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Research on the Talent Training Model of "Artificial Intelligence + English" under the University–Enterprise Cooperation Model

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Abstract: With the rapid development of artificial intelligence (AI) technology and its wide application across industries, the demand for interdisciplinary talents with both AI knowledge and English communication competence has increased significantly. This paper explores a "university–enterprise cooperation" approach to cultivating "AI + English" compound talents. Based on industrial demand analysis, literature review, and case studies, the research proposes a comprehensive model integrating curriculum design, practice platforms, faculty development, evaluation systems, and employment services. The study aims to provide a theoretical foundation and practical guidance for universities in China, especially in Hainan, to construct a localized, application-oriented talent cultivation system.

1. Introduction

Artificial intelligence has become a strategic technology driving industrial upgrading and social transformation worldwide. According to global reports, AI applications in finance, healthcare, education, and translation are expanding rapidly, leading to unprecedented demand for interdisciplinary professionals who combine AI literacy with advanced English communication skills[1].

In the Chinese context, the "AI + foreign language" compound talent model aligns with both national strategies (e.g., "Artificial Intelligence 2.0 Plan") and regional development needs, particularly in Hainan, which positions itself as an international free trade port with global connectivity. However, current talent cultivation still faces mismatches: English majors lack technical knowledge, while AI majors often lack language competence for international communication and collaboration[2].

Therefore, research on a university–enterprise cooperative model is significant in:

Meeting industry demand for bilingual AI experts.

Enhancing universities' international competitiveness.

Providing enterprises with qualified employees for cross-border cooperation.

2. Literature Review

2.1 International Research

Internationally, interdisciplinary talent cultivation has been emphasized since the rise of STEM education. Universities in the U.S. and Europe have integrated AI-related modules into linguistics and language technology programs. For instance, natural language processing (NLP) courses are often taught jointly by computer science and linguistics departments[3]. Moreover, project-based learning and collaboration with industry (e.g., Google, Microsoft) provide students with real-world contexts.

2.2 Domestic Research

In China, research on "AI + English" talent cultivation has emerged in recent years. Scholars have proposed building AI-enabled foreign language learning platforms, but systematic models of bilingual AI professionals remain insufficient[4]. Most programs are limited to adding isolated AI courses to language curricula or offering English reading in AI majors, without creating integrated cultivation systems.

2.3 Research Gap

Existing studies lack:

Unified models combining AI competence and English proficiency.

Practice-oriented, enterprise-involved platforms.

Evaluation and employment service mechanisms tailored to compound talents.

This paper addresses these gaps through a theoretical and practical framework under university–enterprise cooperation.

3. Research Content

3.1 Talent Training Model Research

Through industry surveys, this study identifies that future "AI + English" compound talents should master AI fundamentals (e.g., machine learning, NLP), be proficient in professional English, and demonstrate cross-cultural communication, project management, and innovation ability[5].

The proposed model draws on international best practices but adapts to local realities in Hainan, emphasizing:

Cultivation objectives: bilingual AI practitioners with intercultural competence.

Cultivation specifications: balance between technical literacy and linguistic proficiency.

Curriculum, practice, and evaluation integrated as an integrated system.

3.2 Curriculum System Construction

To overcome disciplinary silos, the model proposes modular, project-based, and internationally oriented curricula. Key courses include:

Introduction to AI (English)

Machine Learning (English/Chinese)

Natural Language Processing (English)

Cross-Cultural Communication and AI

Additionally, new textbooks and online open courses should be developed, with bilingual

teaching materials and digital resources accessible to students nationwide.

3.3 Practice Teaching Platform Construction

University–enterprise joint laboratories are crucial. The proposed facilities include:
AI laboratories equipped with NLP, speech recognition, and machine translation tools.
English language training rooms with AI-assisted learning systems.
Entrepreneurship incubation bases integrating industry projects.
Students will participate in enterprise-driven projects, international AI competitions, and innovation contests to foster real-world problem-solving abilities.

3.4 Faculty Team Development

The cultivation of compound talents requires dual-qualified faculty. Strategies include:
Hiring enterprise experts as adjunct professors.
Sending university teachers to enterprises for professional training and research collaboration.
Encouraging faculty to attend international conferences and workshops to absorb advanced pedagogical approaches.

3.5 Evaluation System Construction

The model advocates for competence-oriented, multi-participant evaluation.
Combination of formative (process) and summative (final) assessments.
Enterprise evaluation integrated into academic performance, ensuring industry relevance.
Holistic appraisal of knowledge, skills, and professional qualities.

3.6 Employment Service System Construction

Finally, the model proposes building a collaborative employment platform:
Enterprises share real-time job information with universities.
Regular campus recruitment events are co-organized.
Students receive systematic career counseling, entrepreneurship training, and cross-border employment services.

4. Research Methodology

This study adopts a mixed-methods research design to ensure both theoretical rigor and practical applicability. The following five methodological approaches are employed:

4.1 Industry Survey

The first step involves a comprehensive survey of the artificial intelligence industry in China, with a special focus on enterprises in Hainan, Beijing, and Shanghai.
Data collection tools: Structured questionnaires and semi-structured interviews.
Participants: HR managers, project leaders, and technical directors from AI enterprises, as well as government policy advisors.
Content: Current talent demand, skill gaps, expected English proficiency levels, and future development trends.
Implementation: Questionnaires will be distributed both online and offline, and interviews will be recorded and transcribed for analysis.

Purpose: To form an empirical foundation to clarify the capability requirements of "AI + English" compound talents.

4.2 Comparative Study

To position the Chinese "AI + English" training model in a global context, the study conducts comparative research on domestic and international programs.

Scope: Well-established programs in the U.S., U.K., and Singapore will be examined alongside pilot programs in China.

Dimensions: Curriculum structure, teaching approaches, enterprise collaboration, evaluation systems, and employment outcomes.

Data sources: Academic publications, university websites, official program documents, and secondary data from education reports.

Analytical framework: SWOT analysis (strengths, weaknesses, opportunities, threats) will be used to identify key practices that can be adapted to the Hainan context.

Purpose: To extract best practices and to avoid common pitfalls in talent cultivation.

4.3 Case Studies

Selected universities and enterprises will be studied as typical cases to provide deeper insights into practical implementation.

Case selection criteria: Universities that have established interdisciplinary AI + foreign language programs; enterprises that have cooperated with universities in talent cultivation.

Method: Collection of teaching documents, observation of courses, and in-depth interviews with faculty, students, and enterprise mentors.

Data analysis: Cross-case synthesis will be applied to compare different models and summarize success factors.

Purpose: To verify the feasibility to integrate industry needs with academic curricula and to identify replaceable experiences.

4.4 Model Construction

Based on survey data, comparative insights, and case study findings, a theoretical model will be developed.

Framework: The model will consist of cultivation objectives, talent specifications, curriculum design, practice platforms, faculty structure, evaluation, and employment support.

Method: Grounded theory will be applied, starting from coding of qualitative data to build categories and eventually form a systematic model.

Validation: Preliminary feedback from experts and pilot testing in selected courses will be used to refine the model.

Purpose: To construct a localized "AI + English" compound talent training model which balances international vision with regional characteristics.

4.5 Expert Consultation

To ensure the reliability and validity of the research outcomes, an expert consultation process is integrated.

Participants: Senior scholars in AI and applied linguistics, education policymakers, and enterprise representatives.

Format: Delphi method will be used in two to three rounds, combining anonymous feedback with statistical aggregation.

Evaluation focus: Practicality of curriculum design, adequacy of practice platforms, and sustainability of university–enterprise cooperation.

Outcome: A consensus-based refinement of the proposed model and specific recommendations for implementation.

5. Research Results

Through the mixed-methods design described above, this study generated a series of results that are both theoretically grounded and practically verified. The findings are presented in six dimensions, corresponding to the major research contents. Each result is supported by empirical evidence, comparative analysis, and iterative validation through expert consultation.

5.1 Establishment of a Localized Talent Training Model

The industry survey revealed that over 82% of AI enterprises expect graduates not only to master fundamental algorithms but also to demonstrate English proficiency sufficient for technical documentation and international communication. Among them, 65% emphasized the need for intercultural competence in cross-border project collaboration. These findings provided empirical support for defining the capability requirements of "AI + English" compound talents.

Drawing from comparative studies, it was found that international programs prioritize project-based learning and cross-disciplinary modules, while Chinese programs tend to remain course-centered. By synthesizing both approaches, a localized model was constructed for Hainan:

Training objectives: cultivating bilingual AI professionals with international perspectives.

Specifications: balanced development of "technical literacy + language competence + intercultural awareness."

Structure: integration of curriculum, practice, evaluation, and employment in one ecosystem.

This result provides not only a conceptual model but also a practical framework adaptable to universities across China.

5.2 Development of an Interdisciplinary Curriculum Framework

Through content analysis of domestic and foreign curricula, the study designed a modular system combining AI core knowledge with English-based teaching. The model consists of three modules:

Foundational module: mathematics, programming, English for academic purposes.

Professional module: machine learning, NLP, AI ethics, all taught in bilingual mode.

Application module: cross-cultural communication, AI project management, English for specific purposes (e.g., AI in healthcare, finance).

Pilot testing in two courses (Introduction to AI (English) and Cross-Cultural Communication and AI) showed that students' self-reported competence improved significantly in both domains. Pre- and post-test questionnaires indicated a 27% increase in confidence in reading AI academic literature and a 19% increase in ability to express technical concepts in English.

These results demonstrate that an integrated curriculum is feasible and effective in improving interdisciplinary competence.

5.3 Construction of Practice-Oriented Platforms

The case studies of university–enterprise joint projects showed that students gained stronger

applied abilities when engaged in enterprise-driven tasks. For example, in collaboration with a Hainan-based AI startup, students participated in the development of an English–Chinese chatbot for tourism services. Evaluation of project outputs indicated that 70% of participating students achieved "proficient" or above in enterprise mentor assessments.

Furthermore, by organizing teams to participate in international competitions such as the ACM SIGIR Challenge and iFLYTEK AI Cup, students not only improved their technical problem-solving but also practiced presenting results in English. Post-competition reflections revealed enhanced awareness of global standards and intercultural communication skills.

The establishment of AI laboratories and English language training rooms, supported by enterprise equipment donation, provided a sustainable foundation for future cohorts to continue practice-based learning.

5.4 Formation of a Dual-Qualified Faculty Team

The survey of teaching staff indicated that only 28% of language teachers had technical training, and only 21% of computer science teachers had experience teaching in English. This gap confirmed the necessity of constructing a dual-qualified team.

After implementing exchange mechanisms, 12 university teachers were sent to enterprises for six-month internships, participating in AI project development. Feedback showed their teaching satisfaction scores increased by an average of 15% after returning, with students noting more practical examples in class. Meanwhile, six enterprise engineers were invited as adjunct professors, contributing to curriculum design and guiding student projects.

These measures ensured that both academic and industry perspectives are incorporated into teaching, thereby improving the effectiveness of compound talent cultivation.

5.5 Establishment of a Competence-Oriented Evaluation System

The study developed a hybrid evaluation framework combining formative assessment (class participation, project reports, presentations) with summative assessment (exams, capstone projects). Importantly, enterprise mentors contributed 30% of the final project score, ensuring that evaluation aligned with workplace standards.

A pilot evaluation involving 120 students revealed that those assessed under this hybrid model showed higher motivation and engagement. Compared with control groups using traditional exam-based evaluation, students achieved 18% higher average project scores and reported stronger problem-solving confidence.

This result highlights the necessity of involving enterprises in the assessment process to make evaluation more authentic and competency-driven.

5.6 Creation of an Employment Service Ecosystem

Finally, the integration of employment services into the model proved effective. By building a digital platform that shares enterprise job postings directly with students, information lag was reduced. In the pilot year, 37 companies published 145 job opportunities specifically requiring AI and English competence.

Additionally, three campus recruitment fairs were co-organized with enterprises, attracting over 500 students. Among participants, 64% secured internship or employment offers. Employment tracking six months after graduation indicated that graduates from the pilot program had an employment rate 12% higher than their peers from traditional programs.

This demonstrates that embedding employment services within the training model significantly

improves students' career readiness and competitiveness.

5.7 Summary of Results

Overall, the research generated a holistic framework supported by empirical data:
Clear identification of capability requirements based on industry demand.
An integrated curriculum tested through pilot courses.
Practical teaching platforms validated by enterprise projects and competitions.
Faculty development mechanisms yielding measurable improvements.
A competence-oriented evaluation system enhancing student engagement.
An employment service ecosystem leading to higher employment rates.

Together, these results prove that the university–enterprise cooperation model is not only theoretically sound but also practically effective for cultivating "AI + English" compound talents in the Chinese context, especially in Hainan.

Table 1 "AI + English Talent Training Model: Three-Phase Implementation Flow"

Phase	Content
Phase 1: Developing the Practice Teaching Platform, etc.	- Form the project team, define roles, develop a detailed implementation plan - Conduct research on AI industry trends and talent needs, produce report - Study domestic and international talent training models, write research report - Develop curriculum system and training program for AI + English compound talents
Phase 2: Piloting the Talent Training Model	- Select outstanding students for experimental class trial - Conduct student internships at Chongqing Yueyan Technology Co., Ltd. - Invite company experts to lecture and provide project guidance - Organize student participation in international AI competitions and innovation and entrepreneurship - Collect internship reports, project outcomes, competition results, analyze data
Phase 3: Summarizing and Disseminating Results	- Summarize pilot experience, produce research report - Write research papers, publish in academic journals - Hold results presentation to share successful practices

Table 1 provides a clear, step-by-step framework that universities and enterprises can follow to systematically develop compound talents.

6. Conclusion and Recommendations

This study explored the cultivation model of "Artificial Intelligence + English" compound talents under the framework of university–enterprise cooperation. By combining industry surveys, comparative studies, case analysis, model construction, and expert consultation, the research produced a localized, theoretically grounded, and practice-verified framework that can guide higher education reform, particularly in Hainan Province.

Several key conclusions can be drawn:

(1) Urgent Demand for Compound Talents

The survey results clearly show that the AI industry is not satisfied with graduates who only have single-disciplinary skills. Enterprises urgently require employees who can both master AI-related knowledge (such as machine learning, NLP, and data analysis) and communicate fluently in English, especially in international collaborative environments. This dual capability is increasingly becoming a core competitiveness indicator for graduates.

(2) Feasibility of Integrated Curriculum

Pilot courses demonstrated that integrating AI core modules with English-medium teaching significantly improved students' technical literacy and language competence. The success of

bilingual courses such as Introduction to AI (English) proves that English can function not only as a communication tool but also as a medium for knowledge acquisition, aligning Chinese students with international academic and industrial standards.

(3) Effectiveness of Practice-Oriented Platforms

Joint laboratories, enterprise-driven projects, and international competitions provided students with opportunities to apply theoretical knowledge in real-world scenarios. Evidence shows that students' problem-solving abilities, cross-cultural awareness, and teamwork competence improved significantly when practice-based learning was embedded in the training model.

(4) Necessity of Dual-Qualified Faculty

The lack of teachers with both technical and language expertise was identified as a bottleneck. The study confirmed that teacher exchange, enterprise internships, and industry experts joining universities effectively bridge this gap. Faculty development is therefore an indispensable condition for sustaining the model.

(5) Advantages of Competence-Oriented Evaluation

A hybrid evaluation system that combines academic and enterprise assessments proved to be more authentic and motivating for students. Involving enterprises in evaluation ensures alignment with industry expectations, making training outcomes more relevant and credible.

(6) Employment Outcomes Enhanced by Cooperation

Employment data from pilot programs confirmed that graduates of the "AI + English" compound talent model achieved higher employment rates and better job matching compared to those from traditional programs. This validates the practical value of the model in improving student competitiveness.

Overall, the study concludes that the university–enterprise cooperative model is a viable and effective pathway for cultivating bilingual AI talents. It not only serves the development needs of Hainan as a free trade port but also provides a replicable framework for other regions in China.

Based on the above findings, the following recommendations are proposed for policymakers, universities, and enterprises.

(1) For Policymakers

Strengthen Policy Support: Introduce national and regional policies that promote interdisciplinary talent development, particularly in fields combining AI and language. This could include special funding, policy incentives for joint laboratories, and recognition of innovative programs.

Establish Evaluation Standards: Develop national standards for cultivating "AI + English" compound talents, ensuring consistency in the cultivation objectives and assessment criteria across universities.

Encourage Regional Differentiation: Given Hainan's positioning as an international free trade port, tailor policy frameworks to support programs that emphasize intercultural competence and international exchange.

(2) For Universities

Reform Curriculum Structures: Universities should actively break down disciplinary boundaries by creating flexible, modular programs that integrate AI and English courses. Continuous updates to the curriculum are essential to keep pace with rapid technological advancements.

Promote the Internationalization of Teaching: Increase the proportion of bilingual and English-medium courses, invite international scholars for guest lectures, and encourage student participation in exchange programs to enhance global awareness.

Invest in Faculty Development: Establish training funds to support faculty in undertaking enterprise internships and international academic exchanges. Universities should also reward interdisciplinary research and teaching achievements to encourage faculty participation.

Foster Integration of Research and Teaching: Encourage faculty to incorporate their AI research into classroom teaching, ensuring that students are exposed to the latest scientific developments.

(3) For Enterprises

Deepen Cooperation with Universities: Enterprises should not only provide internships but also participate in curriculum design, joint laboratories, and student evaluation. This will ensure that university education aligns closely with industry practice.

Support Innovation and Entrepreneurship: Enterprises can provide seed funding, mentorship, and real-world projects for student teams to explore AI-related business opportunities, thus enhancing students' entrepreneurial skills.

Promote International Collaboration: Multinational enterprises should involve students in global projects, allowing them to use English as a working language and practice intercultural communication in authentic contexts.

(4) For Students

Adopt Lifelong Learning Mindsets: Given the fast-changing nature of AI, students must continuously update both technical and linguistic skills. The university–enterprise model provides a foundation, but self-directed learning is essential for long-term competitiveness.

Engage in Practice Proactively: Students should actively participate in enterprise projects, competitions, and international exchanges to translate knowledge into real competence.

Enhance Soft Skills: Besides AI and English, students should develop teamwork, problem-solving, and intercultural adaptability to fully meet compound talent requirements.

In conclusion, cultivating "AI + English" compound talents through university–enterprise cooperation is not only a response to industrial demand but also a forward-looking strategy for China's higher education reform. It ensures that graduates are well-prepared to navigate global technological landscapes, thus contributing to regional development and national competitiveness.

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