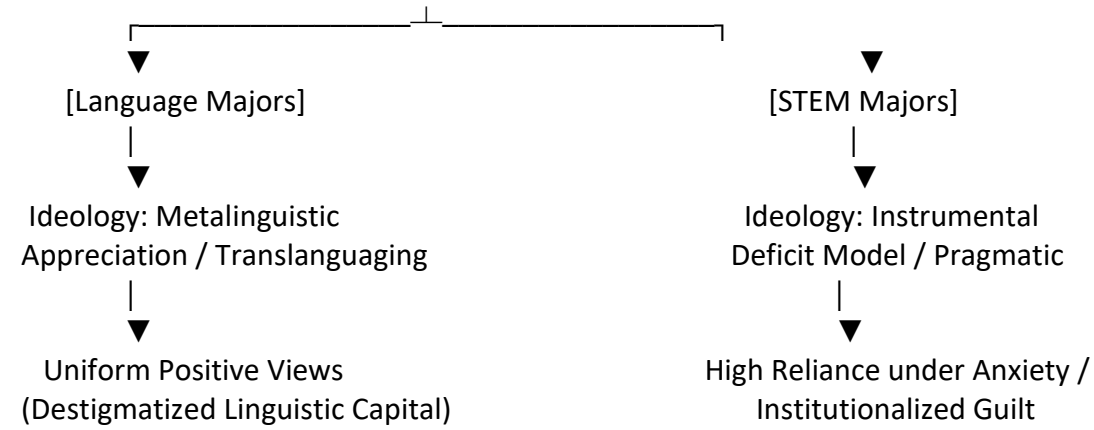
A key contribution of this study lies in isolating academic identity and disciplinary affiliation as major forces shaping sociolinguistic attitudes. The mixed-methods data show a sharp ideological divergence between language-related majors and STEM majors. Students socialized within Translation and Linguistics disciplines display significantly more positive, uniform attitudes toward CS across all subscales.

As illuminated by the qualitative interviews, this positive evaluation stems from their disciplinary socialization. These students are explicitly taught about bilingual processing, language contact phenomena, and translanguaging theory. As a result, they develop a highly sophisticated language ideology that destigmatizes L1 use, viewing CS not as a structural defect but as an advanced manifestation of a unified multilingual repertoire.

STEM students, on the other hand, exhibit a deeply conflicted, instrumental orientation. While they score exceptionally high on the *Subject Access* and *Classroom Management* dimensions under high-anxiety conditions, their overall attitudes remain significantly lower than those of language majors. This pattern can be explained by the intense institutional monolingual bias that characterizes science and medical faculties in the Arab world. STEM fields heavily prioritize exclusive target-language use, framing English as the sole language of international research and professional capital.

Consequently, STEM students internalize a deficit model. They rely heavily on Arabic to understand difficult scientific content and manage performance anxiety, yet they simultaneously experience institutional guilt, viewing their code-switching as an unfortunate obstacle to developing absolute English fluency.

Disciplinary Socialization Pathways



Synergizing the Interactive Framework

When all variables are integrated, the study demonstrates that classroom code-switching is a deeply nuanced practice governed by a learner's psychological, cognitive, and academic self-

concept. The highly significant Anxiety x Disciplinary Affiliation interaction highlights that anxiety is a much more potent driver of positive CS attitudes for STEM students than for language students. Because STEM environments lack a reflective, metalinguistic curriculum that normalizes natural bilingual practices, these students experience heightened vulnerability when their target-language capacity falters.
For these learners, code-switching becomes an essential, reactive defense mechanism against the pressures of an uncompromising "English-only" institutional environment.

Conclusion and Pedagogical Implications

Summary of the Study

This study investigated the complex structural relationships and interaction effects between self-perceived English proficiency, foreign language classroom anxiety, and disciplinary identity in shaping the attitudes of Arab university students toward classroom code-switching. Utilizing a sequential explanatory mixed-methods design, the empirical results challenge the traditional, linear view that L1 reliance is simply an inverse function of target-language proficiency.

The findings show that while overall attitudes toward CS are highly favorable, they are profoundly shaped by an interactive relationship between psychological anxiety and academic background. Anxiety emerged as the most powerful predictor of positive attitudes, with its influence being particularly pronounced among high-proficiency learners and students in STEM fields. Furthermore, the study demonstrated that a student's academic major serves as an ideological lens: language majors evaluate CS as a legitimate bilingual resource, whereas STEM majors view it as a practical necessity complicated by institutional stigma.

Pedagogical Implications

The empirical insights generated by this research have direct, actionable implications for language-in-education policies and classroom instruction across higher education in the Arab world:

1. **Dismantling Rigid "English-Only" Mandates:** Educational administrators must abandon strict, exclusionary target-language policies that pathologize L1 use. Enforced monolingualism ignores the cognitive and affective realities of the bilingual mind, causing unnecessary linguistic anxiety and emotional strain, especially in high-stress academic settings.
2. **Implementing Planned Translanguaging Frameworks:** Rather than allowing haphazard, guilt-induced code-switching, institutions should adopt structured, **"Planned Translanguaging"** frameworks. Educators should be trained to strategically leverage Arabic for high-level cognitive tasks—such as unpacking abstract theoretical paradigms, co-constructing complex meanings within the ZPD, and providing affective support—while maintaining clear, principled space for target-language production.
3. **Targeted Affective Interventions in STEM Disciplines:** Faculty development initiatives within STEM fields must explicitly address the emotional landscape of language learning. Technical instructors should be encouraged to use the L1 as a legitimate instructional scaffold, helping to reduce evaluation anxiety and eliminate the institutional stigma that currently burdens technical students.

Limitations and Directions for Future Research

While this study features a rigorous mixed-methods design and a large, stratified sample, certain limitations must be acknowledged. First, language proficiency was measured using self-perceived assessments. Although self-perceptions are highly predictive of affective orientations, future research should integrate standardized, objective language measures (e.g., IELTS or TOEFL scores) to confirm these interaction patterns. Second, the cross-sectional nature of the data limits the ability to draw firm causal conclusions. Longitudinal studies tracking students across their degree programs would offer valuable insights into how academic socialization shapes language ideologies over time.

Finally, future investigations should expand this interactive framework to include classroom observations and audio recordings of actual teacher-student interactions. This would allow researchers to directly compare students' stated attitudes with their real-time, natural translanguaging practices in the classroom.

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