*Design Dialogue Journal*

# Linguistic Thresholds in the Architecture Studio: The Role of Language Proficiency in the Academic Experience of International Students in Architectural Higher Education

Shahab Miri [1]* , Pooya Lotfabadi [2]

[1] School of Foreign Languages, Final International University, Beşparmaklar Avenue, No: 6, Çatalköy, Girne, Turkey.

[2] Faculty of Architecture and Fine Arts, Final International University, Beşparmaklar Avenue, No: 6, Çatalköy, Girne, Turkey.

* Correspondence: shahab.miri@final.edu.tr

The architecture design studio is, by most accounts, among the most linguistically intensive pedagogical environments in higher education, a space where verbal argumentation, critical dialogue, and disciplinary rhetoric are as integral to learning as drawing, model-making, and spatial thinking. Yet the implications of this linguistic intensity for international students studying architecture in a language other than their first remain remarkably underexplored in the literature. This paper examines how language proficiency shapes the academic trajectories of international students in architectural higher education, moving across three interconnected analytical registers: cognitive and academic performance; participation in the studio's signature pedagogical formats; and social integration and identity formation. Drawing on established theoretical frameworks from applied linguistics and education studies, and building on empirical research into architecture studio pedagogy and its learning mediums, the discussion argues that language competence operates as a structuring force in the architecture school experience, one that mediates students' ability to participate in critique sessions and jury presentations, to engage with theoretical and historical discourse, to form productive peer relationships, and ultimately to construct the kind of critical professional identity that architectural education aspires to cultivate. The paper concludes by considering the institutional and pedagogical responses that might better serve the genuinely diverse student populations that internationalized architecture schools now host, and the responsibilities that fall to architecture educators in particular.

**Keywords**: Architectural education, Design studio, Language proficiency, International students, Jury critique.

Received: 09 June 2026
Accepted: 26 June 2026
Published: 30 June 2026



## 1. Introduction

Architecture schools around the world have, over the past two decades, become substantially more international in the composition of their student bodies. Whether driven by institutional ambition, tuition-revenue strategies, or a genuine commitment to cultural diversity, architecture faculties across the United Kingdom, continental Europe, North America, Australia, and across the Middle East and Asia now regularly enroll cohorts in which international students constitute a significant, sometimes majority. proportion.

At institutions operating explicitly within internationalized contexts, such as those across Northern Cyprus and the broader Eastern Mediterranean region, the architecture school draws students from multiple national and linguistic backgrounds for whom the language of instruction may be a second, third, or additional language.

This demographic reality generates a set of pedagogical challenges that the architecture education research community has been slow to address directly. Knight [1] has argued that genuine internationalization requires more than cross-border student mobility: it demands deliberate integration of intercultural and global dimensions into institutional purpose, pedagogy, and student support, including, though this dimension is rarely stated explicitly, the language dimensions of teaching and learning. The specific context of English-medium instruction in non-anglophone higher education settings adds further complexity: Macaro and colleagues [2], in a comprehensive systematic review of EMI research across multiple national contexts, found that students in English-medium programs consistently face challenges in lecture comprehension, academic writing, and oral participation that are strikingly similar to those documented in the international student literature more broadly. These challenges do not resolve automatically over time, but rather require deliberate institutional and pedagogical responses that most architecture schools have yet to develop.

Research on the architecture design studio has expanded considerably in recent years, examining its social dynamics, assessment frameworks, and evolving pedagogical formats, including, more recently, its relationship to emerging digital and artificial intelligence tools [3, 4]. These contributions have enriched the collective understanding of how students learn in the studio, what factors predict their success, and how the studio's characteristic formats can be refined to support deeper learning. What has received comparatively little systematic attention, however, is the way in which language competence, or its varying degrees of development, mediates the studio experience for students who are simultaneously learning to design and learning to argue, critique, and reflect in an unfamiliar tongue.

Boyer and Mitgang [5], in their foundational examination of the state of architectural education, argued that the architecture school must function as more than a site of technical and spatial training: it should cultivate students' capacity for critical thought, ethical judgment, and communicative engagement across a wide range of publics and disciplinary contexts. This communicative aspiration sits in productive but underexamined tension with the linguistic realities facing many international students, who may arrive with sophisticated spatial intelligence and design capability but without the language resources to demonstrate, defend, or develop these capabilities within the studio's verbal culture.

The present paper examines the effects of language proficiency on the academic experience of international students in architectural higher education. It proceeds through several interconnected analytical layers: the theoretical frameworks through which language competence in academic settings is best understood; the relationship between language proficiency and academic performance specific to architecture; the particular language demands embedded in the studio's core learning events; and the social and identity-related dimensions of studying architecture in a second language. The discussion draws throughout on empirical research in architecture studio pedagogy [3, 4] alongside established scholarship in applied linguistics and educational studies. The argument developed is that language operates in the architecture school not merely as a facilitating medium but as a structuring force, one whose effects on international students require sustained and specific pedagogical attention.

## 2. Theoretical Frameworks: Language Competence in Academic Contexts

Any serious discussion of language effects in higher education must begin by distinguishing between the different kinds of language competence that academic contexts actually demand. The distinction developed by Cummins [6] between Basic Interpersonal Communicative Skills (BICS) and Cognitive Academic Language Proficiency (CALP) remains central to this analysis. BICS refers to context-embedded, cognitively undemanding language use characteristic of everyday social interaction, casual conversation, procedural exchange, and informal communication. Most students achieve functional BICS within one to two years of sustained exposure to a new language. CALP refers to the decontextualized, cognitively demanding language use required for academic reading, argumentation, and formal disciplinary discourse, the kind of language the architecture school demands in its most challenging pedagogical moments. CALP acquisition is considerably slower, commonly requiring five to seven years of active engagement.

The practical implications of this distinction for architectural education are significant and insufficiently appreciated. A student who is conversationally fluent in English, who can discuss a project informally with peers, navigate campus social life, and engage in easy exchange with instructors, may still struggle profoundly when required to articulate a design rationale in a jury setting, to engage with the complex theoretical vocabulary of architectural discourse, or to produce a written essay that situates a studio project within broader intellectual and cultural traditions. The gap between surface social fluency and academic language proficiency is real and consequential, yet it can remain invisible to both the student and their instructors, generating misreadings of student difficulty that lead to unhelpful institutional responses.

Lea and Street's [7] academic literacies framework offers a complementary analytical lens. Their argument that academic literacy is always discipline-specific, institutionally situated, and bound up with questions of power and identity is especially apt in the architecture school context. Architecture education has its own highly particular discourse traditions: the critical language of spatial experience, the technical vocabulary of construction and materiality, the cultural-philosophical vocabulary of design theory, and the distinctive rhetorical conventions of the public critique. Students entering architecture school from different national and educational backgrounds bring with them different relationships to these conventions, and the gap between prior academic discourse experience and that expected in the architecture school can be substantial, even for students who are native English speakers. For international students, this disciplinary language acquisition challenge is layered on top of the second-language challenge in ways that create a compounded and largely unacknowledged burden.

Norton's [8] work on language learning and identity adds a dimension that is particularly significant in the architecture education context. Norton argues that language acquisition is inseparable from the ongoing construction of social and professional identity, and that learners' investment in a language is shaped profoundly by the social conditions and power relations within which they encounter it. Architecture students are in the active process of constructing professional identities as designers, identities defined substantially through verbal as well as visual practice. If the social environment of the architecture school marginalizes or silences students whose language is still developing, the damage is not merely linguistic: it potentially disrupts the formation of the professional self that architectural education most fundamentally aims to cultivate. Duff's [9] work on language socialization into academic discourse communities reinforces this point: acquiring disciplinary language is fundamentally a social process in which students gain competence

through sustained, legitimate participation in the communicative practices of their target field. Students who are excluded from full participation in the verbal life of the studio, through language anxiety, reduced intelligibility, or social marginalization, are simultaneously being excluded from the primary mechanism through which disciplinary language is acquired.

Finally, Krashen's [10] input hypothesis offers an important pedagogical corollary: language acquisition proceeds most effectively in conditions of comprehensible input and reduced anxiety. The architecture jury, with its public performance character, its real-time verbal demands, and the social stakes attached to peer and faculty evaluation, is precisely the kind of high-anxiety environment that Krashen's framework identifies as inimical to language development. This creates an ironic situation: the studio's most linguistically demanding event may simultaneously be one of the least conducive to the language development of students who most need it, unless deliberate pedagogical scaffolding is built into the format from the outset.

## 3. Language Proficiency and Academic Performance in Architectural Education

The empirical literature on language proficiency and academic performance in higher education consistently identifies language as a significant predictor of academic outcomes, particularly in disciplines that rely heavily on written and verbal argumentation. Andrade [11], in a comprehensive review of international student challenges across anglophone universities, found language to be the single most consistently cited source of academic difficulty, with lecture comprehension and academic writing emerging as the two areas of greatest sustained challenge. In quantitatively oriented disciplines, language proficiency tends to be a weaker predictor of performance. In design-oriented and humanities-inflected disciplines like architecture, where verbal and written reasoning constitute primary modes of knowledge-making, the effects are likely considerably stronger, though detailed discipline-specific studies of architecture students' language needs remain surprisingly scarce in the research literature.

One of the most underacknowledged consequences of second-language operation in higher education is cognitive load. Sweller's [12] foundational work on cognitive load theory established that working memory has finite capacity, and that tasks requiring simultaneous management of multiple high-complexity information streams produce overload that directly impairs higher-order processing. For architecture students operating in a second language, this dynamic is particularly acute: the cognitive demands of language processing compete with those of spatial reasoning, design problem-solving, and aesthetic judgment in ways that have no parallel in the experience of students working in their first language. Hellstén and Prescott [13] describe the resulting situation as a "double burden", mastering unfamiliar content while simultaneously managing the cognitive demands of second-language processing, and the architecture studio, with its simultaneous demands on spatial, technical, cultural, and communicative competence, arguably imposes a version of this burden that is more complex than in most other disciplinary contexts.

The relationship between language competence and architectural writing performance deserves particular attention. Architecture students are routinely required to produce written work across multiple genres: design statements, project rationales, theoretical essays, analytical reports, and reflective documentation. These genres carry specific conventions that are rarely made explicit even to domestic students, and that represent a significant additional learning task for students working in a second language [7]. Hyland [14] has demonstrated that disciplinary writing is constituted by highly specific

communicative practices, what he terms "disciplinary discourses", that encode within them the epistemological values, social relationships, and rhetorical conventions of particular fields of knowledge. Architecture, with its characteristic blend of technical specification, aesthetic argument, cultural interpretation, and professional positioning, generates some of the most complex disciplinary discourse configurations in the built environment professions. Acquiring competence in this discourse is a long-term developmental process that cannot be reduced to the mastery of general academic English. Research by Spack [15] on academic literacy acquisition in second-language contexts has demonstrated that the mastery of disciplinary writing conventions requires active and supported engagement with the specific genres of the target discipline, and that this mastery is not simply a function of general language proficiency.

There is also the question of assessment equity. When architecture students produce jury presentations, written design statements, or theoretical essays in a second language, the resulting text and verbal performance inevitably reflects their language capacity alongside their design capacity. The extent to which assessment practices in architecture schools can distinguish between these two dimensions, evaluating the quality of a design idea independently of its verbal expression, is rarely interrogated in curriculum design. Ramachandran's [16] finding that language proficiency effects on academic performance are strongest in disciplines relying heavily on verbal argumentation has direct relevance here: architecture, with its distinctive blend of spatial, technical, and cultural-critical discourse, sits precisely in this territory, and its assessment practices deserve scrutiny from this perspective.

## 4. The Architecture Design Studio: Language Demands Across Core Learning Mediums

The architecture design studio is, as Lotfabadi and Iranmanesh [4] demonstrate in their systematic evaluation of studio learning mediums, a pedagogical environment that encompasses multiple distinct modes of learning, each placing its own specific demands on the language competence of participating students. Their study, which employed the Analytic Hierarchy Process (AHP) to evaluate four core learning mediums embedded in architecture studio pedagogy, the desk critique, the jury, peer learning, and self-learning, provides valuable empirical grounding for understanding the range of linguistically mediated events that structure the studio experience and the relative weight that students and instructors assign to each. The studio's pedagogical complexity, and the multiple demands it places on students' communicative as well as spatial capabilities, has been examined across a range of theoretical and empirical perspectives in the design education literature [4, 17]. Cross's [18] influential account of "designerly ways of knowing" identified the distinctive epistemic practices of design, abductive, synthetic, and integrative rather than deductive or empirical, as constituting a genuine intellectual tradition with its own modes of inquiry and communication. The verbal dimensions of these designerly practices, the need to articulate spatial intent, defend aesthetic decision-making, and situate design within cultural and technical frameworks, represent a language challenge that is inseparable from the disciplinary challenge itself.

Schön's [19] foundational account of the design studio positioned the desk critique as the primary vehicle through which the supervising architect-educator models the tacit knowledge of the profession, a coaching relationship he described as a "reflective conversation with the situation," conducted almost entirely through language. The desk critique, identified by Lotfabadi and Iranmanesh [4] as the learning medium on which students demonstrate the greatest degree of reliance, particularly among fourth-year students, is a dialogic encounter mediated through spontaneous exchange. The student must

communicate design intentions, respond to probing questions, articulate the reasoning behind spatial and material decisions, and negotiate an instructor's critical response, all in a one-to-one conversational format that demands both spontaneity and precision. For students whose language proficiency is still developing, the desk crit offers a degree of contextual scaffolding absent in more formal presentations, but the intellectual demands of sustained design argumentation in a second language remain considerable. The finding that students over-rely on this format relative to peer-based exchange [4] may in part reflect the relative linguistic accessibility of the desk crit compared to the more publicly demanding jury.

The jury is the most publicly demanding of the studio's linguistic events, and it is here that language proficiency intersects most directly with the performative dimension of architectural identity formation. Anthony [20], in an early and influential critical analysis of the design jury format, identified it as a fundamentally rhetorical occasion in which design competence and communicative performance are evaluated together in ways that make their disentanglement for assessment purposes extremely difficult. The student must simultaneously demonstrate spatial intelligence, technical knowledge, theoretical awareness, and verbal fluency in a format that is deliberately public and evaluative. Iranmanesh and Lotfabadi's [3] research, grounded in observation of 221 public juries across five design studios and two consecutive semesters, provides one of the most detailed recent empirical accounts of the jury as a pedagogical format. Drawing on this rich observational base, the study highlights the ways in which students engage with, and are challenged by, the communicative demands of public design presentation and critique. One of the motivations identified for the adoption of new tools, including generative artificial intelligence, in the design studio is that such tools might "empower students to confidently express their design ideas" [3], a formulation that implicitly acknowledges the confidence and expressive challenge the jury presents, particularly for students navigating it in a second language.

Peer learning, the third medium evaluated by Lotfabadi and Iranmanesh [4], was found to be underutilized relative to its assessed importance, with students, particularly at advanced levels, demonstrating a preference for instructor-mediated formats over peer exchange. Boud, Cohen, and Sampson [21] demonstrated that peer learning, when effectively structured, provides qualitatively different opportunities from those available in instructor-led formats: the reciprocity of peer exchange, the reduced power differential between participants, and the ability to practice and refine understanding through explanation to others all create conditions that can be particularly productive for both design development and language development simultaneously. Yet realizing these benefits requires students to engage verbally with confidence and critical precision in their second language, a requirement that can itself constitute a barrier to participation in linguistically diverse studio cohorts where students from different national backgrounds bring different levels of English proficiency to the peer exchange setting.

Self-learning occupies a somewhat different position in this analysis. Reading, research, and reflective practice conducted privately and at the student's own pace mitigate some of the real-time cognitive load pressures described above. Yet the architectural theory and history texts that students are expected to engage with for self-directed learning represent some of the most linguistically demanding material in the humanities, drawing heavily on critical theory, philosophy, and cultural studies, and the vocabulary demands they place on second-language readers are considerable [22]. Architecture students who struggle to read efficiently in their second language are disadvantaged not only in their written and verbal performances but in the foundational intellectual work that underlies them: the

accumulation of theoretical knowledge, historical precedent, and critical vocabulary that makes a design argument architecturally literate rather than merely spatially competent.

The paradigm shifts that Iranmanesh and Lotfabadi [3] document in design studio pedagogy, driven by the emergence of new representational and generative technologies, add a further layer of linguistic complexity. As new tools alter the modes through which design ideas are generated, communicated, and evaluated, the discourse required to critically assess and contextualize their use within the studio evolves as well. The ability to engage in informed critical discussion about the implications of generative AI tools, their benefits for design versatility, their drawbacks for the development of architectural judgment, their relationship to questions of human scale and architectonic reality [3], requires a level of conceptual and linguistic sophistication that presupposes a relatively advanced command of both English and the disciplinary vocabulary of design criticism. International students navigating both a second language and an evolving technological discourse face a challenge that is still only beginning to be recognized in the field.

## 5. Social Integration, Professional Identity, and the Architecture School

The consequences of language competence in architectural higher education extend well beyond formal assessment performance. The architecture school operates as a professional community defined substantially through shared language practice: the specialized vocabulary of spatial and material discourse, the recognizable rhetorical moves of critical argumentation, the informal vernacular of studio culture. For international students whose second-language competence is still developing, entry into this community can be partial and contingent in ways that affect not only social wellbeing but the intellectual and professional formation that architecture school most fundamentally aims to achieve.

The anxiety that second-language performance generates in high-stakes academic contexts represents a significant and sometimes overlooked dimension of this experience. Horwitz, Horwitz, and Cope [23] identified foreign language classroom anxiety as a specific affective phenomenon comprising three components: communication apprehension, fear of negative evaluation, and test anxiety. All three are directly activated in the architecture jury and critique: communication apprehension about presenting design work in a second language before a critical audience; the evaluative weight of jury performance on academic outcomes; and the acute visibility of language difficulty in a setting where articulate verbal performance is a marker of professional competence. The cumulative effect of repeated anxiety in these high-stakes events can be deeply discouraging, and may lead students to adopt avoidance strategies, reduced verbal elaboration, formulaic presentations, withdrawal from voluntary verbal exchange, that effectively limit the learning benefit of the very events they are navigating.

Morita's [24] qualitative research on second-language graduate students in seminar settings documented the ways in which language competence, cultural positioning, and academic identity interact to shape participation patterns. Students who remained silent in formal discussion settings were often caught, Morita found, not simply between linguistic limitation and the desire to speak, but between competing self-conceptions, the intellectually capable self experienced internally and the inadequate second-language performer feared to appear in public discourse. This gap between internal and displayed academic identity has particular resonance in the architecture school, where professional identity formation is so explicitly structured around verbal performance and critique. The ability to hold one's own in a crit, to defend a design position, respond to challenging questions, and engage in the intellectual cut and thrust of evaluative exchange, is closely

tied in architecture school culture to the emerging identity of the competent designer. Students who cannot perform this verbal identity fluently, regardless of the quality of their spatial and material thinking, risk being perceived, and perceiving themselves, as architecturally less capable than they actually are.

Robertson and colleagues [25] found language to be the primary barrier to friendship formation between international and domestic students in Australian universities, producing patterns of social clustering along linguistic lines that limited genuine cross-cultural exchange. Thomas [26] demonstrated, in a large-scale investigation of student retention and belonging in UK higher education, that students' sense of mattering, of being known, valued, and supported within their academic community, is one of the most significant predictors of academic persistence. For international students whose language difficulty makes belonging more fragile, the risk of disengagement and withdrawal is correspondingly heightened. In architecture schools, where studio culture involves extended periods of shared spatial occupation and informal design conversation, the social clustering that language barriers produce can generate intellectually stratified cohort dynamics that impoverish the learning environment for all students. The informal studio conversation, the spontaneous exchange about a design problem, the peer discussion of a historical precedent, the collaborative working-through of a technical challenge, is among the richest learning opportunities the studio affords. Students whose language anxiety leads them to withdraw from these informal exchanges are deprived of some of the studio's most generative and low-stakes learning conditions.

There is, finally, a temporal dimension to this problem that is often overlooked. Language development is a slow process, and the architecture degree, typically lasting four or five years at the undergraduate level, spans a period during which substantial language development is genuinely possible. Students who arrive with intermediate language proficiency may, with appropriate support and institutional conditions, develop into highly competent academic language users by the time they graduate. But this development does not happen automatically: it requires the kind of sustained exposure, meaningful use, and constructive feedback that institutions need to deliberately create. Where institutions treat language support as a one-time remedial intervention at admission rather than as an ongoing pedagogical investment, they fail to capitalize on the developmental potential that the duration of architectural education makes available.

## 6. Institutional Responses: Provision, Limitations, and the Case for Integration

Most universities hosting significant international student populations offer some form of language support, typically pre-sessional English programs, writing center services, and in-sessional academic skills provision. The question worth asking, given what the research reviewed above tells us about the nature and duration of CALP development, is whether these provisions are adequate to the complexity of the challenge they are meant to address, particularly in the specific context of architectural education.

Pre-sessional English programs are the most widespread institutional intervention, and they confer measurable early benefits. Read and Hayes [27] found, however, that gains from pre-sessional programs often diminished within the first year of study as the full demands of degree-level academic work asserted themselves, a finding entirely consistent with the understanding that CALP development cannot be compressed into a six or ten-week intensive course. Pre-sessional programs also operate on an assumption of generic academic language, whereas the evidence reviewed above makes clear that the language demands architecture students face are substantially discipline-specific. Generic

preparation, however well designed, leaves gaps that architectural education programs, with their particular blend of verbal, visual, and material epistemic practices, are poorly positioned to fill without deliberate curricular integration.

Writing and academic support centers offer a more sustained alternative, but their uptake among international students is often lower than might be expected, for reasons that include the stigma of seeking help, time pressure in the studio-dominated timetable, and a cultural sense that acknowledging difficulty represents an admission of inadequacy. De Vita [28] has noted the particular cultural complexity here: in many of the educational traditions from which international students come, acknowledging a learning difficulty carries social weight that has no equivalent in the support-seeking cultures of anglophone universities. The framing of institutional provision matters: services positioned as "language support" send a different message than services framed as spaces for disciplinary writing development or design communication, and this framing shapes who engages with them and how.

The limitations of dedicated supplementary language provision point toward a broader argument: that language development for international architecture students cannot be effectively managed outside the curriculum without also being embedded within it. An integration model, in which discipline-specific language competence is developed through the ordinary activities of the architecture curriculum itself, offers a more promising approach. This model finds theoretical support in Vygotsky's [29] concept of the Zone of Proximal Development, which proposes that learning advances most effectively when students are supported through tasks at the edge of their current capability by more knowledgeable others. Applied to the studio context, this suggests that design educators who scaffold language alongside design thinking, who make explicit the verbal moves expected in a critique, who model the language of design argumentation through their own critical discourse, and who structure peer learning to build linguistic confidence alongside design competence, are functioning as language development partners as well as design mentors, whether or not they recognize this dual role.

Dudley-Evans and St John [30] characterized the defining feature of effective English for Specific Purposes (ESP) provision as its orientation toward the precise communicative needs of particular professional communities rather than toward generic academic language competence. Applied to architectural education, this principle suggests that language support organized around the communicative events that architecture students actually face, the jury presentation, the design rationale, the critical essay, the peer critique, will be substantially more effective than provision designed for a generalized academic audience. In practice, this means developing resources and activities specifically calibrated to the rhetorical conventions of architectural discourse: what it means to justify a spatial decision, how to situate a design within a theoretical tradition, how to receive and respond to critical feedback in a way that is professionally appropriate. These are not skills that students can acquire from a generic academic English textbook; they require exposure to discipline-specific models, guided practice in discipline-specific genres, and feedback from educators who understand the communicative norms of the field.

Canagarajah [31] has argued, from his work with multilingual students in academic writing contexts, that the standard remedial model of language support, treating second-language students' linguistic resources as deficiencies to be corrected toward a monolingual native-speaker norm, misrecognizes the nature of multilingual academic competence. Applied to the architecture studio, this perspective challenges the assumption that language development for international students means simply bringing them closer to native-speaker performance norms. Architecture students who bring multilingual communicative

repertoires to the studio also bring cognitive flexibility, cross-cultural perspective-taking, and the kind of interpretive sensitivity that multilingual experience cultivates, qualities that are of direct professional value in a discipline increasingly oriented toward global practice. Recognizing these resources, rather than treating language difference exclusively as a deficit, suggests a more generative model of support: one oriented toward expanding students' disciplinary communicative range while building on the intellectual resources they already possess.

The evolving technological landscape of the design studio creates additional institutional responsibilities in this regard. As Iranmanesh and Lotfabadi [3] argue, the growing prevalence of generative AI tools in architectural practice means that their inclusion in the curriculum is increasingly necessary. But the integration of such tools also introduces new language demands, the capacity to critically evaluate AI-generated outputs, to articulate their limitations in terms of human scale, abstraction, and architectural reality, and to sustain the kind of human-centric design argumentation that the studio's critical culture requires. Institutions that introduce new tools into the studio curriculum without attending to the language dimensions of their critical use risk compounding rather than alleviating the expressive challenges that international students already face.

## 7. Discussion

The analysis developed across the preceding sections points toward a set of conclusions that carry substantial implications for how architectural higher education understands and responds to the language-related challenges of its increasingly international student populations. These conclusions operate at several levels simultaneously: theoretical, empirical, and practical.

At the theoretical level, this paper has argued that language competence in the architecture school is not a simple entry requirement but a developmental capacity whose effects unfold across the full duration of study. The BICS/CALP distinction [6] alone should give architecture schools pause: a student admitted on the basis of sufficient general English proficiency may still be years away from the kind of academic language competence that the studio's most demanding events require. The academic literacies perspective [7] and Hyland's [14] account of disciplinary discourses further remind us that the language of architecture is not simply English: it is a highly specific disciplinary discourse that even native English speakers must acquire through sustained engagement with the field. The compounding of second-language and disciplinary language acquisition challenges is a persistent feature of the international student experience in architecture schools that has been insufficiently theorized and even less frequently addressed.

At the empirical level, the paper has drawn on research into the four core learning mediums of the architecture studio [4] to demonstrate that each, the desk critique, the jury, peer learning, and self-directed study, places distinct and considerable language demands on participating students. The finding that students over-rely on the desk critique while underutilizing peer learning [4] is consonant with the language anxiety dynamics documented by Horwitz and colleagues [23]: the desk crit's relatively private, scaffolded format is more linguistically accessible than the public, spontaneous demands of jury presentation or the informal lateral exchange of peer critique. Peer learning's underutilization represents a significant lost opportunity for the kind of collaborative practice that Boud and colleagues [21] identify as qualitatively irreplaceable. Anthony's [20] long-standing observation that it is precisely the reciprocal, lower-stakes forms of critique that prepare students for the rhetorical demands of the public jury has lost none of

its force in the intervening decades, and it takes on additional urgency in the context of internationally diverse studio cohorts.

At the practical level, the paper points toward three interconnected areas of institutional responsibility. The first is assessment design: architecture schools need more deliberate and transparent approaches to distinguishing between the assessment of design quality and the assessment of communicative performance, ensuring that language difficulty does not invisibly penalize students whose design thinking exceeds their current expressive capacity. The second is pedagogical integration: language development, consistent with the language socialization perspective advanced by Duff [9] and the scaffolding model grounded in Vygotsky [29], cannot be outsourced to supplementary services but must be woven into the fabric of studio pedagogy. The third is institutional culture: architecture schools that genuinely aspire to serve diverse international cohorts must create the social conditions that support belonging [26] and reduce the language anxiety [23] that currently impedes so many students' full engagement with the studio's richest learning opportunities.

One further dimension warrants sustained attention. The rapid evolution of the studio's technological landscape, documented and critically analyzed by Iranmanesh and Lotfabadi [3], means that the language demands of architectural education are themselves evolving. As generative AI tools become part of the design workflow, the discourse required to critically evaluate, contextualize, and counterbalance their use grows more complex and more sophisticated. The international dimension of this challenge is significant: students navigating both a second language and an evolving technological discourse face a double expressive frontier that is still only beginning to be recognized in the field.

## 8. Conclusion

The relationship between language proficiency and academic experience in internationalized architectural higher education is multidimensional, consequential, and systematically underaddressed by current institutional arrangements. This paper has argued that language operates in the architecture school not as a neutral medium of instruction but as a structuring force, one that shapes what students can know and express, with whom they can build intellectual community, and what kinds of professional selves they are able to construct through their educational experience.

The architecture design studio, with its characteristic reliance on verbal argumentation, critical dialogue, and disciplinary rhetoric across the formats of the crit, the jury, peer learning, and theoretical discourse, places demands on language competence that generic academic language support is poorly configured to address. These demands require architecturally specific responses: embedded scaffolding within studio pedagogy, assessment practices sensitive to the distinction between design quality and communicative performance, and an institutional culture that treats language development as an ongoing shared responsibility rather than a problem to be resolved before students enter the studio door.

The practical implications are clear in outline even where their implementation requires sustained commitment: integration of language-aware pedagogy into studio curricula; greater transparency about the linguistic conventions embedded in architectural assessment formats; faculty development to help architecture educators recognize and respond to language-related learning needs; and social conditions within the school that support, rather than inadvertently penalize, the linguistic journey that every international student is undertaking. Architecture education's communicative aspirations [5] and its increasingly

international student populations are not in fundamental conflict, but realizing their compatibility requires a level of pedagogical intentionality that the field has yet to develop systematically. As architectural education continues to evolve in response to new technologies, new student populations, and new professional demands, the language competence of the students who inhabit its studios must be recognized as a pedagogical concern that is central to, rather than peripheral from, the field's core educational aspirations.

What is ultimately at stake is the quality of the formative encounter at the heart of architectural education, the moment in which a student, standing before a jury or sitting across a desk from a critic, translates spatial thinking into verbal argument and receives in return the critical feedback that shapes them as a designer. For international students negotiating that moment in a second language, the challenge is considerable, the institutional support often inadequate, and the need for research and pedagogical innovation both urgent and genuine.

**Funding:** This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Declaration of Generative AI and AI-Assisted Technologies in the Writing Process**

During the preparation of this work, the authors used Claude / Anthropic to assist with drafting and language refinement. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

**References**

[1] Knight, J. (2004). Internationalization remodeled: Definition, approaches, and rationales. *Journal of Studies in International Education*, 8(1), 5–31. https://doi.org/10.1177/1028315303260832

[2] Macaro, E., Curle, S., Pun, J., An, J., & Dearden, J. (2018). A systematic review of English medium instruction in higher education. *Language Teaching*, 51(1), 36–76. https://doi.org/10.1017/S0261444817000350

[3] Iranmanesh, A., & Lotfabadi, P. (2024). Critical questions on the emergence of text-to-image artificial intelligence in architectural design pedagogy. *AI & Society*, 40(5), 3557–3571. https://doi.org/10.1007/s00146-024-02111-x

[4] Lotfabadi, P., & Iranmanesh, A. (2023). Evaluation of learning methods in architecture design studio via analytic hierarchy process: A case study. *Architectural Engineering and Design Management*, 20(1), 47–64. https://doi.org/10.1080/17452007.2023.2237054

[5] Boyer, E. L., & Mitgang, L. D. (1996). *Building Community: A New Future for Architecture Education and Practice*. The Carnegie Foundation for the Advancement of Teaching.

[6] Cummins, J. (1979). Cognitive/academic language proficiency, linguistic interdependence, the optimum age question and some other matters. *Working Papers on Bilingualism*, 19, 121–129.

[7] Lea, M. R., & Street, B. V. (1998). Student writing in higher education: An academic literacies approach. *Studies in Higher Education*, 23(2), 157–172. https://doi.org/10.1080/03075079812331380364

[8] Norton, B. (2000). *Identity and Language Learning: Gender, Ethnicity and Educational Change*. Longman/Pearson Education.

[9] Duff, P. A. (2010). Language socialization into academic discourse communities. *Annual Review of Applied Linguistics*, 30, 169–192. https://doi.org/10.1017/S0267190510000048

[10] Krashen, S. D. (1982). *Principles and Practice in Second Language Acquisition*. Pergamon Press.

[11] Andrade, M. S. (2006). International students in English-speaking universities: Adjustment factors. *Journal of Research in International Education*, 5(2), 131–154. https://doi.org/10.1177/1475240906065589
[12] Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, 12(2), 257–285. https://doi.org/10.1207/s15516709cog1202_4
[13] Hellstén, M., & Prescott, A. (2004). Learning at university: The international student experience. *International Education Journal*, 5(3), 344–351.
[14] Hyland, K. (2004). *Disciplinary Discourses: Social Interactions in Academic Writing*. University of Michigan Press.
[15] Spack, R. (1997). The acquisition of academic literacy in a second language: A longitudinal case study. *Written Communication*, 14(1), 3–62. https://doi.org/10.1177/0741088397014001001
[16] Ramachandran, S. (2011). Connection between English language proficiency and academic performance of international students in Australia. *International Journal of Business and Management*, 6(12), 175–180. https://doi.org/10.5539/ijbm.v6n12p175
[17] Salama, A. M. A., & Wilkinson, N. (Eds.). (2007). *Design Studio Pedagogy: Horizons for the Future*. Urban International Press.
[18] Cross, N. (2001). Designerly ways of knowing: Design discipline versus design science. *Design Issues*, 17(3), 49–55. https://doi.org/10.1162/074793601750357196
[19] Schön, D. A. (1983). *The Reflective Practitioner: How Professionals Think in Action*. Basic Books.
[20] Anthony, K. H. (1991). *Design Juries on Trial: The Renaissance of the Design Studio*. Van Nostrand Reinhold.
[21] Boud, D., Cohen, R., & Sampson, J. (1999). Peer learning and assessment. *Assessment & Evaluation in Higher Education*, 24(4), 413–426. https://doi.org/10.1080/0260293990240405
[22] Flowerdew, J., & Peacock, M. (Eds.). (2001). *Research Perspectives on English for Academic Purposes*. Cambridge University Press.
[23] Horwitz, E. K., Horwitz, M. B., & Cope, J. (1986). Foreign language classroom anxiety. *The Modern Language Journal*, 70(2), 125–132. https://doi.org/10.1111/j.1540-4781.1986.tb05256.x
[24] Morita, N. (2004). Negotiating participation and identity in second language academic communities. *TESOL Quarterly*, 38(4), 573–603. https://doi.org/10.2307/3588281
[25] Robertson, M., Line, M., Jones, S., & Thomas, S. (2000). International students, learning environments and perceptions: A case study using the Delphi technique. *Higher Education Research & Development*, 19(1), 89–102. https://doi.org/10.1080/07294360050020499
[26] Thomas, L. (2012). *Building Student Engagement and Belonging in Higher Education at a Time of Change*. Paul Hamlyn Foundation.
[27] Read, J., & Hayes, B. (2003). The impact of IELTS on preparation for academic study in New Zealand. *IELTS Research Reports*, 4, 153–206.
[28] De Vita, G. (2007). Taking stock of the literature on the internationalisation of the curriculum in UK higher education. *Innovations in Education and Teaching International*, 44(4), 385–399. https://doi.org/10.1080/14703290701600426
[29] Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Harvard University Press.
[30] Dudley-Evans, T., & St John, M. J. (1998). *Developments in English for Specific Purposes: A Multi-Disciplinary Approach*. Cambridge University Press.
[31] Canagarajah, A. S. (2002). *Critical Academic Writing and Multilingual Students*. University of Michigan Press.