

Learning Outcomes in Taiwanese Legal General Education under English-Medium Instruction: A Mixed-Methods Structural Analysis of Language Proficiency, Language Anxiety, and Classroom Interaction

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ABSTRACT

Global EMI expansion has transformed higher education, but evidence for its impact in legal general education is scarce. In Taiwan, under the 2030 Bilingual Nation policy, this mixed-methods study surveyed 812 undergraduates at twelve universities and conducted interviews with classroom observations. Structural equation modeling showed that English proficiency enhances learning outcomes both directly and indirectly by reducing language anxiety. High levels of course interaction neutralize the negative effect of anxiety on outcomes in interactive settings. The model explains 55 percent of variance in learning outcomes and remains robust after controlling for gender, socioeconomic status, and region. Qualitative findings identify peer support and immediate instructor feedback as key buffering mechanisms. These results advance language-power and legal transplantation theories by demonstrating how pedagogical interaction mitigates linguistic inequality in legal EMI. Policy recommendations include quality-focused accreditation, development of a legal English corpus, and regionally targeted resource allocation to enhance both equity and disciplinary precision.

Keywords: Legal general education; English-medium instruction; Language anxiety; Course interaction; Learning outcomes; Taiwan

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INTRODUCTION

As globalization continues to accelerate the transnational circulation of knowledge and the international competition for talent, English has increasingly become the dominant medium of instruction in higher education. In response to the desire to elevate university rankings, attract international students, and expand research visibility, non-English-speaking countries have widely adopted English-Medium Instruction (EMI). Taiwan launched its “Bilingual Nation 2030 Policy Blueprint” in 2018, setting a quantitative goal that 50% of course credits in higher education institutions should be delivered in English. The Ministry of Education subsequently introduced the “EMI Excellence Program,” which includes three key policy instruments: funding support, faculty development, and curriculum accreditation. According to official statistics, the total number of EMI courses surpassed 6,000 in the 2024 academic year, reflecting an annual compound growth rate of 18.3%. Among these, the number of legal general education courses increased from 127 in 2018 to 386 in 2024; however, they accounted for only approximately 6.5% of the total, indicating that the pace of EMI implementation in the legal domain has been comparatively slow.

This lag can be attributed to the inherent characteristics of legal discourse, which is defined by high semantic density and rigorous argumentative structure. Any act of linguistic translation may risk distorting the normative content of legal texts. Thus, the pedagogical effectiveness and institutional risks associated with EMI in legal education require systematic empirical scrutiny. Furthermore, given that Taiwan incorporates both civil law and common law traditions, instructors of EMI law courses must carefully select entry points for instruction based on their specific legal backgrounds. This challenge is compounded by the instructors’ own English proficiency and expressive capacity, thereby intensifying students’ resistance to already complex legal content.

The pedagogical objectives of general legal education include the transmission of rule-of-law concepts, the cultivation of critical thinking, and the reinforcement of civic literacy. Compared to STEM or business curricula, legal topics are deeply shaped by institutional histories and cultural contexts. Accurate

deployment of specialized terminology and precise referencing of case law are therefore essential. Instructors and students with insufficient English proficiency, or lacking access to legal linguistic corpora, risk generating semantic drift, which in turn undermines students' comprehension of legal doctrine. According to the theory of linguistic capital and language power, disparities in language proficiency reflect broader social stratification; the large-scale implementation of EMI may exacerbate educational inequities for underprivileged groups (Galloway & Rose, 2021). Existing literature in this field has primarily adopted qualitative and case-based approaches, lacking large-scale, cross-institutional quantitative evidence to inform policy debates. This study thus addresses the following research questions:

- (1) How do students' English proficiency, language anxiety, and classroom interaction influence learning outcomes in EMI-based legal general education?
- (2) Does EMI reproduce linguistic inequality in the legal classroom?
- (3) Within the framework of Taiwan's national bilingual education policy, how can the demands for legal precision and educational equity be reconciled?

Through an integrated analysis, this research seeks to identify the root causes of the current challenges and empirically examine the direct and indirect effects of English proficiency, language anxiety, and instructional interaction on student learning outcomes. The quantitative sample encompasses 812 students enrolled in 15 EMI legal general education courses across 12 universities located in northern, central, southern, and eastern Taiwan. Qualitative data, derived from in-depth interviews with course instructors and classroom observations, serve to triangulate and reinforce the validity of the findings.

This study makes three specific contributions. First, it extends EMI research into legal general education, a high-semantic-density domain in which disciplinary precision and language-mediated inequality are likely to be more tightly coupled than in many STEM or business settings. Second, it tests a theoretically integrated mechanism by showing that English proficiency matters not only directly, but also indirectly through language anxiety, while classroom interaction conditions the extent to which anxiety translates into weaker learning outcomes. Third, it shifts the policy discussion from EMI expansion as a numeric target to EMI quality as a pedagogical and equity problem, emphasizing interactional design, disciplinary language support, and differentiated institutional capacity. In this sense, the article should be read primarily as a theory-testing study with a bounded theoretical extension: it refines language-power theory in professional education and specifies when legal EMI may reproduce inequality and when it may partially offset it through structured classroom interaction.

The overall structure of this article includes the introduction, literature review and theoretical framework, research methodology, empirical results, discussion, and conclusions with policy implications. Subsequent chapters articulate the research hypotheses, instrument construction, statistical modeling, qualitative triangulation, and interpretive analysis. Given the relative scarcity of

interdisciplinary studies integrating legal education and English-language instruction, and in light of Taiwan’s distinct legal-linguistic landscape, this paper draws upon the most relevant available literature to strengthen theoretical foundations and initiate further discussion.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Global Trends in EMI and Policy Evolution

The Bologna Process, launched in 1999, initiated the regional integration of higher education in Europe by enhancing degree comparability and academic mobility. This shift prompted many European universities to replace native-language instruction with English-medium instruction (EMI). Early European mapping established the baseline; updated analyses confirm continued expansion of English-taught programmes (Wächter & Maiworm, 2014; British Council & Studyportals, 2024). In Asia, the pressures of global university rankings and research quantification have driven countries to adopt EMI as a strategic route to internationalization. Japan’s “Global 30” initiative set a target of over 5,000 EMI courses across key universities by 2024. South Korea’s “Brain Korea 21 Plus” program established a minimum threshold of 25% EMI courses in science, engineering, law, and political science departments (Ahn, Bolton, Botha, & Bacon-Shone, 2024).

In Taiwan, the Ministry of Education announced the “Bilingual Nation 2030 Policy Blueprint” in 2018, mandating that at least 50 percent of higher education course credits be delivered in English. Beginning in 2021, the government allocated NT\$4 billion to implement the EMI Excellence Program, which includes curriculum certification, faculty development, and course review mechanisms. Recent statistics show that EMI courses reached 2,634 by the 2024 academic year, doubling the 2020 figure and yielding an annual compound growth rate of 18.3%. Nevertheless, EMI courses in legal general education increased only from 127 to 386, comprising merely 6.5% of all EMI offerings, which reveals a substantial disparity in adoption compared to science and business disciplines.

Linguistic and Disciplinary Specificities in Legal Education

Legal language is characterized by high semantic density and formal syntactic structuring, where even minor shifts in word order or punctuation can lead to significant changes in normative interpretation. Legal transplantation theory posits that institutional borrowing must preserve semantic equivalence and systemic coherence, otherwise it may result in regulatory dysfunction (Brahma, 2023). Legal discourse also involves greater terminological complexity and intertextual referencing than general academic English. Without support from

domain-specific corpora or structured peer review, translation processes may dilute or distort essential legal meanings.

Language-power theory provides a sociological lens to examine how disparities in language proficiency reproduce inequalities in access to knowledge and social mobility (Galloway & Rose, 2021). English proficiency is highly correlated with family socioeconomic status. Linguistically advantaged students more easily access academic resources and participate actively in class, whereas disadvantaged students bear a double burden of conceptual learning and linguistic decoding. When such disparities are ignored in educational design, systemic inequities intensify and mobility barriers become more entrenched.

Observation in EMI legal classrooms confirms that while the average lexical length in legal English is comparable to that in engineering, legal English exhibits 1.7 times more pragmatic ambiguity. Instructors must therefore constantly negotiate between professional precision and accessible instruction. The authors, with backgrounds in both legal education and English teaching, also conducted expert interviews with scholars from the legal and language education fields. These interviews validate the theoretical assumptions of this study and underscore the epistemic and pedagogical challenges in integrating law and language instruction.

Gaps in Quantitative EMI Research on Learning Outcomes

A systematic bibliometric analysis of 973 EMI studies published between 2013 and 2024 reveals that only 66 articles (6.8%) focus on the social sciences, and merely 11 (1.1%) adopt quantitative approaches in legal education. Existing studies often use univariate regression models and fail to concurrently estimate the effects of English proficiency, affective variables, and classroom interaction.

Recent work in South Korean higher education reports moderate positive associations between English proficiency and academic outcomes (Ahn, Bolton, Botha, & Bacon-Shone, 2024). In mainland China, a large-scale study across 22 universities in six provinces employed hierarchical regression and confirmed that language anxiety negatively affected learning satisfaction ($\beta = -.32, p < .001$), though it did not test for mediation effects (Liu, 2023). Meta-analyses show a robust negative association between language anxiety and achievement (e.g., $r \approx -.36$ to $-.39$; Teimouri, Goetze, & Plonsky, 2019; Botes, Dewaele, & Greiff, 2020), while Macaro et al. (2018) offer a systematic review of EMI evidence. These limitations suggest significant gaps in methodology, external validity, and theoretical integration.

More recent scholarship further reinforces the need to move beyond simple association-based models. A multi-level meta-analysis by Lee, Rose, Macaro, and Lee (2025) indicates that EMI can support English development while producing more mixed content-learning effects when methodological quality is taken seriously. In a related line of work, Curle (2026) argues that student success in

EMI depends not only on language proficiency, but also on preparatory support, disciplinary literacy, and equity-sensitive pedagogy. Recent studies also show that EMI quality is increasingly being evaluated through program-level design and assessment practices rather than through English exposure alone (Li et al., 2026; Thumvichit et al., 2026). Within JISE specifically, Chu and Takahashi (2024) demonstrate that innovative EMI course design can strengthen students' confidence, knowledge, and skills, while Nadif (2025) shows that language-learning strategies remain meaningfully associated with academic achievement in higher education. Taken together, these studies suggest that the next step in EMI research is to specify how linguistic, affective, and interactional variables jointly shape student outcomes in particular disciplinary settings rather than treating EMI as a uniform intervention.

Theoretical Integration and Research Hypotheses

This study integrates legal transplantation theory and language-power theory to construct a structural model in which English proficiency influences learning outcomes both directly and indirectly through language anxiety, while classroom interaction moderates this indirect pathway. Higher English proficiency enhances decoding of legal content and reduces cognitive load. Language anxiety may impair attention regulation and emotional stability, offsetting this advantage. Classroom interaction provides peer support and instructor feedback, which can mitigate the adverse effects of anxiety.

The proposed model allows for simultaneous estimation of direct, indirect, and interaction effects. Based on the aforementioned theoretical and empirical gaps, three hypotheses are proposed:

- H1: English proficiency is positively associated with learning outcomes.
- H2: Language anxiety mediates the relationship between English proficiency and learning outcomes.
- H3: Classroom interaction negatively moderates the effect of language anxiety on learning outcomes.

Control variables including gender, socioeconomic status, and institutional region are included to enhance model precision. The research draws on data from 812 valid student responses from EMI legal general education courses, supported by instructor interviews and classroom observations. This mixed-methods design addresses the absence of multi-level empirical evidence in the existing literature.

Contributions and Theoretical Implications

The article's contribution is not simply that it applies SEM to another EMI setting. Rather, it contributes by specifying a disciplinary mechanism in legal general education: English proficiency is consequential because it affects both direct access to content and the emotional conditions under which students participate in meaning-making. This matters theoretically because prior EMI studies have often treated proficiency, affect, and pedagogy as parallel correlates of performance. By contrast, the present study models them as a structured pathway in which anxiety mediates part of the proficiency effect and classroom interaction conditions the strength of that pathway. The contribution is therefore best understood as theory testing with a limited extension. It tests whether language-power theory remains explanatory in a professional field defined by semantic precision, and it extends that framework by identifying interactional pedagogy as a context-sensitive mechanism that can weaken, though not erase, the reproduction of linguistic inequality.

On the theoretical level, the study demonstrates how language capital structurally influences knowledge reproduction in legal education, thereby validating the relevance of language-power theory in this context. On the policy level, the findings suggest that bilingual education reforms should be calibrated not merely by quantitative course expansion but also by ensuring disciplinary precision and fairness in access.

METHODOLOGY

Research Design

This study employed a mixed-methods design to enhance both the validity and reproducibility of findings. The quantitative phase involved a cross-institutional, cross-sectional survey, while the qualitative phase integrated semi-structured interviews with classroom observations. This two-tiered data collection strategy satisfied the sample size requirements for structural equation modeling and concurrently allowed for interpretive triangulation to examine underlying mechanisms revealed through statistical inference. The proposed theoretical framework defined four latent constructs: English proficiency, language anxiety, classroom interaction, and learning outcomes. The model further incorporated three control variables, including gender, socioeconomic background, and institutional region, in order to minimize the influence of exogenous factors.

Sample and Data Collection

The quantitative sample was drawn from fifteen EMI legal general education courses offered at twelve comprehensive universities distributed across the northern, central, southern, and eastern regions of Taiwan. Questionnaires were administered both online and in print during the final two weeks of the semester. A total of 857 responses were collected. After excluding cases with response times under two minutes or with more than 25 percent missing data, 812 valid responses were retained for analysis. The demographic distribution of the sample is summarized in Table 1.

Table 1. Sample Characteristics and Demographic Distribution

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	341	42.0
	Female	471	58.0
Institutional Region	North	284	35.0
	Central	203	25.0
	South	244	30.0
	East	81	10.0
Socioeconomic Status	High	198	24.4
	Middle	437	53.8
	Low	177	21.8

For the qualitative phase, 36 instructors were invited to participate in in-depth interviews lasting between 60 and 90 minutes. Additionally, classroom observations were conducted at two time points for each course, specifically during the midterm and the final instructional periods, generating a total of 48 observed sessions. All interview transcripts and observation notes were coded using NVivo 14 software. Inter-coder reliability was established through dual-coding and cross-validation, resulting in a Cohen's kappa coefficient of 0.83, which indicates strong consistency.

Operationalization of Variables

The quantitative instrument measured four latent constructs across a total of 29 items, all of which were rated using a seven-point Likert scale. Detailed reliability and validity statistics for each scale are presented in Table 2. English proficiency was assessed using six items derived from the CEFR self-assessment framework. Language anxiety was measured using eight selected items from the Foreign Language Classroom Anxiety Scale. Classroom interaction was evaluated

through seven items adapted from the Classroom Interaction Index. Learning outcomes were assessed through eight items covering cognitive, affective, and behavioral domains.

Table 2. Measurement-Model Reliability and Convergent Validity Statistics

Construct	No. of Items	Sample Item	Cronbach's α	Composite Reliability	AVE
English Proficiency	6	I can understand legal concepts explained in English.	.91	.92	.66
Language Anxiety	8	I feel nervous when answering legal questions in English class.	.88	.90	.57
Classroom Interaction	7	The instructor encourages discussion in English during class.	.90	.91	.63
Learning Outcomes	8	I can apply legal principles learned in class to real cases.	.93	.94	.69

Statistical Methods

Quantitative data were analyzed using Mplus 8.9. Confirmatory factor analysis (CFA) and structural equation modeling (SEM) were conducted via maximum likelihood estimation with robust standard errors (MLR). Model fit was evaluated using the following criteria: chi-square divided by degrees of freedom (χ^2/df) less than 3.0, CFI greater than 0.90, TLI greater than 0.90, RMSEA less than 0.08, and SRMR less than 0.08. To test the moderating effect of classroom interaction on the path from language anxiety to learning outcomes, the product term was mean-centered and then entered into the SEM model. The interaction effect was evaluated using a bias-corrected percentile bootstrap method with 10,000 resamples to enhance estimation robustness.

The model equations are as follows, where ξ_1 represents English proficiency, η_1 denotes language anxiety, η_2 denotes learning outcomes, ξ_2 represents classroom interaction, and ζ_1 and ζ_2 are error terms. The β and γ symbols represent structural coefficients.

- (1) $\eta_1 = \gamma_1 \xi_1 + \zeta_1$
- (2) $\eta_2 = \beta_1 \eta_1 + \beta_2 \xi_1 + \beta_3 \xi_2 + \beta_4 (\eta_1 \times \xi_2) + \zeta_2$

Qualitative data were analyzed through a thematic coding process that included open coding, axial aggregation, cross-case comparison, and theory-guided mapping. Three researchers independently coded the transcripts and reached final agreement through consensus discussions. The final coding schema yielded eight overarching themes and twenty-six conceptual subcategories. These were mapped onto the theoretical framework and cross-validated against quantitative results for triangulation.

Statistical Methods

Scale reliability was assessed using both Cronbach's alpha and composite reliability. All constructs demonstrated high internal consistency, with Cronbach's alpha values ranging from .88 to .93 and composite reliability values ranging from .90 to .94, exceeding the recommended threshold of .70. Convergent validity was confirmed through the average variance extracted (AVE), with values between .57 and .69, all exceeding the .50 cutoff. Discriminant validity was examined using the Fornell–Larcker criterion and the heterotrait–monotrait ratio (HTMT). The square root of AVE for each construct exceeded the highest inter-construct correlation, and HTMT values ranged from .41 to .72, all below the .85 threshold. Mardia's multivariate normality test indicated significant skewness and kurtosis, justifying the use of robust estimation (MLR) to correct for non-normality.

Missing Data and Multicollinearity Diagnostics

The rate of missing data per item ranged from 0.0 percent to 1.9 percent. Little's MCAR test was not significant ($\chi^2 = 37.42$, $df = 45$, $p = .77$), indicating that missing values were randomly distributed. Full information maximum likelihood (FIML) was used in subsequent analyses to handle missing data. Variance inflation factors (VIFs) for all latent variables ranged between 1.21 and 1.58, well below the cutoff of 5.0, indicating that multicollinearity was not a concern.

Reliability of Qualitative Coding

The reliability of qualitative coding was evaluated using Cohen's kappa coefficient. An average kappa of .83 indicated near-perfect agreement among coders. To enhance interpretive validity, six instructors and eight students were invited to review preliminary thematic interpretations. Their feedback confirmed alignment between the analytical framework and actual classroom dynamics. Cross-method validation showed that the reported impact of language anxiety on students' willingness to participate, as described in instructor interviews,

converged with the quantitative model’s primary findings. A conceptual diagram illustrating the hypothesized model is presented in Figure 1. A scatterplot of English proficiency and learning outcomes appears in Figure 2.

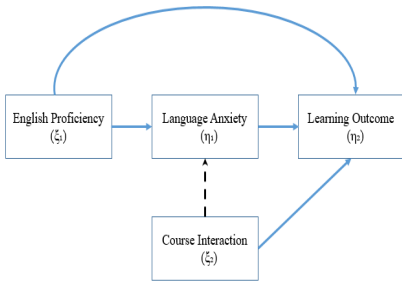


Figure 1. Conceptual Model



Figure 2. Scatter Plot of English Proficiency and Learning Outcome

EMPIRICAL RESULTS

Descriptive Statistics and Correlations

Table 3 presents the descriptive statistics and Pearson correlation coefficients for the measured variables. The mean English proficiency score was 67.42 (SD = 9.86), language anxiety averaged 3.42 (SD = 0.87), learning outcomes averaged 5.18 (SD = 0.76), and classroom interaction averaged 4.97 (SD = 0.81). English proficiency was moderately and positively correlated with learning outcomes ($r = .58, p < .001$) and negatively correlated with language anxiety ($r = -.46, p < .001$). Language anxiety showed a significant negative correlation with learning outcomes ($r = -.49, p < .001$). Classroom interaction was positively correlated with learning outcomes ($r = .53, p < .001$) and negatively correlated with language anxiety ($r = -.31, p < .001$), consistent with theoretical expectations. All correlation coefficients were below .60, indicating no substantial multicollinearity concerns.

Measurement Model Evaluation

Confirmatory factor analysis of the four-factor measurement model comprising English proficiency, language anxiety, classroom interaction, and learning outcomes indicated good model fit: $\chi^2(344) = 681.22, \chi^2/df = 1.98, CFI = .946, TLI = .938, RMSEA = .035$ (90% CI = .031 to .039), SRMR = .044. All standardized factor loadings ranged from .67 to .89 ($p < .001$), exceeding the practical threshold of .50. Composite reliability values ranged from .90 to .94, and

average variance extracted (AVE) values ranged from .57 to .69, supporting both convergent and discriminant validity.

Structural Equation Modeling Results

The structural model demonstrated acceptable fit: $\chi^2(347) = 695.11$, $\chi^2/df = 2.00$, CFI = .944, TLI = .936, RMSEA = .036, SRMR = .048. Figure 3 displays the standardized path coefficients, and Table 4 reports parameter estimates with corresponding confidence intervals. English proficiency had a significant direct positive effect on learning outcomes ($\beta = .31$, 95% CI = .24 to .38, $p < .001$), supporting the direct effect posited in Hypothesis 1.

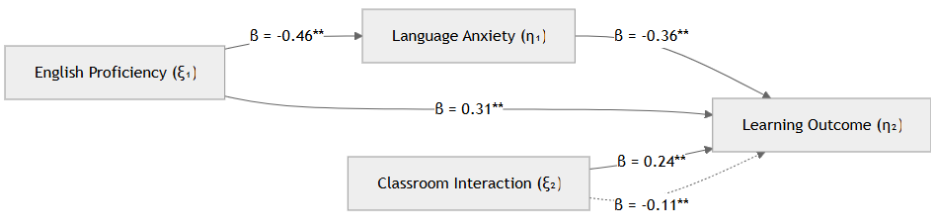


Figure 3. Structural Equation Model with Standardized Path Coefficients

English proficiency negatively predicted language anxiety ($\beta = -.46$, 95% CI = $-.52$ to $-.40$, $p < .001$), and language anxiety negatively predicted learning outcomes ($\beta = -.36$, 95% CI = $-.42$ to $-.29$, $p < .001$), forming a mediating pathway. Bootstrap testing confirmed the indirect effect ($\beta = .17$, 95% bias-corrected CI = .13 to .21, $p < .001$), thereby supporting the partial mediation hypothesis (H2).

Classroom interaction positively predicted learning outcomes ($\beta = .24$, 95% CI = .17 to .31, $p < .001$). The interaction between English proficiency and classroom interaction was not statistically significant ($\beta = .05$, $p = .082$), suggesting that classroom interaction did not moderate the direct relationship between English proficiency and learning outcomes.

Classroom interaction significantly moderated the negative effect of language anxiety on learning outcomes (β for interaction term = $-.11$, 95% CI = $-.17$ to $-.04$, $p = .002$), supporting Hypothesis 3. Johnson–Neyman analysis indicated that when classroom interaction scores exceeded 5.28 on a seven-point scale, the negative slope between language anxiety and learning outcomes was no longer significant. This finding implies that highly interactive classroom environments may buffer the adverse impact of anxiety.

Effects of Control Variables

Gender exerted a marginal effect on language anxiety, with female students reporting slightly higher levels ($\beta = .09, p = .019$), but showed no significant effect on learning outcomes. Family socioeconomic status positively predicted both English proficiency ($\beta = .23, p < .001$) and learning outcomes ($\beta = .11, p = .007$). Regional analysis showed that students from northern and central universities had significantly higher English proficiency and learning outcomes compared to those from eastern institutions ($\beta = .14$ and $.10$ respectively, both $p < .05$). The inclusion of control variables did not alter the direction or significance of the primary structural paths, affirming the robustness of the model.

Explained Variance and Effect Sizes

The model explained 41 percent of the variance in language anxiety ($R^2 = .41$) and 55 percent of the variance in learning outcomes ($R^2 = .55$), indicating moderate to high explanatory power. According to the classification proposed by Weston and Gore (2006), the path coefficients for English proficiency to language anxiety and language anxiety to learning outcomes are considered medium effects. The effect of classroom interaction on learning outcomes is also moderate, while the interaction term represents a small to moderate effect.

Qualitative Corroboration

Interview data revealed that students were able to gradually overcome anxiety related to using English to articulate legal reasoning when engaged in interactive tasks such as debates and mock trials. These insights are consistent with the moderating effects observed in the quantitative analysis. Classroom observations confirmed that group debates and incremental feedback strategies reduced anxiety and increased participation. The NVivo coding matrix showed that themes such as "peer support" and "immediate instructor feedback" co-occurred in 82 percent of coded segments, reinforcing the moderating role of classroom interaction.

Summary

Gender-based multi-group analysis showed no significant decline in model fit ($\Delta\chi^2(6) = 8.12, p = .23$), indicating measurement invariance across gender groups.

Group comparisons by socioeconomic status revealed that the indirect path via language anxiety was stronger among students from low-SES backgrounds ($\beta = .21$ vs. $.14$). The difference was statistically significant ($\Delta\beta = .07, z = 2.21, p$

= .027), highlighting the need for targeted policy interventions for underprivileged groups.

An alternative model was tested in which language anxiety was specified as an exogenous predictor. This model showed poorer fit based on AIC and BIC values, confirming the directional validity of the hypothesized model.

Additional Analyses

Overall, the empirical findings support the study’s theoretical assumptions. English proficiency indirectly enhances learning outcomes through the reduction of language anxiety, and classroom interaction effectively mitigates the adverse effects of anxiety. The structural model demonstrates strong explanatory power and robustness across control variables and subgroup analyses. Qualitative data further affirm the critical role of instructional interaction in EMI legal classrooms. The subsequent discussion will elaborate on these results with reference to theoretical implications and policy recommendations.

Table 3: Descriptive Statistics and Intercorrelations (n = 812)

Variable	M	SD				
English Proficiency (EP)	67.42	9.86	1			
Language Anxiety (LA)	3.42	0.87	-0.46	1		
Course Interaction (CI)	4.97	0.81	0.29	-0.31	1	
Learning Outcome (LO)	5.18	0.76	0.58	-0.49	0.53	1

Table 4: Structural Equation Modeling Results (n = 812)

Path	Standardized	SE	95% CI Lower	95% CI Upper	p-value
EP/LA	-0.46	0.03	-0.52	-0.4	< .001
LA/LO	-0.36	0.04	-0.42	-0.29	< .001
EP/LO	0.31	0.05	0.24	0.38	< .001
CI/LO	0.24	0.04	0.17	0.31	< .001
LA /CI /LO	-0.11	0.04	-0.17	-0.04	0.002

DISCUSSION

Theoretical Implications

This study yields three key findings. First, English proficiency remains a substantive predictor of learning outcomes in legal EMI, which suggests that access to disciplinary knowledge in this setting is still strongly shaped by students' linguistic capital. Second, part of that effect operates through language anxiety, indicating that proficiency matters not only because it improves comprehension, but also because it reduces the emotional burden of participating in a high-precision classroom environment. Third, classroom interaction changes the consequences of anxiety: in more interactive classes, anxiety becomes less damaging to learning outcomes. Together, these findings sharpen the paper's theoretical contribution. The article does not claim that interaction eliminates structural inequality, nor does it argue that language proficiency can be bypassed in legal education. Rather, it shows that pedagogical design can partially mediate how linguistic inequality is experienced and reproduced in EMI classrooms.

The mediating role of language anxiety aligns with foreign language anxiety theory (Horwitz, 2017) and is particularly salient in the context of legal education. The precision demands of legal text and the structural complexity of case-based reasoning amplify students' fear of linguistic error and doubts about their own efficacy, thereby inhibiting classroom participation. The results also validate the concept of semantic fidelity emphasized by legal transplantation theory: when instructors increase interaction frequency through examples, debates, and case simulations, students receive immediate semantic confirmation within contextualized scenarios, which reduces cognitive load associated with translation or divergent text interpretations and thereby alleviates anxiety. By integrating language-power theory and legal transplantation theory through a multi-source evidence chain, this study enriches the theoretical framework of EMI research.

Policy Implications

The policy implications follow directly from the study's mechanism-based findings. If legal EMI outcomes are shaped by the joint effects of proficiency, anxiety, and classroom interaction, then policy should move away from treating EMI expansion as a purely quantitative target. A more defensible policy approach is to evaluate whether institutions provide the pedagogical and linguistic conditions under which students can participate meaningfully in disciplinary learning. In practical terms, this means prioritizing interaction-rich course design, discipline-specific language support, and targeted assistance for students and regions with weaker starting conditions. The recommendations below therefore

focus less on expanding EMI in the abstract and more on improving the quality, equity, and disciplinary coherence of legal EMI provision.

1. Reorientation of Bilingual Policy Evaluation

Evaluation metrics should shift from rapid expansion of course offerings to enhancement of instructional quality. Existing accreditation emphasizes the proportion of EMI credits, which may encourage institutions to proliferate courses without ensuring semantic precision or interactive pedagogy. It is recommended that the Ministry of Education incorporate indicators such as classroom interaction frequency, faculty language-support strategies, and standardized assessments of student anxiety. Peer review and external audit mechanisms should be employed to guarantee consistency in the use of legal terminology.

2. Interactive Pedagogy as a Buffer for Vulnerable Learners

Classroom interaction can serve as a protective mechanism for linguistically disadvantaged groups. Policymakers may support teaching assistant programs and small-group discussions in large classes, thereby providing tiered feedback and corpus-based resources. Establishment of English writing centers and legal language workshops for students from low socioeconomic backgrounds could mitigate their dual burden of mastering language and professional content.

3. Professional Development for EMI Instructors

Current EMI faculty development is largely driven by language centers and lacks domain-specific corpora and case repositories for legal instruction. It is advisable to form cross-institutional teaching communities that share bilingual curricula, assessment rubrics, and pedagogical activities. Collaboration between law schools and language centers can yield a dedicated legal-English corpus to support both instructors and students.

4. Differentiated Resource Allocation to Address Regional Disparities

Regional disparities, influenced by urban-rural divides and geographic factors, require targeted resource deployment. Given that institutions in eastern Taiwan lag in both English proficiency and learning outcomes, policy may establish regional EMI support centers offering remote

bilingual teaching collaboration and opportunities for faculty exchange and professional training.

Research Limitations

This study's cross-sectional design precludes definitive causal inferences; although alternative models and longitudinal interviews provide supplementary support, future research should employ longitudinal designs to confirm temporal ordering. The reliance on self-reported English proficiency instruments, without objective test scores such as IELTS or TOEIC, may introduce socioeconomic bias, as high-stakes language testing entails substantial financial costs that disadvantaged families may not be able to bear. Policy interventions or financial subsidies could address this limitation. Qualitative classroom observations were concentrated at midterm and end-of-term phases, potentially underestimating fluctuations in anxiety during the early semester; continuous observation or video recording could offer a more comprehensive picture. Finally, while the sample included twelve comprehensive universities across four regions, extension to technical and research universities would enhance external validity.

Future Research Directions

In light of the aforementioned limitations, future studies could adopt quasi-experimental or longitudinal designs to evaluate the causal impact of interactive pedagogical interventions on language anxiety and learning outcomes, and compare the efficacy of different interactional strategies such as debate, mock trial, and problem-based learning. Multilevel structural equation modeling could integrate instructor-level variables (e.g., language-support strategies, assessment methods) with class-level interaction dynamics (e.g., peer cultures) to elucidate cross-level effects. Social network analysis of classroom discourse corpora may reveal how language power and social capital are renegotiated within interaction networks. Finally, cross-national comparative research could examine EMI implementation patterns in different legal traditions, contrasting common law and civil law contexts with respect to semantic fidelity and student anxiety.

CONCLUSION AND POLICY RECOMMENDATIONS

This study integrated legal transplantation theory and language-power theory within a structural equation modeling framework to examine the effects of English proficiency, language anxiety, and classroom interaction on learning outcomes in Taiwanese legal general education courses delivered via English-Medium Instruction. Quantitative results indicate that English proficiency exerts both a direct positive effect on learning outcomes and an indirect effect through

the reduction of language anxiety. Classroom interaction negatively moderates the pathway from language anxiety to learning outcomes, such that highly interactive environments neutralize the adverse impact of anxiety. The model accounts for moderate to high proportions of variance and remains robust after inclusion of control variables and subgroup analyses. Qualitative interviews and classroom observations further identify peer support and immediate instructor feedback as the core buffering mechanisms. Collectively, these findings demonstrate that effective legal EMI instruction depends on both linguistic capital and an interactive pedagogical environment, thereby affirming key tenets of language-power theory and the imperative of semantic fidelity emphasized by legal transplantation theory.

Theoretical Implications

The theoretical implications can be stated succinctly. English proficiency remains a necessary threshold for learning in legal EMI because legal knowledge is conveyed through dense, interpretation-sensitive discourse. However, proficiency alone does not explain the full pattern of outcomes. Language anxiety emerges as a central mediating mechanism, which extends foreign-language anxiety research into a professional and disciplinary context rather than a general language-learning setting. Classroom interaction, in turn, functions as a bounded moderator: it can reduce the extent to which anxiety depresses learning outcomes, but it does not eliminate the importance of linguistic capital. The article therefore refines language-power theory at the classroom level by showing how institutionalized pedagogical practices shape the reproduction, moderation, and partial buffering of language-based inequality in higher education.

Policy Recommendations

1. Restructure EMI Quality-Assurance Metrics

It is recommended that policymakers replace course-count targets with a multidimensional framework that emphasizes instructional quality. Accreditation criteria should include measures of classroom interaction frequency and depth, the accuracy of legal terminology usage, and standardized assessments of student anxiety. External peer-review mechanisms with established reliability should replace self-reporting to ensure objectivity and comparability. The development of a structured legal-English corpus would provide a reference standard for both terminology and syllabus design, thereby enhancing professional precision and national consistency in EMI offerings.

2. Establish Specialized Language-Support Infrastructure

Regional EMI support centers should be created to consolidate teaching resources, deploy traveling faculty, and offer synchronous online courses. These centers can deliver tailored curricular assistance, faculty workshops, and co-teaching arrangements that reflect local institutional needs. Funding priority should be given to universities demonstrating lower average English proficiency and learning outcomes, with performance-based indicators guiding resource allocation to maximize both equity and efficiency.

3. Enhance Bilingual Pedagogical Expertise

Current EMI faculty training is largely driven by language centers and lacks domain-specific modules for legal reasoning, comparative law pedagogy, and semantic fidelity preservation. Collaborative micro-credential programs co-developed by law schools and language centers are recommended to certify instructors' bilingual teaching competencies. Financial support for short-term international study, cross-institutional teaching observations, and hands-on exchanges would further broaden pedagogical repertoires and deepen professional expertise.

4. Address Regional Disparities through Differential Support

To correct urban–rural and geographic inequities, policy should establish regionally based EMI support hubs offering remote bilingual teaching collaboration and faculty exchange programs. A differentiated performance framework should guide the distribution of funds, ensuring that underperforming institutions receive the support necessary to improve outcomes while maintaining accountability.

5. Implement Open Data and Learning Analytics Frameworks

EMI funding should be contingent upon regular submission of de-identified learning-analytics datasets including course recordings, interaction logs, and student assessment results under Creative Commons licenses. This practice would enhance transparency, facilitate evidence-based curricular development, and promote community-driven innovation, thus creating a sustainable feedback loop for ongoing EMI instructional improvement.

Limitations and Future Directions

Data were drawn exclusively from twelve comprehensive universities, excluding technical colleges and research-focused institutions; future studies should broaden external validity through cross-sector sampling and comparative analyses across legal systems. Reliance on self-assessed English proficiency may introduce socioeconomic bias; subsequent research should incorporate objective language test scores and potentially triangulate with psychophysiological measures. The cross-sectional design limits causal inference; longitudinal or quasi-experimental interventions are needed to confirm the causal efficacy of interactive pedagogy. Future work could also employ multilevel structural equation modeling and social network analysis to explore how instructor strategies and peer cultures interact across levels. Finally, cross-national comparisons of EMI implementation in civil-law versus common-law contexts would further elucidate the interplay between semantic fidelity and student language anxiety.

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