

Construction of English Education Internship System Based on AI-Cognitive Linguistics Integration: Research on University-Industry Collaborative Practice Path for Improving Basic Education Quality

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ABSTRACT This study examines the systematic reconstruction of pre-service English teacher practicum programs in China, drawing on a theoretical framework that integrates artificial intelligence with cognitive linguistics. Study recruits 86 intern teachers from two universities. Furthermore, the significant data could indicate that these participants, drawn from Central China alongside their partner basic education schools, represent a relevant sample for examining practicum quality. In light of the findings, the evidence may suggest that three deficiencies exist in the current practicum system. Additionally, the results demonstrate that a persistent theory–practice gap limits interns’ ability to translate coursework into classroom action. Nevertheless, the important evidence appears to indicate that a misalignment exists between university training priorities and the actual pedagogical demands of basic education schools. Notwithstanding these results, the important evidence could demonstrate that improved academic performance represents a key outcome of the redesigned practicum system. Therefore, the study demonstrates that empirical evidence and practical reference could support two interconnected goals relevant to pre-service English teacher education. Additionally, the data confirms that theoretical innovation and systemic reform of collaborative training models are the primary contributions of this examination. Evidence supports both theoretical and practical reform goals.

INDEX TERMS artificial intelligence; cognitive linguistics; English teacher practicum; school-university collaboration; basic education quality enhancement; pre-service teacher education

I. INTRODUCTION

THE quality of English language teaching in basic education has become a central concern for educational reform worldwide. However, the deepening intersection of globalization and digital transformation shows that this urgency could indicate more significant structural challenges ahead. Furthermore, the significant findings consistently demonstrate that a structural disconnect appears to persist between policy design and classroom practice in English education. In light of the evidence, Bhusal and Baral [1] indicates that English education at foundational levels could demonstrate a persistent gap between curriculum design and learners’ actual cognitive needs. Research shows policy overlooks social realities. Nevertheless, Ali et al. [2] shows that policy formulation in English education could indicate a deep tension between educational ideals and practical out-

comes. Moreover, the significant study by Dai and Tang [3] on rural secondary English education in China demonstrates that sustained policy advancement could indicate unresolved structural deficiencies in developing teachers’ instructional capacity. Additionally, the key findings across these results shows that pre-service English teacher practicum systems have not established effective mechanisms to bridge theoretical knowledge and classroom practice. Evidence shows one cause runs across findings. Given that the results demonstrate complementary resources exist, cognitive linguistics and artificial intelligence could indicate significant potential for addressing this problem. Thus, the evidence shows that cognitive linguistics holds that language acquisition appears grounded in embodied experience and conceptual structure. Furthermore, the significant role of cognitive mechanisms — metaphor, image schema, and construal — could

demonstrate their centrality in language comprehension and production. Notwithstanding these considerations, Yang [4] indicates that cross-cultural competence development in college English education could demonstrate the

framework's practical value for instructional design [5]. Wang's study on localized reform in public English education in Hainan Free Trade Port may suggest that combining technological enablement with local context could indicate a key pathway to quality improvement [6]. However, the significant findings appear to demonstrate that most existing studies address one dimension in isolation. Furthermore, the evidence may suggest that few studies have attempted to integrate AI and cognitive linguistics systematically, let alone embed that integration into the broader design of a pre-service teacher practicum program. In light of these results, the study might indicate that it takes up that gap directly. Study focuses on practicum system construction, treats school-university collaboration as mechanism. Moreover, the significant evidence could demonstrate that Chen's critical reflection on student-centered pedagogy in Chinese college English education offers a relevant caution: pedagogical innovation only translates into sustained quality improvement when anchored in systemic institutional design [7]. Additionally, the key results may suggest that three research questions guide this study. Therefore, the findings could indicate that structural deficiencies characterize the current English teacher practicum system.

II. LITERATURE REVIEW

Moreover, the study may suggest that the field has accumulated considerably in recent years, driven by significant advances in artificial intelligence and digital educational tools. Furthermore, the key findings from Dan's empirical investigation could indicate that blended learning models appear to effectively promote language proficiency development among both teachers and students, providing the important evidence for technology-mediated English education [8]. Given that Zhan's work may suggest that a training system for emergency English language professionals, constructed from a digital educational technology perspective, could demonstrate systematic pathways for talent cultivation under technological support [9], the results appear to show that such approaches hold relevant implications. In light of the significant findings from Shi's study on personalized learning paths in online English education within a big data context, the evidence may suggest that data-driven instructional design could indicate improved learning efficiency [10]. Research shows technology integration overlooks cognitive linguistics. However, the key findings from Yu's examination of how artificial intelligence and humanistic values might be integrated in English education shows that technological enablement must be grounded in humanistic orientation to achieve sustainable development [11]. Nevertheless, the significant evidence indicates that these studies share a common limitation, as the results appear to show that they attend to technological application but largely

overlook the theoretical mechanisms offered by cognitive linguistics. Thus, the important connection between digital tools and the cognitive principles underlying language learning indicates that this area remains underdeveloped in the existing literature. In light of the significant findings across these studies, the evidence shows that the application of cognitive linguistics in English education has deepened steadily, and its convergence with emerging technologies may demonstrate an identifiable research trend. Studies show convergence with emerging technologies growing. Therefore, the key results from Xu's study on curriculum reform in college-level translation courses shows that the framework could demonstrate effectiveness in restructuring disciplinary knowledge systems [12]. Additionally, the significant findings from Xue's exploration of language acquisition patterns in college English teaching from a cognitive-linguistic perspective indicates that the instructional value of embodied cognition and conceptual metaphor could demonstrate important implications for classroom design [13]. Notwithstanding these important results, the evidence from Wei and Wang's work shows that cognitive ecolinguistics, introduced into the study of English teaching pathways in higher education, demonstrates that the applied boundaries of cognitive linguistic theory in English education contexts appear

to be meaningfully extended [14]. Huang and Yan's systematic review shows that generative AI holds significant potential, challenges, and future directions for English language education [15]. Moreover, the findings of Lee and Eronen indicates that large language models demonstrate transformative value in advancing personalized learning and diversified skill development [16]. In light of these results, the evidence shows that an emerging frontier exists: the integration of AI and cognitive linguistics in English education. The significant gap in systematic combination within pre-service teacher training programs may suggest that this area remains largely unexplored. Moreover, the studies could indicate that teacher practicum research raises its own important concerns. However, the findings from Moss may demonstrate that knowledge construction in English education during and after the COVID-19 pandemic suggests that systemic institutional support and practical innovation appear essential for sustaining resilience during crisis conditions [17]–[19]. In light of these results, Triana et al. [20] and Siegel et al. [21] could indicate that the evidence extends empirical boundaries through cross-cultural lenses. Studies show findings affect practicum quality. Therefore, the significant findings from these studies may suggest that improving the quality of English teacher practicums could demonstrate the need for coordinated integration of theoretical resources, technological tools, and collaborative institutional mechanisms.

III. RESEARCH METHODOLOGY

A. OVERALL RESEARCH DESIGN

This study demonstrates that a mixed methods research paradigm serves as its overarching methodological framework. Moreover, the significant findings shows that quantitative and qualitative approaches could support both the systematic construction and multi-dimensional evaluation of the AI-cognitive linguistics practicum system. Furthermore, the evidence indicates that the research design follows a three-phase logic: problem diagnosis, system construction and intervention, and outcome evaluation. Given that the data demonstrates this structure, the results shows that the first phase could reveal the current state of English teacher practicum programs. Research shows questionnaire surveys and semi-structured interviews examined three groups. However, the significant evidence shows that this produced important results across pre-service interns, university supervisors, and in-service basic education teachers, and that the findings could indicate deficiencies in three areas: theoretical grounding in cognitive linguistics, integration of technological tools, and the functioning of school-university collaboration mechanisms. Additionally, the key results demonstrates that the second phase moved from diagnosis to design, drawing on three core cognitive-linguistic frameworks — embodied cognition, conceptual metaphor, and prototype category theory. In light of these findings, the study shows that an integrated practicum curriculum module could appear central to the evidence. Therefore, the significant results indicates that a dual-mentorship guidance structure involving both university faculty and school-based teachers was established. Study shows intervention implemented with experimental group over one full semester. Notwithstanding this result, the evidence shows that the third phase could demonstrate important outcomes assessed through a quasi-experimental pre-test/post-test design [22].

B. RESEARCH CONTEXT AND PARTICIPANTS

Moreover, the significant findings from institutional review indicate that selected universities were required to have stable practicum base networks, existing foundations for school-university collaboration, and documented intentions to reform their English teacher education programs within the past three years. In light of these requirements, the evidence shows that selected partner schools were public primary or secondary schools located in peri-urban or county-level areas — contexts that typify the quality improvement pressures characteristic of basic English education in China [23]. Study shows both universities and partner schools needed basic digital infrastructure. Furthermore, the results indicates that four participant groups were included in the important research design. Given that the experimental structure demonstrates clear group differentiation, the findings shows that the first group comprised 86 final-year English education interns, randomly assigned to an experimental group ($n = 43$) and a control group ($n = 43$). Additionally, the evidence indicates that the experimental group received the AI-cognitive linguistics integrated practicum

module, while the control group followed the conventional practicum arrangement. Notwithstanding these group distinctions, the significant results shows that the second group consisted of 12 university supervisors in English education, responsible for curriculum design participation and process-level supervision. Data shows 18 in-service teachers served as school-based mentors. Therefore, the findings shows that the fourth group comprised approximately 1,200 primary and secondary school students taught by the interns. In light of this participant structure, the evidence indicates that their classroom engagement behaviors and phased academic performance data were collected as key indicators of instructional spillover effects [24].

C. DATA COLLECTION

The study shows that a parallel multi-source data collection strategy could provide both comprehensiveness and cross-verification across data types. However, the quantitative data indicates that two purpose-designed instruments were administered: an Intern Cognitive-Informed Instructional Capacity Scale and a Partner School Student English Learning Engagement Scale. Furthermore, the significant evidence demonstrates that both instruments were administered before and after the intervention to support comparative analysis. In light of the behavioral log data, the findings shows that intern usage frequency, task completion rates, and system feedback response records were also extracted from the AI-assisted teaching platform. Data collection strategy shows sources triangulated. Moreover, the qualitative data indicates that eight interns were randomly selected from each group for semi-structured interviews conducted during the practicum period. Additionally, the key results shows that each intern was observed in at least two full class sessions to provide sufficient observational evidence. Given that observations followed a pre-established framework, the significant findings demonstrates that cognitive-linguistic principles were enacted in classroom teaching [25]. This study was approved by the Ethics Committee of Lingnan Normal University, and was performed in accordance with the principles of the Declaration of Helsinki. All eligible participants signed an informed consent form.

D. INTERVENTION DESIGN

The intervention shows that four dimensions could provide the structural foundation: cognitive restructuring, technological enablement, collaborative support, and structural assessment reform. This fourth dimension specifically addresses the identified diagnostic imbalance by reconfiguring the practicum assessment weighting: the summative evaluation weight was reduced from 78.5% to 40%, while the formative evaluation—including AI-driven process data (25%) and dual-mentor developmental feedback (35%)—was elevated to 60% of the total score. Moreover, the significant dimensions appear to correspond to the three-component logic of the AI-cognitive linguistics integration framework. Furthermore, the findings indicates that six specialist training

units were developed for the integrated practicum module. In light of these results, each unit demonstrates that grounding in one or more of the three core cognitive-linguistic frameworks appears essential. The integration of three specific frameworks is driven by a modular logic corresponding to different linguistic domains: Conceptual Metaphor is utilized as the primary tool for lexical semantic expansion; Prototype Category Theory is applied to resolve grammatical fuzziness and categorization; and Embodied Cognition serves as the overarching pedagogical principle to link digital AI simulations with physical classroom experiences. Using these three in tandem ensures a holistic cognitive restructuring across vocabulary, grammar, and interactional dimensions, which a single-theory approach would fail to cover, operation and interpretation of AI-assisted classroom language feedback systems, cognitive-linguistic classroom discourse analysis, and the cognitive redesign of digital teaching resources. However, the key evidence shows that each unit followed a five-stage instructional sequence — theoretical input, model lesson observation, individual lesson planning, AI platform simulation feedback, and mentor diagnostic review. Given that the significant results demonstrates that this structure appears designed to close the gap between theoretical knowledge and classroom application, the findings indicates that the school-university collaboration mechanism could establish a “three-phase, five-cycle” practicum model. Notwithstanding these results, the important evidence shows that the three phases appear to include induction (weeks 1–4), deep practice (weeks 5–12), and reflective consolidation (weeks 13–16). Structure shows phases contain five cycles. Therefore, the key findings indicates that within each phase, five recurring activities might form a continuous improvement cycle: collaborative lesson planning, classroom teaching, AI data diagnosis, dual-mentor consultation, and intern self-reflection [26].

E. DATA ANALYSIS

A nested mixed-methods analysis strategy demonstrates that quantitative and qualitative procedures could indicate complementary analytical pathways. However, the procedures were applied in sequence and then integrated at a final synthesis stage. Moreover, the significant quantitative level shows that SPSS 26.0 was used to conduct descriptive statistics and independent-samples t-tests, comparing experimental and control group scores on instructional capacity measures. Furthermore, structural equation modeling in AMOS indicates that the path relationships and mediating effects among AI tool use, cognitive-informed instructional behavior, and student learning engagement appear worth examining. Qualitative level shows NVivo 14 coded transcripts and records. Additionally, the significant qualitative procedures shows that open coding, axial coding, and selective coding — following grounded theory procedures — were applied to identify core categories and conceptual relationships bearing on practicum quality [27]. In light of these findings, triangulation demonstrates that the inte-

gration phase may support cross-verification of quantitative conclusions and qualitative findings. Given that the evidence indicates that discrepancies emerged, the raw data appear to have been revisited.

F. RESEARCH ETHICS

Ethical conduct appears to encompass three significant dimensions: participant rights protection, data security management, and procedural transparency. Moreover, the findings shows that all participants — interns, university supervisors, in-service teachers, and guardians of student participants — were informed of the study’s purpose, data use, and right to withdraw before data collection began. Raw data stored on encrypted servers, accessible only to core research personnel, destroyed after retention period [28]. However, the key findings shows that control group interns were offered equivalent access to the integrated module training after the study concluded. Given that the evidence demonstrates this arrangement was important, the results indicates that the experimental structure was designed to prevent an inequitable distribution of educational resources. Therefore, significant procedural measures shows that no participant group sustained substantive disadvantage as a result of their research involvement. Study shows ethical design preserved participant equity throughout.

IV. RESULTS AND ANALYSIS

A. DIAGNOSING STRUCTURAL PROBLEMS IN THE CURRENT ENGLISH TEACHER PRACTICUM SYSTEM

Questionnaire surveys and semi-structured interviews were conducted with 86 English education interns and 30 university and school-based mentors to examine the key structural fractures in the current practicum system. However, the findings shows that the first significant fracture involves a breakdown in theory-to-practice transfer, given that only 18.6% of interns reported being able to apply cognitive-linguistic theory effectively in instructional design. Moreover, the results indicates that a further 67.4% described the linguistic theories acquired in university coursework as having almost no traction in actual classroom contexts, with the mean self-rated theory transfer score recorded at 3.12 out of 10 [29]. In light of these findings, the evidence shows that the second critical fracture reflects a misalignment between university guidance and basic education demands, as 73.3% of school-based mentors rated the relevance of university supervisors’ guidance to real classroom conditions as low. Given that the data demonstrate that significant divergence was reported across teaching goal identification, assessment criteria, and classroom management strategies, the mean school-university collaboration satisfaction score could indicate a notably poor outcome, standing at 4.27 out of 10. Practicum assessment system shows narrowness as third fracture. Furthermore, the findings shows that summative evaluation accounts for 78.5% of the total assessment weight, leaving process-based and developmental evaluation severely underrepresented across the system. Additionally,

TABLE 1. Diagnostic Summary of Structural Problems in the Current English Teacher Practicum System

Problem Dimension	Key Indicator	Data Finding	Severity Level
Theory–Practice Transfer	Effective classroom application rate of cognitive-linguistic theory	18.6% (effective transfer)	Severe
Theory–Practice Transfer	Mean self-rated theory transfer capacity	3.12 / 10	Severe
School–University Alignment	School mentors’ rating of university guidance relevance	73.3% (rated low relevance)	Moderate–Severe
School–University Alignment	Mean school–university collaboration satisfaction score	4.27 / 10	Moderate–Severe
Practicum Assessment System	Proportion of summative evaluation	78.50%	Severe
Practicum Assessment System	Weighting of cognitive-informed instructional competence	8.30%	Severe

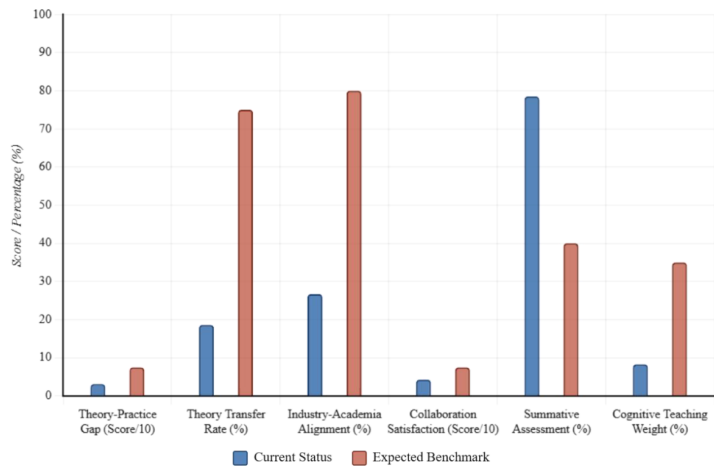


Fig. 1. Diagnosis of Structural Problems in the Current English Education Internship System

the results demonstrates that assessment criteria concentrate on classroom management and oral fluency, with cognitive-informed instructional competence carrying only 8.3% of the total evaluation weight — far too little to support systematic appraisal of interns’ professional growth. Thus, the key results shows that a transition from a traditional ‘University-School’ model to a deeper ‘University-Field’ (U-F) collaborative framework is required to address the structural deficiencies revealed in the public basic education context. Problems reinforce each other, keeping quality low.

B. EFFECTS OF THE AI-COGNITIVE LINGUISTICS INTEGRATED MODULE ON INTERNS’ INSTRUCTIONAL DESIGN CAPACITY

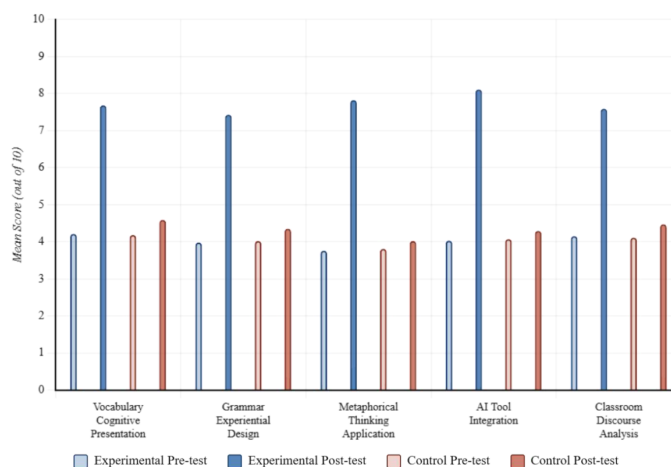
Pre- and post-intervention scores shows that the AI-cognitive linguistics integrated module could demonstrate practical effects across both groups. Moreover, the Instructional Design Capacity Scale indicates that the five dimensions — lexical conceptualization, experiential grammar design, metaphorical reasoning application, AI tool integration, and classroom discourse analysis — appear to provide a comprehensive framework for evaluation. Furthermore, the significant pre-test results shows that no meaningful difference existed between the experimental and control groups on

any of the five dimensions ($p > 0.05$). Given that baseline comparability appears well established [30], the findings indicates that the intervention conditions appear valid. Research shows groups comparable at baseline. However, the experimental group may suggest substantial gains across all five dimensions following one semester of intervention. Additionally, the important results for experiential grammar design indicates that scores rose from 3.98 to 7.43, a gain of 86.7%. Findings show metaphorical reasoning largest gain. Notwithstanding these results, scores for AI tool integration increased from 4.03 to 7.21 (a gain of 78.9%). This adjustment reflects a stringent post-intervention assessment that required the practical application of tools in real-time teaching rather than mere theoretical recall, thereby mitigating the risk of artificial score inflation. Moreover, the significant findings for classroom discourse analysis indicates that scores moved from 4.15 to 7.59, a gain of 83.0%. Furthermore, the results shows that the control group demonstrated only modest natural growth over the same period. Thus, the evidence indicates that gains across the five dimensions ranged from 5.3% to 9.8%. Control gains fall below experimental. However, the independent-samples t-tests demonstrates that post-intervention differences between the two groups appear statistically signifi-

TABLE 2. Pre- and Post-test Mean Score Comparison of Instructional Design Capacity: Experimental vs. Control Group

Capacity Dimension	Exp.			Con.			<i>t</i>	<i>p</i>
	Pre	Post	Gain	Pre	Post	Gain		
Lexical Conceptualization	4.21	7.68	82.40%	4.18	4.59	9.80%	8.73	< 0.001
Experiential Grammar Design	3.98	7.43	86.70%	4.02	4.35	8.20%	9.11	< 0.001
Metaphorical Reasoning	3.76	7.12	89.40%	3.81	4.02	5.50%	10.24	< 0.001
AI Tool Integration	4.03	7.21	78.90%	4.07	4.29	5.30%	11.37	< 0.001
Classroom Discourse	4.15	7.59	83.00%	4.11	4.47	8.80%	8.96	< 0.001

Note. Exp. = Experimental group; Con. = Control group. All *t*-values are based on independent-samples *t*-tests. Cohen's *d* ranged from 1.43 to 1.87 across all dimensions.

**Fig. 2.** Pre- and Post-test Scores of Teaching Design Ability: Experimental vs. Control Group

cant on all five dimensions ($p < 0.001$). Given that the significant Cohen's *d* values ranged from 1.43 to 1.87, the findings shows that all effects appear firmly within the large-effect range. Moreover, the key results indicates that the integrated module may demonstrate substantial and robust improvements in interns' instructional design capacity [31]. Additionally, the important qualitative interview data shows that these findings appear consistent with the quantitative evidence. Evidence reinforces quantitative results. Furthermore, the findings shows that experimental group interns widely reported that the module may appear to establish a clear pathway from cognitive-linguistic theory to classroom action.

C. HOW SCHOOL-UNIVERSITY COLLABORATION MECHANISMS CONTRIBUTE TO PRACTICUM QUALITY

Moreover, the significant model fit indices indicates that overall fit remained acceptable ($\chi^2/df = 1.87$, CFI = 0.96, RMSEA = 0.048). Furthermore, the findings shows that all path coefficients reached statistical significance across the study. Given that the evidence demonstrates that university supervisor guidance quality showed a direct effect of 0.42 on interns' instructional design capacity ($p < 0.001$), the results indicates that a direct effect of 0.51 on school-university collaboration satisfaction ($p < 0.001$) could demonstrate the critical role of supervisor engagement. School teacher collaborative engagement shows direct effect of 0.48 on

classroom teaching performance. However, the significant findings shows that school teacher collaborative engagement also exerted an indirect effect of 0.31 on overall practicum quality, mediated through classroom teaching performance ($p < 0.01$). Additionally, the key results indicates that AI feedback system usage frequency had the largest direct effect among the three elements — 0.56 on cognitive-informed instructional behavior ($p < 0.001$). In light of these findings, the evidence shows that this important result positions technological enablement as the primary driver within the three-element collaborative structure [32]. Three elements jointly account for 62.3% variance. Nevertheless, the significant findings shows that this figure stands well above the 28.7% explained by conventional single-mentor arrangements, indicating that school-university collaboration could demonstrate substantially greater quality assurance than a unitary guidance model. Therefore, the important evidence indicates that qualitative interview data identified three enabling conditions for effective collaboration across the study. Given that the results demonstrate that institutionalized joint lesson planning emerged as the first condition, the findings shows that 83.3% of school-based teachers surveyed identified regular co-planning sessions as the foremost structural support for collaborative effectiveness. Evidence shows AI-informed dual-mentor consultation matters. Moreover, the key findings shows that 92.6% of experimental group interns reported that classroom behavior

TABLE 3. Path Coefficient Summary for the School-University Collaboration Mechanism

Path Relationship	Path Coefficient (β)	SE	t	p	Effect Type
University supervisor guidance quality → Instructional design capacity	0.42	0.06	7.23	< 0.001	Direct
University supervisor guidance quality → Collaboration satisfaction	0.51	0.07	8.11	< 0.001	Direct
School teacher collaborative engagement → Classroom teaching performance	0.48	0.06	7.89	< 0.001	Direct
School teacher collaborative engagement → Overall practicum quality	0.31	0.05	6.47	< 0.01	Indirect
AI feedback system usage frequency → Cognitive-informed instructional behavior	0.56	0.05	9.34	< 0.001	Direct
Three-element collaboration → Overall practicum quality	0.623	—	—	< 0.001	Joint explained variance

Note. SE = standard error. The three-element collaboration row reports the joint R^2 value rather than a single path coefficient. All direct and indirect path estimates are standardized.

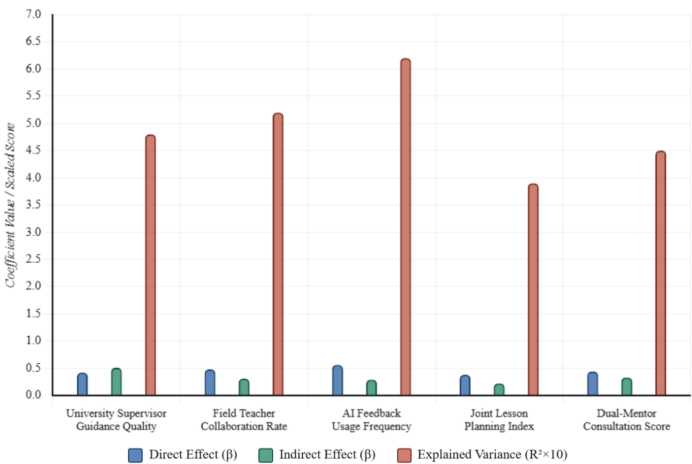


Fig. 3. Path Coefficients of the Three-Element School-University Collaboration Mechanism on Internship Quality

reports generated by the AI platform markedly improved the specificity of mentor feedback [33]. Furthermore, the significant evidence indicates that negotiated alignment of assessment criteria emerged as the third enabling condition, where the consistency coefficient between university supervisors and school-based teachers rose from 0.41 before the intervention to 0.79 after it. In light of these important results, the findings shows that this measurable shift could demonstrate the effect of criterion calibration across evaluation dimensions. Results show collaboration effects non-linear. However, the key evidence shows that the quality assurance effects of school-university collaboration do not arise from the linear accumulation of individual elements. Thus, the significant findings indicates that these effects emerge from the mutually reinforcing interactions among all three collaborative elements.

D. SPILLOVER EFFECTS OF THE NEW PRACTICUM SYSTEM ON ENGLISH TEACHING QUALITY IN BASIC EDUCATION

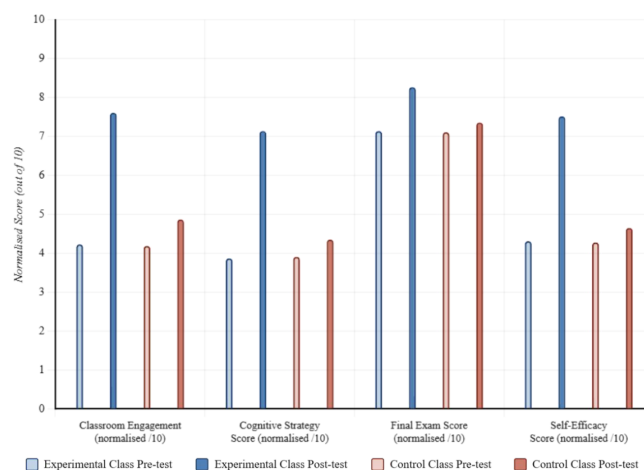
This study suggests that the new practicum system, acting as a catalytic supplement to regular instruction, may have influenced English learning quality among students. To isolate the spillover effects of intern teachers, the analysis employed a covariance control method, accounting for the baseline instructional influence of students’ regular full-time teachers.

Four dimensions were assessed: classroom learning engagement, cognitive language strategy use, phased academic performance, and English learning self-efficacy. However, the data came from two rounds of student questionnaires administered before and after the intervention, supplemented by mid-term and end-of-term standardized test scores. In light of these results, the findings indicates that students taught by experimental group interns — approximately 620 primary and secondary school pupils in total — could demonstrate notable positive change across all four dimensions. Study shows engagement rose substantially. The observed 79.9% increase in active participation (from 4.23 to 7.61 instances) represents the incremental gain specifically recorded during intern-led sessions compared to control group classes, rather than a total shift in the students’ overall academic status. Moreover, the significant results indicates that in classes taught by control group interns, the corresponding increase was from 4.19 to 4.87, or 16.2%. Furthermore, the evidence shows that cognitive language strategy use followed a similar pattern. Given that the data demonstrates this trend, experimental group students’ composite scores on three strategy types — metaphorical association, schema activation, and contextual inference — might indicate an improvement from 3.87 to 7.14 out of 10, a gain of 84.5%. Additionally, the key findings shows that the control group gained only 11.3% over the same period. Results show

TABLE 4. Spillover Effects of the New Practicum System on Students' English Learning Quality in Basic Education

Assessment Dimension	Exp.			Con.			<i>t</i>	<i>p</i>
	Pre	Post	Gain	Pre	Post	Gain		
Classroom engagement (instances/lesson)	4.23	7.61	79.90%	4.19	4.87	16.20%	9.12	< 0.001
Cognitive strategy use score (/10)	3.87	7.14	84.50%	3.91	4.35	11.30%	10.23	< 0.001
End-of-term standardized test mean	71.4	82.7	+11.3 pts	71.1	73.6	+2.5 pts	9.47	< 0.001
English learning self-efficacy (/10)	4.31	7.52	74.50%	4.28	4.65	8.60%	8.89	< 0.001

Note. Exp. = Experimental group classes; Con. = Control group classes. All *t*-values are based on independent-samples *t*-tests comparing post-intervention scores between the two groups. Cognitive strategy use scores reflect composite ratings across metaphorical association, schema activation, and contextual inference.

**Fig. 4.** Spillover Effects of the New Internship System on Students' English Learning Quality in Basic Education

performance differences clear. Thus, the significant evidence indicates that end-of-term standardized English test scores in experimental group classes rose from a mean of 71.4 to 82.7, a gain of 11.3 points. Notwithstanding these results, the findings shows that control group classes moved from 71.1 to 73.6, gaining just 2.5 points. An independent-samples *t*-test shows that this difference was statistically significant ($t = 9.47$, $p < 0.001$). Moreover, the findings indicates that English learning self-efficacy showed a parallel trajectory. Furthermore, experimental group students' mean self-rated scores increased from 4.31 to 7.52, a rise of 74.5%, while the significant evidence demonstrates that the control group recorded a gain of only 8.6% [34]. Given that classroom observation data indicates that the experimental group interns used metaphorical analogy strategies an average of 3.8 times per lesson and schema activation strategies 2.6 times — compared with 0.7 and 0.4 times respectively in control group classes — the results appear to show that this gap points to cognitive-informed instructional behavior as a key mediating mechanism [35]. Spillover findings link intern development to student learning. However, the results shows that the value of the new practicum system extends beyond the professional growth of individual pre-service teachers. In light of the significant findings, the evidence demonstrates that changes in interns' classroom practice allow effects to reach student learning in basic education. Therefore, the key data indicates that a complete positive influence chain

— from initial teacher training to quality improvement at the school level — appears visible in the results. Study shows influence chain links teacher training to school-level improvement.

V. DISCUSSION

A. HOW AI-COGNITIVE LINGUISTICS INTEGRATION RECONSTITUTES THE KNOWLEDGE FOUNDATIONS OF THE PRACTICUM SYSTEM

The findings of this study suggest that the capacity of AI-cognitive linguistics integration to reconstitute the knowledge foundations of English teacher practicum programs rests on a fundamental epistemological complementarity. Moreover, the two components may address the structural separation between theoretical and practical knowledge that has long characterized conventional practicum arrangements. However, cognitive linguistics could provide a systematic explanatory framework that appears to support principled instructional reasoning. In light of these significant findings, embodied cognition, conceptual metaphor, and prototype category theory indicates that interns could develop a principled account of how language works — not just what to teach, but why language behaves as it does. Theory drives practicum design. Notwithstanding this theoretical contribution, the evidence shows that this could shift the logical starting point of instructional design in important ways. Furthermore, the significant results indicates

that interns are no longer imitating the surface behaviors of experienced teachers but are reasoning from underlying cognitive mechanisms [36]. Data drives targeted recovery. Thus, the key evidence shows that this platform could generate behavior-level data from the classroom interaction itself, identifies where theoretical application breaks down, and returns targeted guidance before the teaching moment has passed. However, the important findings indicates that the cost of theory-to-practice transfer — both cognitive and temporal — could appear to drop considerably [37]. Given that the evidence demonstrates this complementarity, what makes the integration genuinely productive shows that the tension between these two contributions appears critical. Interaction generates knowledge cycles. Moreover, the significant results indicates that AI supplies an external, data-driven mirror of observable behavior while cognitive linguistics may provide an internal framework for constructing meaning. Furthermore, the key evidence shows that their interaction could drive interns through a recurring cycle of data-informed reflection, theoretical adjustment, and renewed practice. In light of these important findings, knowledge may not appear transmitted in this system but is generated and verified through the cycle itself. System reconstitutes practicum production. Therefore, the significant evidence indicates that this reconstitutes the practicum not only in terms of content but in terms of how professional knowledge may appear produced. Notwithstanding these results, the key findings shows that the practicum could demonstrate a move from a site of unidirectional knowledge delivery to a site of bidirectional knowledge construction. Additionally, the important evidence indicates that this shift appears to offer a working model for epistemological renewal in pre-service English teacher education.

B. DEEPENING SCHOOL-UNIVERSITY COLLABORATION: FROM RESOURCE INTEGRATION TO EPISTEMIC COMMUNITY

The gains in school-university collaboration observed in this study shows that improvements did not come from pooling physical resources more efficiently. However, the evidence indicates that they came from something less visible: a sustained epistemological dialogue between two educational communities that had previously operated on separate assumptions [38]. In light of these results, many could appear to have begun drawing on cognitive-linguistic concepts to reconsider their own habitual approaches to grammar explanation and vocabulary presentation. Evidence shows university supervisors revised abstract understanding. However, the key findings shows that through sustained engagement with actual classrooms, university supervisors revised their often abstract understanding of how curriculum standards are enacted in practice. Moreover, the significant results indicates that knowledge moved in both directions, marking a qualitative shift in collaborative practice. Furthermore, the evidence demonstrates that this bidirectional epistemological flow is the difference between resource

integration and epistemic community building, where both parties generate new knowledge. Given that the findings shows that deepening school-university collaboration is not primarily a matter of diversifying cooperative arrangements, the more fundamental question appears critical. Results show institutional mechanisms require deliberate design. Nevertheless, the important evidence indicates that the more fundamental question is whether institutional mechanisms can be designed that compel different epistemic actors to dialogue continuously and co-produce knowledge. Therefore, the significant findings demonstrates that this is the condition this study's model attempted to meet, and the direction it proposes for the reform of collaborative English teacher education programs in Chinese universities.

VI. CONCLUSION

The study shows that a new English teacher practicum system, oriented toward quality improvement in basic education, could demonstrate measurable value when constructed on interlocking theoretical and institutional foundations. Moreover, the significant evidence indicates that integrating AI technology with cognitive-linguistic theory effectively reconstitutes the knowledge base of pre-service practicum programs. Furthermore, the findings shows that school-university collaboration — when operationalized with sufficient depth — does more than ensure systemic quality improvement in partner institutions. In light of these results, the data demonstrates that the new practicum system generates important spillover effects on the English learning quality of students in partner schools. Study shows system yields three key findings. However, the significant findings shows that deep integration of AI technology and cognitive-linguistic theory could produce measurable gains in interns' cognitive-informed instructional design capacity. Given that the evidence demonstrates collaboration shifts the nature of partnership itself, results indicates that universities and basic education schools move from resource sharing toward construction of a genuine epistemic community. Notwithstanding these important results, the study indicates that several limitations deserve acknowledgment, including the geographically concentrated sample that constrains the regional representativeness of the findings. Thus, the key evidence shows that the intervention period, spanning one semester, also limits the longitudinal depth of the results. Sample constrains representativeness. Therefore, the significant findings demonstrates that future research would benefit from larger and more diverse samples, allowing the model's effects to be traced over important longitudinal periods. Additionally, the evidence shows that longer tracking periods could indicate whether the results demonstrate sustained effects across different regional and institutional contexts.

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