

Analysis of the Impact and Strategies of "Human-AI Interaction Negotiation Competence" on Foreign Language Talent Cultivation

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ABSTRACT

The advent of generative artificial intelligence has precipitated a profound paradigm shift in foreign language talent cultivation. Guided by the Ministry of Education's "Artificial Intelligence +" Action Plan, the National Education Digitalization Strategic Action, and the UNESCO Guidance for Generative AI in Education and Research, this research explores the transition toward an integrated ecosystem of Human-Machine Synergy. This transformative imperative is particularly acute for applied undergraduate colleges in the Greater Bay Area, an economic epicenter demanding composite professionals capable of navigating technologically mediated business environments. This paper delineates the core connotations of Human-AI Interaction Negotiation Competence (HAINC), examining its multidimensional impacts on cognitive development, linguistic application, and occupational adaptability. To operationalize this competence, the study introduces an Outcomes-Based Education (OBE) framework tailored for an AI-driven Pedagogical Transformation, proposing a dual-core curriculum integrating humanities and digital intelligence. By leveraging intelligent dialogue systems, educators can engage in Evidence-based Teaching Management to construct dynamic Capability Profiling mechanisms, optimizing learners' interaction strategies. Ultimately, the deliberate cultivation of HAINC is a strategic necessity for applied universities seeking to empower students through genuine Digital Empowerment, providing an actionable blueprint for restructuring the foreign language education ecology.

Keywords: Human-machine synergy, Digital empowerment, AI-driven pedagogical transformation, Evidence-based teaching management, Capability profiling, Applied undergraduate colleges.

1. INTRODUCTION

The contemporary higher education landscape is undergoing a radical metamorphosis catalyzed by generative artificial intelligence. At the forefront of this transformation are the Ministry of Education's "Artificial Intelligence +" Action Plan and the National Education Digitalization Strategic Action, which mandate a systemic overhaul of traditional instructional frameworks. The primary objective is to achieve genuine Digital Empowerment, ensuring technology serves as a fundamental catalyst for cognitive development rather than a mere delivery vehicle. Concurrently, the UNESCO Guidance for Generative AI in Education and Research advocates for a human-centered approach, urging institutions to safeguard human agency, cultivate critical digital literacies, and mitigate algorithmic risks. This

convergence of national mandates and international frameworks necessitates a strategic pivot from rote linguistic acquisition to the holistic development of cognitive agility, encapsulated by the theoretical construct of Human-AI Interaction Negotiation Competence (HAINC), which defines the multifaceted skills required to effectively prompt, evaluate, and collaboratively refine AI outputs [1].

This paradigmatic shift is acutely relevant within applied undergraduate colleges situated in the Greater Bay Area. As a global epicenter of international trade and technological innovation, the region demands composite foreign language professionals possessing high-order digital literacies and cross-cultural communicative agility. Traditional talent cultivation models, emphasizing isolated vocabulary and rigid grammar, are proving

increasingly inadequate in a labor market where AI instantaneously executes routine translation tasks. Consequently, applied universities face the existential challenge of overhauling their curricular architectures to foster authentic Human-Machine Synergy. This restructuring requires an AI-driven Pedagogical Transformation that explicitly embeds generative AI as an indispensable, collaborative partner in language learning and professional discourse production, ensuring graduates possess the ethical judgment and complex negotiation capabilities that AI cannot automate or replicate [2].

2. LITERATURE REVIEW

2.1 Theoretical Foundations and Practical Implementation

Recent academic discourse highlights a dual-core driving mechanism that equally prioritizes humanistic inquiry and digital intelligence literacy. Existing international guidance on generative AI in education emphasizes that genuine AI-driven pedagogical transformation must be anchored in human agency, ethical judgment, critical literacy, and pedagogically meaningful use rather than technological substitution, thereby ensuring that learners mature into active, discerning co-creators of knowledge rather than passive consumers of machine-generated text [3]. Building on this foundation, contemporary literature increasingly focuses on the context-specific implementation of interaction negotiation competence within vocational and applied undergraduate institutions. Pedagogical strategies now emphasize structured interventions that teach students to formulate precise prompts and iteratively negotiate meaning, moving beyond the flawed perception of AI as an infallible oracle to treating it as a dynamic, responsive conversational partner [4].

To successfully institutionalize these advanced strategies, the development of robust, technology-enhanced evaluation systems has become a critical focus. Scholars propose novel frameworks integrating intelligent voice interaction and multimodal data analytics to capture real-time cognitive processes, allowing educators to construct a precise, multidimensional Capability Profiling matrix that shifts assessment to a continuous, formative process [5]. The classroom application of these frameworks is particularly well-documented in translation teaching. Here, systematic assistance from machine translation and AI-assisted translation tools requires students to rigorously

reconcile discrepancies between statistical machine outputs and culturally nuanced human translations, reinforcing the principle that AI serves most effectively as a heuristic drafting tool rather than an autonomous arbiter of linguistic accuracy [6].

2.2 Micro-Interactional Competencies and Pedagogical Evolution

Despite pedagogical advancements, empirical investigations reveal a pervasive "high criticism, low strategy" phenomenon among language learners, who can identify flawed AI outputs but critically lack the proactive strategic competence to guide the system toward superior iterations [7]. To address these strategic deficiencies, applied linguistics researchers utilize conversation analysis to dissect human-AI oral interactions, identifying specific micro-interactional competencies—such as explicit context provision and structural disambiguation—that actively facilitate successful second language acquisition [8].

Complementing these linguistic analyses are empirical studies of learner-AI interaction patterns, which show that students benefit from AI-supported language learning only when they adopt deep and strategic approaches; passive or mechanical dependence on AI may weaken the human-AI learning community and undermine learning performance[9]. In response, educators are exploring AI-supported collaborative learning models. By integrating intelligent chatbots into group-based language tasks, AI can act as a catalyst for deeper peer interaction and engagement, provided that pedagogy requires students to discuss, synthesize, and collectively refine generated content [10].

The theoretical underpinnings of these models are often grounded in the concept of intersubjectivity. As generative AI assumes a pseudo-authoritative role, the traditional teacher-student dyad expands into a dynamic triad, fundamentally challenging deeply held notions of intellectual authorship and forcing institutions to redefine authentic student work [11]. This aligns closely with constructivist perspectives, which view AI not as a passive dispenser of knowledge, but as a responsive cognitive scaffold providing personalized linguistic input to accelerate schema formation [12]. To actualize this constructivist potential, researchers are actively framing the operational boundaries of human-AI collaboration. Emerging frameworks advocate for highly transparent pedagogical designs aligned with

assessable learning outcomes, ensuring AI augmentation enhances human capabilities without leading to cognitive atrophy [13]. Ultimately, the societal implications of extensive human-machine collaboration require a continuous reassessment of the language educator's professional identity. As AI assumes routine instructional tasks, teachers must rapidly evolve into sophisticated designers of multimodal learning environments and expert mentors in critical digital literacy, thereby elevating the intrinsic humanistic value of global language education [14].

3. CORE CONNOTATION AND IMPACT ANALYSIS

3.1 Conceptual Framework and Paradigm Shift

The sudden emergence and necessary cultivation of Human-AI Interaction Negotiation Competence represents a fundamental, seismic evolution in the cognitive, practical, and occupational dimensions of foreign language talent cultivation. At its absolute core, this specialized competence entirely transcends traditional, historically established definitions of digital literacy, which have typically focused almost exclusively on the functional operation of specific software platforms, the execution of basic internet searches, and the routine retrieval of digital information. Instead, Human-AI Interaction Negotiation Competence constitutes a highly complex, iterative, deeply cognitive, and inherently dialogic capability. It fundamentally requires the language learner to engage with advanced generative artificial intelligence not as a passive, transactional search engine, but as an active, albeit non-sentient, intellectual collaborative partner.

To succeed in this new paradigm, the learner must possess the profound cognitive flexibility required to initially formulate highly precise, context-rich instructional prompts. Furthermore, they must possess the rigorous critical acumen necessary to independently evaluate the resulting linguistic accuracy, cultural appropriateness, and logical coherence of the AI's complex output. Most importantly, they require the strategic agility to recursively and intelligently refine their prompts to correct, systematically steer, or creatively expand the machine's generative trajectory based on continuous feedback. This rigorous process of continuous intellectual negotiation demands an exceptionally deep mastery of the target language's

nuances, a robust, functional understanding of underlying algorithmic logic and limitations, and an unwavering, ethical commitment to maintaining human intellectual agency.

Within the highly specific and demanding context of the Greater Bay Area's rapidly expanding digital economy, where high-stakes cross-border business, complex supply chain logistics, and nuanced international communication are increasingly and unavoidably mediated by intelligent technologies, possessing this advanced competence is no longer merely an academic advantage or a novel skill. It is, in fact, a critical, non-negotiable prerequisite for long-term professional success, economic mobility, and industrial innovation. Applied undergraduate colleges operating within this region must therefore explicitly recognize that systematically cultivating this competence is the absolute linchpin of their strategic AI-driven Pedagogical Transformation. They must move their institutional focus decisively beyond the mere passive consumption of AI outputs toward the deliberate, proactive design of highly responsive and adaptive English business competencies that perfectly align with both the rigorous intellectual demands of higher education and the fast-paced, practical realities of modern enterprise [15].

To systematically, structurally, and comprehensively map the immense depth and breadth of this educational paradigm shift, it is absolutely essential to directly contrast the historical, traditional foreign language talent capability model with the rapidly emerging, technologically integrated Human-AI Interaction Negotiation Competence model. The traditional educational model, which remains deeply rooted in mid-twentieth-century behaviorist and early cognitivist theories of learning, positions the university student primarily as a passive receiver of pre-packaged, sanitized linguistic knowledge. This outdated model relies heavily on authoritative textbooks and unidirectional instructor-led transmission, emphasizing rote memorization and standardized testing. Conversely, the new, progressive model, which is fundamentally predicated on the modern principles of Human-Machine Synergy and systemic Digital Empowerment, radically positions the student as a critical, highly active co-creator of knowledge operating within a dynamic, open-ended, technology-rich ecosystem. "Table 1" provides a highly comprehensive, meticulously structured, multi-dimensional comparison of these two

distinctly different educational paradigms, clearly illustrating the profound structural, methodological, and cognitive differences that inevitably

characterize the deep integration of generative artificial intelligence into higher language learning.

Table 1. Comparison of traditional and AI-era foreign language talent models

Dimension	Traditional Foreign Language Talent Model	AI-Era Human-AI Interaction Negotiation Competence (HAINC) Model
Knowledge Acquisition Method	Linear, unidirectional transmission from authoritative sources (instructors, standardized textbooks) to largely passive learners, heavily emphasizing repetitive memorization and the building of static, predictable linguistic schema.	Dynamic, multidirectional co-construction actively utilizing generative AI as a responsive, adaptable cognitive scaffold, heavily emphasizing advanced prompt engineering, iterative inquiry, and real-time contextual adaptation.
Thinking Mode and Cognitive Load	Focuses predominantly on lower-order cognitive tasks (based on Bloom's Taxonomy) such as vocabulary recall, explicit grammar translation, and standard reading comprehension; critical thinking is frequently treated as a secondary, specialized advanced skill.	Decisively shifts the primary cognitive load away from basic information retrieval toward high-order critical analysis, demanding continuous evaluative judgment, profound algorithmic awareness, and the strategic, logical synthesis of multiple AI-generated inputs.
Interaction Object and Dynamics	Pedagogical interaction is largely confined strictly to the traditional human-to-human dyad (teacher-student, peer-to-peer) constrained within highly structured, temporally and physically bounded physical classroom environments.	Interaction paradigm dramatically expands to encompass a complex, continuous triad (human-AI-human), characterized by ubiquitous, personalized, and virtually boundaryless intellectual engagement with intelligent conversational agents and massive LLMs.
Linguistic Focus and Output	Prioritizes rigid structural accuracy, the flawless imitation of idealized native-speaker models, and the mass production of standard, highly generalized texts strictly across a limited, pre-defined set of academic genres.	Prioritizes deep pragmatic appropriateness, subtle cross-cultural nuance, and the advanced ability to customize, recursively refine, and successfully orchestrate complex, highly domain-specific professional discourses exclusively through skilled human-AI collaboration.
Evaluation Standard and Mechanism	Relies entirely on summative, heavily product-oriented assessment methodologies based almost exclusively on delayed, high-stakes standardized testing of highly discrete, isolated language skills (vocabulary lists, grammar rules, reading comprehension).	Employs continuous, formative, process-oriented assessment systems utilizing sophisticated Evidence-based Teaching Management and dynamic Capability Profiling to accurately measure prompt negotiation strategies, iteration frequency, and complex ethical judgment.

3.2 Professional Writing and Lifelong Learning Implications

The profound transition systematically detailed and illustrated in "Table 1" has massive, cascading implications for the practical, real-world application of foreign language skills, particularly within the highly demanding realm of professional academic and complex business writing. When university students actively engage in structured human-AI collaborative writing strategies, the fundamental cognitive dynamics and physiological processes of composition are radically and permanently altered. The artificial intelligence system effectively acts as a tireless, highly

sophisticated brainstorming partner, an instantaneous structural editor capable of reorganizing massive texts, and an incredibly vast, accessible repository of complex stylistic variations. However, it is crucial to recognize that the ultimate pedagogical efficacy and professional value of this technological collaboration are entirely, inextricably dependent on the individual student's highly developed ability to exert absolute executive control over the AI's underlying generative processes.

The human student must consciously and deliberately act as the ultimate, final arbiter of linguistic meaning, taking total responsibility for

ensuring that the AI-assisted output perfectly aligns with the originally intended argumentative structure, the specific cultural expectations of the target audience, and the overarching rhetorical purpose of the document. This advanced collaborative writing strategy absolutely does not diminish, replace, or negate the fundamental necessity of possessing strong foundational writing and analytical skills; rather, it significantly elevates them. It strictly requires students to consistently engage in much higher-order editorial reasoning, subtle stylistic refinement, and rigorous, skeptical critical fact-checking to actively mitigate the inherent, well-documented risks of algorithmic bias, factual hallucination, and stylistic homogenization [16].

Furthermore, the deep institutional integration of Human-AI Interaction Negotiation Competence fundamentally and permanently alters the broader landscape of professional development and self-directed, lifelong learning for foreign language professionals. In a truly digitally empowered, seamlessly integrated educational ecosystem, the AI agent can effectively serve as a ubiquitous, highly personalized, and relentlessly objective mirror for continuous reflective practice. By systematically analyzing their own historical interaction logs, meticulously reviewing their prompt evolution histories, and critically examining the iterative, step-by-step evolution of their translated texts, students can gain unprecedented, highly granular insights into their own deeply embedded cognitive blind spots, recurring linguistic error patterns, and fundamental strategic weaknesses. This newly available capacity for AI-assisted, data-driven reflection actively cultivates an extraordinarily high degree of metacognitive awareness. It serves to completely transform the traditional foreign language learner from a highly dependent, passive pupil waiting for instructor correction into a fiercely autonomous, highly adaptable, lifelong learner who is fully capable of leveraging emerging technology for continuous, self-directed professional improvement and rapid adaptation to shifting global economic realities [17].

4. CULTIVATION STRATEGIES

4.1 OBE Curricular Alignment and Ecosystem Architecture

The successful, sustainable operationalization of Human-AI Interaction Negotiation Competence within the specific context of applied undergraduate colleges necessitates a comprehensive, highly

systemic, and often disruptive overhaul of the entire institutional pedagogical architecture. This mandatory overhaul must be firmly and uncompromisingly rooted in the foundational philosophy of Outcomes-Based Education (OBE), thereby ensuring that every single curricular intervention, technological adoption, and assessment modification is intentionally, precisely designed backward from the specific, anticipated professional competencies actively required by the Greater Bay Area's rapidly evolving digital economy. In this rigorous paradigm, an authentic AI-driven Pedagogical Transformation is absolutely not defined as a haphazard, unstructured injection of the latest generative technology into the traditional classroom, but rather as a meticulously planned, deeply aligned, and continuously monitored educational strategy.

The core foreign language curriculum must be systematically torn down and restructured to integrate advanced algorithmic literacy, sophisticated prompt engineering techniques, and strict ethical AI usage protocols seamlessly with traditional advanced linguistic training and cross-cultural communication theory. This complex curricular alignment strictly requires a highly rigorous, documented mapping of overarching learning objectives, specific daily instructional activities, and highly granular assessment rubrics. This mapping ensures that the active cultivation of Human-Machine Synergy is an explicit, highly measurable, and universally understood outcome, rather than an accidental, inconsistent, or incidental byproduct of mere casual technology exposure. Professional instructors must be trained to explicitly define for their students exactly what constitutes a successful, highly productive negotiation with a generative AI system. They must establish mathematically and linguistically clear criteria for prompt precision, critical output evaluation, and the efficiency of iterative refinement, thereby providing their students with a highly transparent, actionable roadmap for fully mastering these incredibly complex, highly hybridized sociotechnical competencies [18].

To facilitate and sustain this profound systemic transformation, it is absolutely imperative for university administrations to actively construct and fund a highly robust, technologically advanced, and fundamentally pedagogically sound digital environment. This integrated environment must seamlessly and securely connect existing institutional learning management systems (LMS), external generative AI application programming

interfaces (APIs), and highly comprehensive, visually intuitive data analytics dashboards. The ultimate institutional objective is to carefully architect a holistic digital ecosystem where

language learning becomes continuous, highly personalized, and hyper-responsive to the individual, fluctuating cognitive trajectories of the diverse student body.

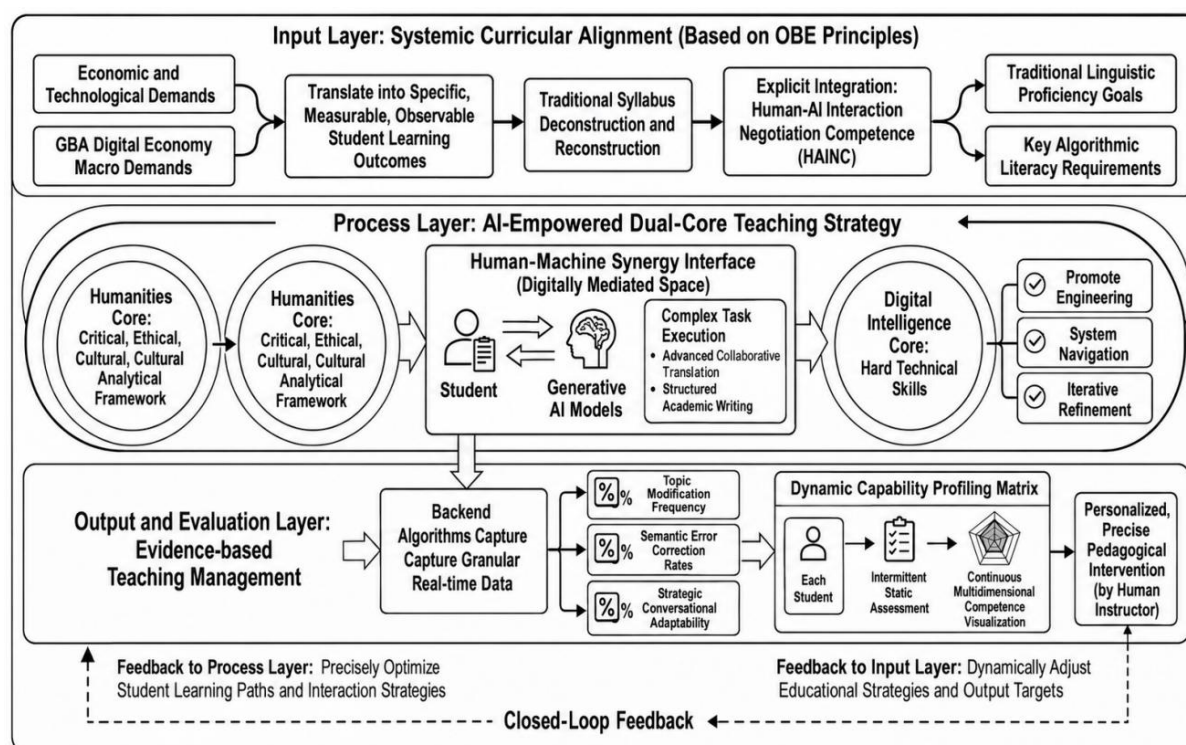


Figure 1 A highly detailed architectural illustration of the proposed human-AI collaborative intelligent teaching management ecosystem.

The ecosystem in “Figure 1” is fundamentally and entirely grounded in the rigorous principles of Outcomes-Based Education. This highly integrated ecosystem operates continuously through three distinct, interdependent, and cyclical functional layers. The Input Layer represents the absolute foundational stage of systemic curricular alignment, where the broad, macro-level economic and technological demands of the Greater Bay Area's digital economy are meticulously translated into highly specific, measurable, and observable student learning outcomes. Within this foundational layer, the traditional, rigid course syllabus is completely deconstructed and intelligently rebuilt to explicitly, formally integrate Human-AI Interaction Negotiation Competence, intentionally forcing a delicate but necessary balance between traditional linguistic proficiency goals and vital new algorithmic literacy requirements.

Moving forward to the Process Layer, the ecosystem actively implements an innovative AI-empowered dual-core teaching strategy within the classroom. This dynamic layer is uniquely

characterized by the constant, intentional interplay between the foundational humanities core—which provides the indispensable critical, ethical, and cultural analytical framework—and the modern digital intelligence core, which actively supplies the hard technical skills required for effective prompt engineering, system navigation, and iterative refinement. Situated exactly at the conceptual center of this active processing layer is the Human-Machine Synergy Interface, a digitally mediated space where students engage deeply in complex, high-stakes task execution, such as advanced collaborative translation or highly structured academic writing, thereby engaging in a relentless, continuous feedback loop with powerful generative AI models.

Finally, the Output and Evaluation Layer serves to fully operationalize the concept of Evidence-based Teaching Management. This critical analytical layer utilizes advanced backend algorithms to capture highly granular, real-time data from the students' ongoing interactions with the AI platform, automatically analyzing complex

behavioral metrics such as exact prompt modification frequency, the precise speed of semantic error correction rates, and overall strategic conversational adaptability. This massive stream of data is rapidly synthesized by the system to automatically generate a highly visual, incredibly detailed Dynamic Capability Profiling matrix for every single student. This specific technological intervention definitively moves the concept of academic assessment away from episodic, static testing toward a state of continuous, multidimensional visualization of actual learner competence. This highly detailed profile then directly, immediately informs highly personalized, targeted pedagogical interventions by the human instructor, effectively creating a perfect closed-loop educational system that continuously refines both individual student learning trajectories and the overarching instructional strategies of the institution.

4.2 Faculty Development and Evidence-Based Management

The ultimate, long-term successful implementation of this highly complex sociotechnical ecosystem relies absolutely and unequivocally on the continuous, heavily funded professional development and the advanced AI literacy of the university's instructional faculty. In this new paradigm, language educators can absolutely no longer function merely as passive content deliverers or simple grammatical correctors; they must rapidly evolve to become highly sophisticated, technologically adept orchestrators of Human-Machine Synergy. This profound shift requires institutions to mandate targeted, rigorous training programs that specifically and deeply elevate language teacher AI literacy, enabling the faculty to deeply understand the complex mathematical underlying mechanisms, the inherent statistical limitations, and the profound ethical implications of utilizing large language models in a pedagogical setting.

Instructors must be thoroughly equipped with the skills to independently design highly complex, explicitly AI-resistant assessment tasks—tasks that are specifically engineered to evaluate original higher-order thinking, cultural empathy, and complex ethical reasoning rather than mere factual information retrieval or basic text generation, which the AI can do instantly. Furthermore, educators must rapidly develop the data literacy and analytical skills necessary to accurately interpret

the incredibly complex data visualizations routinely generated by the Capability Profiling system, seamlessly translating cold, quantitative interaction metrics into actionable, deeply empathetic, and highly targeted human pedagogical interventions [19].

The ultimate, systemic realization of true Evidence-based Teaching Management within this proposed educational ecosystem is practically achieved through the deliberate deployment of highly specialized, pedagogically fine-tuned conversational AI chatbots that are designed specifically for advanced English language teaching and learning. These highly advanced, customized systems do significantly more than simply provide generic, open-ended conversational practice; they are explicitly programmed through customized system prompts to act as highly intelligent, relentless cognitive scaffolds. They are designed to intentionally challenge students to articulate increasingly complex abstract ideas, forcing them to logically defend their specific linguistic and stylistic choices, and requiring them to actively, persistently negotiate semantic meaning in real-time under simulated professional pressure.

By systematically recording, transcribing, and utilizing natural language processing to analyze these dense conversational interactions, applied undergraduate colleges can finally build a truly comprehensive, highly empirical evidence base of actual student linguistic performance. This deeply data-driven approach ensures unequivocally that the critical cultivation of Human-AI Interaction Negotiation Competence is absolutely not left as a theoretical, aspirational abstraction, but rather becomes a highly demonstrable, mathematically measurable, and incredibly responsive educational reality, precisely calibrated to forge the adaptable linguistic and digital leaders desperately required by the future global economy [20].

5. CONCLUSION

The rapid, pervasive integration of generative artificial intelligence into global higher education mandates an immediate, fundamental, and highly systemic restructuring of foreign language talent cultivation paradigms, presenting a structural challenge that is particularly acute and immediately consequential for applied undergraduate colleges operating within the highly dynamic, technologically advanced economic landscape of the Greater Bay Area. The comprehensive research and theoretical synthesis presented in this paper

unequivocally demonstrate that the rapid institutional transition from traditional, unidirectional, transmission-based pedagogical models to a highly advanced, integrated ecosystem of true Human-Machine Synergy is no longer an optional innovation, but an absolute strategic necessity for institutional survival and student success.

Placed firmly at the conceptual and practical center of this massive educational transformation is the deliberate cultivation of Human-AI Interaction Negotiation Competence, a highly sophisticated, multidimensional cognitive and technical skill set that directly empowers language learners to critically evaluate, strategically prompt, and iteratively collaborate with powerful artificial intelligence systems. By meticulously aligning all curricular objectives with the proven principles of Outcomes-Based Education and rigorously implementing an innovative dual-core teaching strategy that equally, systematically values deep humanistic inquiry and high-level digital intelligence, educational institutions can effectively and permanently bridge the widening gap between traditional academic instruction and modern, highly digitized professional demands.

Furthermore, the active construction of a fully integrated, collaborative intelligent teaching management ecosystem, driven continuously by the principles of Evidence-based Teaching Management and the deployment of dynamic Capability Profiling, provides modern educators with the unprecedented, granular data required to deliver highly precise, personalized instructional interventions at scale. Ultimately, by proactively adopting these highly innovative pedagogical strategies and strictly adhering to the fundamental ethical, human-centered guidelines established by major global policy frameworks, applied universities can definitively ensure that their foreign language graduates are not economically displaced or rendered obsolete by relentless technological advancement. Instead, these graduates will be uniquely, profoundly equipped to safely lead, ethically innovate, and professionally thrive in the complex, digitally empowered, and highly synergized global economy of the future.

ACKNOWLEDGEMENTS

This research was supported by China Association of Private Education 2024 Annual Research Project: School Development Category (No. CANFZG24312).

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