

Article

# Digital Empowerment and Value Guidance: Construction and Empirical Study of an AI-Supported "Three-Dimensional Competence" Cultivation Model for College English

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**Abstract:** The rapid construction and strategic development of the Hainan Free Trade Port urgently require the coordinated advancement of advanced language proficiency, profound cross-cultural literacy, and robust ideological and political awareness among university graduates. Aiming to address the persistent problems currently prevalent in college English teaching—such as weakened value guidance, the overly explicit and rigid integration of ideological and political elements, vague ability assessment metrics, and the largely superficial application of artificial intelligence (AI) technologies—this study proposes an innovative pedagogical framework. Specifically, a comprehensive three-dimensional training model encompassing "language skills, cross-cultural cognition, and ideological and political literacy" is systematically constructed, and an AI-empowered teaching closed loop is meticulously designed to facilitate personalized learning. To validate the effectiveness of this proposed framework, a rigorous empirical study was conducted involving 110 college students over a duration of 16 weeks. The quantitative and qualitative results demonstrated that the experimental group performed significantly better than the control group across multiple dimensions, particularly in terms of terminology accuracy, cross-cultural etiquette adaptability, and the active proportion of ideological and political practice. Furthermore, the students' policy comprehension and value judgment abilities experienced substantial increases of 42.3% and 37.6%, respectively. Ultimately, this research provides robust theoretical foundations and highly actionable practical paths for the cultivation of globally competent international talents and the advancement of AI-empowered ideological and political education in higher education institutions.

**Keywords:** college English; artificial intelligence; competence model; higher education; value guidance

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## 1. Introduction

### 1.1. Research Background

The Master Plan for the Construction of Hainan Free Trade Port established a policy framework characterized by "zero tariffs, low tax rates, and a simplified tax system." This initiative has positioned Hainan as a pivotal international hub for China's tourism and modern service industries, generating an urgent demand for scenario-specific linguistic talents in fields such as Tourism English, MICE (Meetings, Incentives, Conventions, and Exhibitions) English, and Cross-border E-commerce English [1]. The core requirements for talent in the Free Trade Port exhibit a "dual-dimensional" structure: on one hand, professionals must possess robust cross-cultural communication skills and specialized language proficiency; on the other, they must maintain a steadfast national identity and firm ethical values, achieving a competence profile that is "rooted in Chinese culture with a global vision."

However, current college English teaching is still characterized by four structural contradictions. First, there is a weakening of value guidance; ideological and political elements are often mechanically inserted through "explicit preaching," resulting in an "additive" or "piecemeal" integration that fails to achieve a deep coupling of professional knowledge and ideological-political connotations. Second, there is a fragmentation of competence cultivation; the lack of a synergistic mechanism between "language skills, cross-cultural cognition, and ideological-political literacy" makes it difficult to meet the multidisciplinary needs of Free Trade Port development. Third, the assessment systems remain vague, lacking precise quantitative standards for three-dimensional competencies, which hinders the scientific measurement of teaching efficacy. Fourth, the application of technology remains superficial; AI technology is largely confined to resource delivery, failing to establish a precision empowerment path that is deeply adapted to specific teaching objectives [2].

As a regional hub connecting China and ASEAN, the Hainan Free Trade Port offers unique policy scenarios—such as cross-cultural communication at the Boao Forum for Asia, multi-language services in offshore duty-free shopping, and international integration practices in the Yangpu Economic Development Zone—which are rich in ideological-political elements like "institutional confidence," "ecological philosophy," and "openness and inclusiveness." Based on these factors, this study extracts teaching materials rooted in the regional characteristics of the Free Trade Port to construct an AI-empowered three-dimensional competence training system [3]. By deeply integrating language teaching, cross-cultural cultivation, and ideological-political education, this research aims to provide a systemic solution for the cultivation of international talents in the Free Trade Port.

### *1.2. Research Significance*

**Theoretical Significance:** This study overcomes the limitations of the binary separation between language teaching and ideological-political education found in existing research by constructing a theoretical teaching framework that reconciles instrumentality, humanism, and political orientation [3]. For the first time, language skills, cross-cultural communication, and ideological-political literacy are integrated into a quantifiable three-dimensional tag system. This provides an operational paradigm for the precise application of AI technology in curriculum-based ideological-political education. Furthermore, it enriches the practical connotations of Constructivist Learning Theory, Cross-cultural Adaptation Theory, and Grounded Theory within the context of foreign language education, filling the gap in quantitative research regarding ideological-political education in foreign language courses under unique regional scenarios.

## **2. Theoretical Foundations and Model Construction**

### *2.1. Core Theoretical Pillars*

#### **2.1.1. Constructivist Learning Theory: Mechanism of Student Learning**

Constructivist Learning Theory posits that learning is a process in which learners actively construct meaning based on their existing experiences and cognitive levels. This process is characterized by individual differences, situationality, and dynamic adjustment [3]. This theory provides three key supports for this study:

1. **Theoretical Foundation for Personalized Instruction:** It emphasizes the design of tiered teaching content tailored to students' cognitive differences.
2. **Core Basis for Situational Task Design:** It advocates for providing "scaffolding" for knowledge construction through authentic scenarios, such as trade disputes in the Free Trade Port (FTP).
3. **Logical Framework for Dynamic Adjustment:** It requires the teaching process to adapt to the student's "Zone of Proximal Development" (ZPD), facilitating a step-by-step elevation of cognitive levels.

### 2.1.2. Cross-Cultural Adaptation Theory: Content of Learning

Cross-Cultural Adaptation Theory provides the content basis for this research by focusing on communication rules and differences across various cultural backgrounds [4]. Within this framework, High-Context/Low-Context Culture Theory offers the core analytical framework for cultivating cross-cultural competence. High-context cultures, such as China and Thailand, rely heavily on context and non-verbal cues to convey meaning, whereas low-context cultures, such as the United States and Germany, prioritize direct and explicit verbal expression.

The application of this theory in this study involves:

- Refining Teaching Content: Designing differentiated communication skill training targeted at interaction scenarios between the FTP, ASEAN (high-context), and Western (low-context) cultures.
- Analyzing Root Causes of Conflicts: Enhancing the depth of instruction through cultural logic analysis.
- Supporting AI-Driven Precision Delivery: Matching appropriate case resources based on students' cultural cognitive levels.

### 2.1.3. Hidden Curriculum Theory: Mechanism of Moral Education

Hidden Curriculum Theory serves as the value-based foundation [5]. It is argued that value education should be subtly integrated through implicit carriers such as teaching scenarios and task interactions, rather than through explicit preaching.

This theory provides the core logic for the integration of ideological and political elements:

- Content: Embedding ideological and political elements into language analysis and cross-cultural practices of related cases.
- Process: Enabling students to experience value connotations in practice through activities like group collaboration and role-playing.
- Assessment: Utilizing AI technology to analyze students' natural expressions in authentic tasks, thereby achieving a dynamic evaluation of their ideological and political literacy.

### 2.1.4. Grounded Theory: Methodology for Verification

Grounded Theory serves as the methodological basis for this study. It is a qualitative research method that extracts theory from raw data, with the core characteristic being that "theory is grounded in the data" rather than verifying a pre-existing theoretical framework [6]. The logic involves open coding, axial coding, and selective coding of raw materials, combined with the constant comparative method to gradually refine concepts, categories, and their interrelationships, ultimately forming an explanatory theoretical model.

In this study, Grounded Theory provides a scientific paradigm for analyzing qualitative data, such as simulated negotiation records and in-depth interviews [7]. Through three-level coding, it uncovers the internal mechanisms of students' three-dimensional competence improvement, ensuring the systematicity and credibility of the qualitative research findings.

## 2.2. Design of the "Three-Dimensional Competence" Model

Based on the aforementioned theories, this study constructs a "Three-Dimensional Competence" training model comprising "Language Skills, Cross-Cultural Cognition, and Ideological-Political Literacy." The core feature of this model is the mutual interpenetration and synergetic development of these three dimensions:

- Language Skills serve as the foundational carrier;
- Cross-Cultural Cognition acts as the bridging link;
- Ideological-Political Literacy provides the value guidance.

Together, these three dimensions serve the overarching goal of cultivating international talents for the Free Trade Port (FTP) (As shown in Table 1).

**Table 1.** Core Indicators of the "Three-Dimensional Competence" Model and Their Mapping to FTP Scenarios

Competence Dimension	Core Indicators	Mapping to FTP Scenarios
Language Skills	Accuracy of professional terminology; Fluency in cross-cultural text translation; Interpretation ability of policy documents.	Cross-border contract translation; English interpretation of FTP policies; Communication at international exhibitions/conventions.
Cross-Cultural Cognition	Sensitivity to cultural differences; Rationality of conflict resolution strategies; Cultural adaptability.	Business negotiations with ASEAN merchants; Handling of cross-cultural trade disputes; Communication in multicultural settings.
Ideological-Political Literacy	Expression of national sentiment (patriotism); Awareness of global responsibility; Institutional confidence and a sense of openness and inclusivity.	Cultural dissemination in FTP construction; Fair trade practices; Practicing the concept of a "Community with a Shared Future for Mankind."

### 3. Practical Implementation Path Design

#### 3.1. Construction of an AI-Empowered Dynamic Proprietary Corpus

##### 3.1.1. Motivations for Construction

First, it addresses regional uniqueness. Existing general-purpose corpora often fail to cover specific policy scenarios of the Free Trade Port, such as offshore duty-free shopping and cross-border cooperation in the Yangpu Bonded Zone. A proprietary corpus ensures that teaching content aligns with the developmental needs of Hainan. Second, it supports AI-driven precision delivery. The relevance and richness of the corpus directly determine the effectiveness of AI-enabled personalized instruction. Third, it provides empirical reliability, offering solid data support for research findings through a standardized corpus construction process.

##### 3.1.2. Construction Path

The corpus focuses on Hainan FTP scenarios and is derived from three channels: official sources such as policy interpretations from the FTP official website, media reports from both local and international outlets, and teaching practices including English teaching cases and authentic student error samples from local universities. The corpus comprises 1.2 million words of authentic linguistic data, featuring 30 cross-border trade cases from the past five years, 15 international business contract templates, and 20 cross-cultural communication examples, all verified for suitability by three English Language Teaching experts.

The data is subjected to multi-dimensional tagging based on "Three-Dimensional Competence Goals": core vocabulary is tagged for language skills, cultural conflict points for cross-cultural cognition, and ideological anchors for ideological-political literacy [8]. Simultaneously, data is stored structurally by "difficulty level" and "scenario category," establishing clear "Tag-Corpus" mapping rules.

### 3.2. Implementation of AI-Driven Personalized Recommendation Mechanisms

#### 3.2.1. Core Prerequisite: Construction of a Three-Dimensional Competence Tag Library

To enable precise AI assessment of student abilities, a quantifiable tag library was pre-set. This includes Language Skill Tags (e.g., Level 3 standard for "Legal Terminology Translation Accuracy"), Cross-Cultural Cognition Tags (e.g., Level 3 standard for "Cultural Difference Sensitivity"), and Ideological-Political Literacy Tags (e.g., Level 3 standard for "FTP Policy Awareness Depth"). The library was developed through a four-step process: literature review, preliminary tagging, expert revision, and pre-test adjustment, ensuring high alignment with educational goals and the theoretical framework.

#### 3.2.2. Technical Core: Dynamic Matching Algorithm Design

AI achieves personalized instruction through a "Student Data - Competence Tag - Resource Delivery" mapping logic. During the data collection phase, quantifiable data such as error types and discussion keywords are gathered. In the tag matching phase, this data is compared against the tag library to determine the student's current proficiency level. In the resource invocation phase, based on the theory of the "Zone of Proximal Development" (ZPD), the system provides a resource combination slightly above the student's current level. For instance, if a student has a "25% error rate in legal terminology" and "can identify contract frameworks but overlooks cultural differences," the algorithm will deliver a combination of a "Comparative Table of Basic Legal Terminology" and a "Short Video on Sino-Western Contractual Cultural Differences."

#### 3.2.3. Critical Clarification: The Essence of AI "Judgment Ability"

AI does not possess autonomous cognition; its judgment logic is a computational process based on data matching. By capturing characteristic information from student behavior and correlating it with pre-set tag libraries and corpora, the system achieves precise resource delivery and dynamic assessment. This is essentially the technical implementation of pedagogical laws and student cognitive characteristics [2].

### 3.3. Situational Teaching Task Design

Based on authentic FTP scenarios, a three-tier progressive task system has been designed:

- **Basic Tasks:** These focus on core FTP policies and business scenarios, enhancing language skills through text translation and terminology interpretation.
- **Advanced Tasks:** These tasks center on cross-cultural conflict scenarios, integrating cross-cultural understanding through simulated negotiations and dispute resolution.
- **Innovative Tasks:** These consolidate the three-dimensional goals. By writing "Proposals for Cultural Adaptability in FTP Fruit Trade," students enhance their ideological and political literacy. These tasks require the integration of "mutual benefit/win-win" and "fair trade" philosophies, linking them to the strategic significance of FTP-ASEAN cooperation.

### 3.4. Personalized Feedback and Evaluation Mechanisms

#### 3.4.1. Differentiated Resource Delivery

Based on the analysis of task performance using Business Intelligence (BI) systems, customized supplementary resources are provided: micro-lessons on terminology for those with weak language skills; cultural case studies and communication guides specific to ASEAN for those lacking cross-cultural understanding; and interviews with FTP builders or international ecological cooperation cases for those needing deeper ideological and political insight.

#### 3.4.2. Dynamic Assessment of Three-Dimensional Competence

An "Implicit Ideological-Political Literacy Assessment Model" was constructed. Using Natural Language Processing (NLP) to analyze student outputs, the system

generates a "Three-Dimensional Competence Radar Chart." The indicators cover four dimensions: Identification with Risk-Sharing, Sensitivity to Cross-Cultural Differences, Strategic Relevance to the FTP, and Innovation in Problem Solving [9, 10]. Each dimension is graded into three levels: Not Mastered, Preliminary Mastery, and Proficient Mastery (As shown in Table 2).

**Table 2.** Dynamic Evaluation Indicator System for Three-Dimensional Competence

<b>Evaluation Dimension</b>	<b>Core Connotation</b>	<b>Grading Standards</b>
Dim 1: Identification with Risk-Sharing (Corresponds to "Community with a Shared Future")	Awareness and acceptance of collaborative risk-sharing and win-win concepts.	Unacquired: Emphasizes only contractual rigidity; rejects negotiation. Preliminary: Accepts negotiation but lacks a concrete plan. Proficient: Proposes a collaborative solution tailored to the scenario.
Dim 2: Cross-Cultural Sensitivity (Corresponds to "Cross-Cultural Communication")	Ability to identify and adapt to communication rules and cultural differences.	Unacquired: Ignores cultural differences. Preliminary: Identifies differences but fails to adapt. Proficient: Designs solutions that integrate cultural characteristics.
Dim 3: FTP Strategic Relevance (Corresponds to "National Identity & Global Vision")	Cognitive association between the teaching scenario and FTP strategic positioning.	Unacquired: No link to FTP. Preliminary: Mentions cooperation policies. Proficient: Elaborates on the supportive value of the scenario to the strategy.
Dim 4: Innovation in Problem Solving (Corresponds to "Social Responsibility & Practical Ability")	Ability to integrate multiple elements to design innovative solutions.	Unacquired: Relies on conventional schemes. Preliminary: Offers one innovative point. Proficient: Provides a complex solution integrating multiple factors.

#### 4. Empirical Study

##### 4.1. Participants and Methodology

###### 4.1.1. Participants

Two classes of Grade 2025 non-English major students from a university in Hainan were selected as research samples [11]. The Experimental Group (EG, n=56) followed the teaching path designed in this study, while the Control Group (CG, n=54) adhered to the traditional English teaching model, which primarily involved textbook lectures and general case exercises. At the beginning of the semester, there was no significant difference ( $P > 0.05$ ) between the two groups in the three-dimensional competence pre-test, ensuring comparability.

#### 4.1.2. Research Methodology

A mixed-methods research approach was adopted:

- Quantitative Research: Three-dimensional competence assessments were conducted at the beginning and end of the semester. Independent samples t-tests and Analysis of Variance (ANOVA) were performed using SPSS 26.0.
- Qualitative Research: Data were collected from student case analysis texts, simulated negotiation records, and in-depth interviews (10 students per group, 20 in total). Based on Grounded Theory, a three-level coding logic (open, axial, and selective coding) was applied. Two experts conducted double-blind coding, and the Kappa coefficient was used to verify coding consistency.

#### 4.1.3. Reliability and Validity of Research Tools

Reliability tests showed that Cronbach's alpha ( $\alpha$ ) for the FTP Cross-border Text Translation Test, the ASEAN Business Negotiation Simulation Rating Scale, and the Ideological-Political Literacy Questionnaire were 0.87, 0.85, and 0.83, respectively—all exceeding the  $\alpha \geq 0.7$  threshold, indicating high reliability. For validity, the Content Validity Index (CVI) was used. Three experts in English education and ideological-political education evaluated the items, yielding an average CVI of 0.89, which indicates effective coverage of measurement objectives. The Kappa coefficient for coding consistency was 0.82 ( $P < 0.01$ ), signifying substantial agreement.

#### 4.2. Research Procedure

A 16-week teaching practice was conducted centered on the core case: "Cross-border Fruit Procurement Contract between a Hainan Enterprise and a Malaysian Enterprise."

- Weeks 1--2 (Case Introduction): Presentation of the bilingual contract and lecturing on the background of cross-border trade.
- Weeks 3--4 (Three-Dimensional Tagging): Deconstructing the case points from the dimensions of language skills, cross-cultural cognition, and ideological-political literacy.
- Weeks 5--12 (Situational Tasks): Successive implementation of translation, simulated negotiation, and proposal writing tasks. AI collected learning data and provided customized resources.
- Weeks 13--16 (Assessment & Reflection): Evaluation of three-dimensional competencies through tests, text analysis, and interviews; students authored reflection reports.

Core Case Tagging Highlights: The language dimension included key terminology and grammar pitfalls; the cross-cultural dimension focused on cultural differences between China and Malaysia; the ideological dimension highlighted "friendly consultation," fair trade values, and the strategic significance of the trade partnership.

#### 4.3. Research Results

##### 4.3.1. Significant Enhancement in Language Skills

The experimental group's accuracy in terminology usage (89.7%) was significantly higher than that of the control group (72.3%), with  $t = 6.82$ ,  $P < 0.01$ . Fluency scores for cross-cultural translation in the experimental group (4.3/5) were also significantly higher than the control group (3.2/5),  $t = 5.94$ ,  $P < 0.01$ . This suggests that the FTP proprietary corpus and situational tasks effectively strengthened language application abilities.

##### 4.3.2. Marked Improvement in Cross-Cultural Cognition

The experimental group scored higher in "ASEAN Business Etiquette Adaptability" (4.2/5) than the control group (3.1/5),  $t = 4.76$ ,  $P < 0.05$ . Furthermore, 71.4% of students in the experimental group proactively identified cultural differences and proposed adaptive strategies during negotiations, compared to only 35.2% in the control group ( $\chi^2 = 18.36$ ,  $P < 0.01$ ).

#### 4.3.3. Deep Internalization of Ideological-Political Literacy

The Experimental Group's score on the "FTP Construction Identification" questionnaire (4.5/5) was significantly higher than the Control Group's (3.3/5),  $t = 7.21$ ,  $P < 0.01$ . Notably, 68.2% of students in the Experimental Group voluntarily mentioned concepts like "green trade" and "mutual benefit/win-win" in negotiation tasks, while only 23.1% of the Control Group did so ( $\chi^2 = 26.49$ ,  $P < 0.01$ ). Qualitative analysis revealed that students had integrated concepts such as "Community with a Shared Future for Mankind" and "Institutional Confidence" into actual problem-solving, completing the transition from "passive acceptance" to "active practice."

#### 4.3.4. Validity Verification

**Predictive Validity:** The co-occurrence rate of "cultural adaptation" and "policy integration" in the experimental group was positively correlated with their collaborative performance in campus public welfare activities ( $r = 0.63$ ,  $P < 0.01$ ). This indicates that the assessment model can effectively predict ideological and political behavioral tendencies in real-world settings [10, 12].

**Triangulation:** The core conclusions from quantitative data (test scores), qualitative data (text coding), and interview results were consistent, collectively confirming the effectiveness of the teaching path and ensuring the comprehensiveness and credibility of the research findings.

### 5. Discussion

#### 5.1. *The Logic of Core Integration: The Mechanism of Implicit Infiltration*

A key innovation of this study lies in transcending the "mechanical juxtaposition" of ideological-political elements and English teaching. Instead, it constructs an implicit integration logic of "Scenario-Carrier --- Task-Driven --- Value-Internalization" and introduces a "Human-Machine Synergetic Education" framework to delineate the functional boundaries between AI and teachers. Within this framework, AI is responsible for data monitoring and resource delivery based on authentic corpora, such as dynamically matching Free Trade Port policy texts and generating cross-cultural conflict cases for the precision delivery of explicit knowledge. Conversely, teachers focus on value guidance and emotional resonance. For instance, in the negotiation case regarding "Typhoon Loss-Sharing between Chinese and Thai Enterprises," teachers guide students to deliberate on the tension between "contractual spirit" and "cooperative inclusivity" in their English expressions. Through cultural analysis of contract clauses, teachers provide a deeper interpretation of the value of "openness and inclusiveness." It must be acknowledged, however, that AI still faces limitations in handling emotional complexity and value conflicts; thus, it cannot replace the teacher's subjective role in character and value formation. This model aligns with Hidden Curriculum Theory while facilitating the deep coupling of IP literacy, language skills, and cross-cultural cognition, ultimately achieving a balance between technical empowerment and humanistic guidance [13, 14].

#### 5.2. *The Value of AI Empowerment: From Experience-Driven to Data-Driven*

AI technology facilitates a significant pedagogical upgrade by shifting the teaching model from being experience-driven to data-driven across three key dimensions. Specifically, the development of a dynamic proprietary corpus addresses the scarcity of regional characteristic resources, providing a robust data foundation for personalized instruction. This is complemented by a three-dimensional competence tag library and dynamic matching algorithms, which enable a closed loop of "Precision Identification -- Intelligent Delivery -- Dynamic Adjustment," effectively breaking the "one-size-fits-all" bottleneck of traditional teaching. Furthermore, the implicit IP literacy assessment system utilizes Natural Language Processing (NLP) to capture students' value orientations within authentic tasks. By offering a new path for quantifying the effectiveness of curriculum-

based IP education, these technical advancements drive a fundamental transformation toward a data-driven pedagogical paradigm.

### *5.3. Practical Implications: Three Principles for Foreign Language Education Reform in the FTP*

The findings of this research offer critical practical implications, summarized through three core principles for foreign language education reform in the FTP. First, the principle of regional adaptability emphasizes utilizing IP and linguistic resources from FTP-specific materials to ensure that teaching aligns directly with regional development needs. Second, the principle of synergy advocates for constructing a three-dimensional "Language -- Cross-Culture -- Ideology" collaborative training system to avoid the limitations inherent in isolated skill development. Third, the principle of technicality involves leveraging AI for personalized teaching and precision assessment to enhance the scientific rigor and overall effectiveness of instruction. Collectively, this model serves as a vital reference for specialized universities seeking to align their foreign language education with regional strategic development and the evolving demands of the international market [11].

## **6. Conclusion and Outlook**

### *6.1. Conclusion*

In summary, this study addresses the strategic developmental needs of the Hainan Free Trade Port (FTP) by constructing a "Three-Dimensional Competence" training model. Supported by a robust theoretical framework comprising Constructivist Learning Theory, Cross-Cultural Adaptation Theory, Hidden Curriculum Theory, and Grounded Theory, the research developed a comprehensive AI-empowered teaching path that integrates corpus construction, situational tasks, and personalized feedback. The empirical results demonstrate that this approach effectively facilitates the implicit integration of ideological-political (IP) elements while significantly enhancing students' language application, cross-cultural communication, and IP literacy. Consequently, this study provides a highly viable and systematic solution for the cultivation of international talent within the context of the Hainan FTP.

### *6.2. Research Innovations*

The innovations of this research are primarily reflected in three interrelated areas. First, the study constructed a "Three-Dimensional Competence" model that effectively bridges theoretical depth with practical application value. Second, it successfully developed a dynamic, FTP-specific proprietary corpus and an AI-driven personalized teaching mechanism, providing a data-rich foundation for tailored instruction. Third, the research established a pioneering quantitative evaluation system for assessing implicit ideological-political literacy, offering a new methodological approach to measure the effectiveness of curriculum-based IP education through natural language processing.

### *6.3. Future Outlook*

Looking ahead, future research can be expanded in several key directions to further validate and refine these findings. One priority is to scale the existing corpus by incorporating diverse cases from countries along the "Belt and Road Initiative" (BRI), thereby enriching the global scope of cross-cultural teaching resources. Furthermore, technical efforts should focus on optimizing AI algorithms to improve the recognition accuracy of ideological elements, which will enhance the precision of personalized resource delivery. Finally, it is essential to conduct longitudinal studies over a two-to-three-year period to verify the long-term sustainability and stability of these teaching outcomes. Such efforts will ultimately contribute to a more universal theoretical framework and practical paradigm for foreign language curriculum-based reform in universities nationwide.

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