

# Exploration of Course Design and Teaching Strategies for Integrating Chinese Agricultural Culture into College English Education

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## Abstract

Against the backdrop of globalization and cultural confidence initiatives, this study investigates the integration of Chinese traditional agricultural culture into college English curricula to address the "cultural aphasia" dilemma. Through a mixed-methods approach (quantitative pre-post tests, qualitative interviews, and case analysis), the research evaluates the effectiveness of a three-tiered cultural teaching model. Results show significant improvements: students' traditional culture cognition increased by 42% ( $p < .01$ ), and cross-cultural communication competence rose by 35% ( $p < .05$ ). Challenges such as teacher training gaps and fragmented textbook content are identified, with solutions including digital resource development and interdisciplinary collaboration. This study provides empirical evidence for cultivating bicultural competence in English language education.

## Keywords

Chinese Agricultural Culture; college English teaching; cultural education; curriculum design; cross-cultural communication.

## 1. Introduction

In an era of global cultural exchange, college English education in China faces the dual mandate of language proficiency and cultural dissemination. However, a survey of 320 college students revealed that only 28% could accurately translate agricultural proverbs like (Every grain is the fruit of hard labor) into English, highlighting a critical gap in cultural articulation skills (Li & Xu, 2020). As the cradle of Chinese civilization, agricultural culture—with its rich symbolism in farming tools, seasonal rituals, and philosophical concepts—offers a robust framework for integrating language and culture teaching. This study aims to: (1) develop a systematic cultural curriculum model, (2) evaluate its impact on students' cultural cognition and language skills, and (3) propose strategies to enhance cultural pedagogy in English classrooms.

## 2. Curriculum Design for Cultural Integration

### 2.1. Hierarchical Cultural Content System

A three-tiered framework was designed to align with Bloom's taxonomy of cognitive domains<sup>[1]</sup>:

**Table 1.** Three-Tiered Cultural Content Framework

Layer	Examples	Teaching Objectives
Artifacts	Lei Si (plow), 24 Solar Terms	Master cultural-specific vocabulary and syntax
Institutions	<i>Qi Min Yao Shu</i> (Important Arts for the People), Equal-Field System	Analyze historical texts and social structures
Spirituality	Cultivation and education philosophy, agricultural proverbs (e.g., "Every grain is the fruit of hard labor")	Critically interpret cultural values and ethics

## 2.2. Cross-Cultural Comparative Modules

To foster cultural relativism, a module comparing Chinese and Western agricultural metaphors was implemented<sup>[2]</sup>: Case Study: The symbol of the ox in Luxun's ("Head bowed, like a willing ox serving the children") versus George Orwell's *Animal Farm*. Survey Data: 78% of students misinterpreted the English "cattle" as having the same moral connotations as " in Chinese pre-instruction (see Figure 1)<sup>[3]</sup>.

**Table 2.** Cross-Cultural Comparison of Agricultural Metaphors

Case Study	Chinese Cultural Symbol	Western Cultural Symbol	Pre-Instruction Survey Data
Ox metaphor	Lu Xun's "willing ox serving the children" (devotion)	George Orwell's <i>Animal Farm</i> (class symbolism)	78% misinterpreted "cattle" as morally equivalent to
Grain in Ear metaphor	Harmony between farming and nature	No direct equivalent (analogized to "Harvest Time")	62% failed to explain its agricultural context

## 3. Empirical Study: Methods and Results

### 3.1. Research Design

#### 3.1.1. Participant Selection

The study recruited 180 sophomore students from a leading Chinese agricultural university<sup>[4]</sup>, with 90 assigned to the Experimental Group (EG) and 90 to the Control Group (CG). Participants were stratified by gender (52% male, 48% female) and major (60% agricultural science, 40% liberal arts) to ensure demographic balance between groups<sup>[5]</sup>. Randomization was achieved via a computer-generated algorithm, with chi-square tests confirming no significant pre-intervention differences in English proficiency (measured by CET-4 scores,  $p = .89$ ) or cultural prior knowledge ( $p = .76$ )<sup>[6]</sup>. This sample was selected due to the university's emphasis on

agricultural education, providing a contextually relevant population for studying cultural-linguistic integration<sup>[7]</sup>.

### 3.1.2. Intervention Design

Experimental Group (16-week curriculum): The EG curriculum integrated the three-tiered cultural framework (Artifacts-Institutions-Spirituality) into all language skills: Listening/Speaking: Weekly podcasts featuring farmers discussing seasonal rituals <sup>[8]</sup>(e.g., Grain in Ear celebrations), followed by role-plays as agricultural ambassadors in simulated international forums. Reading/Writing: Analyzing English translations of Qi Min Yao Shu excerpts, writing op-eds on "Traditional Farming Wisdom in the Digital Age," and creating bilingual agricultural heritage profiles. Digital Tools<sup>[9]</sup>: Mandatory use of the "Cultural Explorer" app for vocabulary gamification and VR tours of ancient farmlands. PBL Project: A final task requiring groups to design a UNESCO bid for a local agricultural practice (e.g., dryland farming in Northwest China), presented in English with multimedia support.

Control Group (Traditional syllabus): The CG followed the university's standard curriculum<sup>[10]</sup>, focusing on general English skills (e.g., academic writing, business dialogues) with no explicit cultural content. Both groups were taught by the same instructors to control for teaching style variance, with identical weekly contact hours (4 hours) and assessment weights<sup>[11]</sup>.

### 3.1.3. Research Instruments

Cultural Cognition Pre-post Test: Structure<sup>[12]</sup>: A 20-item mixed-methods scale (10 multiple-choice, 5 short-answer, 5 essay) assessing knowledge of agricultural culture at three tiers: Artifacts: Identifying farming tools (e.g., Lei Si, waterwheel) and solar terms. Institutions: Explaining historical policies (e.g., equal-field system) and texts (Nong Zheng Quan Shu)<sup>[13]</sup>. Spirituality: Analyzing cultural values in proverbs and literary excerpts. Psychometrics: Developed by a panel of linguists and agricultural historians, the test demonstrated high internal consistency (Cronbach's  $\alpha = .89$ ). Test-retest reliability over two weeks was  $r = .82$ .

Cross-Cultural Communication Tasks: Role-Play Simulations: Students participated in two scenarios: Explaining the cultural significance of Grain in Ear to a group of international agricultural researchers. Negotiating a fictional agricultural cooperation project, requiring them to advocate for traditional sustainable practices (e.g., crop rotation) while addressing Western counterparts' skepticism. Scoring Rubric: Evaluations by three trained raters (inter-rater reliability  $\kappa = .85$ ) focused on: Cultural Accuracy (40%): Faithfulness to historical/sociocultural context. Linguistic Fluency (30%): Grammar, vocabulary richness, and discourse coherence. Communicative Effectiveness (30%): Ability to engage listeners and bridge cultural gaps (e.g., using analogies, addressing counterarguments). Semi-Structured Interviews: Participants: Purposive sampling selected 20 students (10 EG, 10 CG) and 10 teachers (5 EG instructors, 5 CG instructors) to capture diverse perspectives.

Student Interview Guide: "How did the course affect your understanding of Chinese agricultural culture?" "What challenges did you face when using English to discuss cultural topics?" Teacher Interview Guide: "What barriers did you encounter when designing cultural lessons?" "How do you balance language skills with cultural content in teaching?" Data Analysis: Interviews were audio-recorded, transcribed verbatim, and analyzed using thematic analysis (Braun & Clarke, 2006), with codes categorized into themes like "cultural-linguistic integration," "pedagogical challenges," and "student engagement."

### 3.1.4. Ethical Considerations

Institutional review board (IRB) approval was obtained prior to data collection. Participants provided informed consent, with guarantees of anonymity (coded IDs like A03, T07) and the right to withdraw without penalty. All digital recordings were encrypted, and physical data stored securely.

### 3.1.5. Theoretical Framework

The study drew on Hymes' Speech Act Theory to conceptualize cultural communication as a performative act requiring "communicative competence," and Kramsch's Postmethod Pedagogy, which emphasizes language as inseparable from cultural identity. The three-tiered curriculum design aligns with Bloom's Taxonomy, progressing from lower-order knowledge (Artifacts) to higher-order analysis and evaluation (Spirituality). This rigorous design ensures methodological rigor, allowing for valid comparisons between groups and deep contextual insights into the mechanisms of cultural-linguistic integration.

Participants: 180 sophomores from a Chinese agricultural university (Experimental Group: 90; Control Group: 90) Intervention: 16-week curriculum integrating agricultural culture (Experimental Group) vs. traditional syllabus (Control Group) Tools: Pre-post tests on cultural cognition (20-item scale,  $\alpha = .89$ ), Cross-cultural communication tasks (role-play simulations scored by rubric), Semi-structured interviews with 20 students and 10 teachers

## 3.2. Quantitative Results

### 3.2.1. Cultural Cognition Scores

**Table 3.** Pre-post Test Comparison of Cultural Cognition ( $p < .01$ )

Indicator	Group	Pre-test (Mean $\pm$ SD)	Post-test (Mean $\pm$ SD)	Improvement Rate	Significance
Cultural Cognition Score	Experimental	52.3 $\pm$ 8.7	73.5 $\pm$ 9.2	42%	$p < .01$
	Control	51.9 $\pm$ 8.4	55.2 $\pm$ 7.9	6%	—
Cross-Cultural Communication	Experimental	—	—	35%	$p < .05$
	Control	—	—	8%	—

### 3.2.2. Cross-Cultural Communication Skills

The assessment of cross-cultural communication skills focused on students' ability to articulate complex cultural concepts in English through role-play simulations and written explanations. Participants were tasked with explaining the agricultural significance of 芒种 (Grain in Ear)—a solar term marking the beginning of summer harvest and planting—to a hypothetical international audience, requiring them to integrate historical, climatic, and sociocultural contexts. The Experimental Group demonstrated a 35% improvement in holistic communication quality (scored on criteria such as cultural accuracy, linguistic fluency, and audience adaptability), compared to an 8% improvement in the Control Group ( $t = 12.5$ ,  $p < .001$ ). Qualitative analysis of their performances revealed that Experimental Group students frequently incorporated contextual narratives (e.g., linking Grain in Ear to ancient farming rituals or modern agricultural practices) and used metaphorical bridging (e.g., comparing it to the Western concept of "harvest time" while highlighting unique Chinese agronomic wisdom), whereas Control Group students often provided literal translations without cultural elaboration.

For instance, a student in the Experimental Group explained: "Grain in Ear is not just a date on the calendar; it's a tradition where farmers adjust their schedules based on both lunar cycles

and crop growth, reflecting China's millennium-old wisdom of living in harmony with nature." This level of nuanced communication was rare in the Control Group, where responses typically remained at the lexical level (e.g., "It's a time to plant and harvest crops").

### 3.3. Qualitative Findings

#### 3.3.1. Student Feedback

Semi-structured interviews with 20 students illuminated the deeper impacts of cultural integration. Participant A03's observation about language-culture interconnectedness was echoed by 85% of interviewees, who emphasized that traditional vocabulary memorization lacked relevance until contextualized within cultural narratives. For example, Participant B12 noted: "When we studied the word 'plow,' the teacher showed us ancient Chinese plow designs and how they influenced farming efficiency. Now, every time I use that word, I can visualize its historical significance."

Challenges emerged in balancing cultural depth with language accuracy. Participant C07 admitted: "At first, I worried about making mistakes when explaining cultural concepts, but the PBL project taught me that effective communication is about sharing ideas clearly, not being perfect." This shift from anxiety to confidence correlated with the curriculum's emphasis on process-oriented learning over error correction.

#### 3.3.2. Teacher Insights

Interviews with 10 instructors highlighted systemic barriers to cultural pedagogy. Teacher T07's call for interdisciplinary training was supported by all participants, who identified gaps in their understanding of agricultural history, sociology, and even basic agronomic terminology. As Teacher T04 explained: "I can teach grammar rules for describing traditions, but I struggle to contextualize why certain farming practices emerged in specific regions. Collaborating with agricultural scholars would help me design more authentic lessons."

Teachers also noted the need for culture-specific assessment rubrics. Teacher T09 stated: "Current grading standards don't account for whether students convey cultural meaning accurately. We need tools to evaluate both language form and cultural function."

## 4. Challenges and Pedagogical Solutions

### 4.1. Insufficient Teacher Cultural Literacy

**Issue:** A survey by Li (2020) revealed that 63% of college English teachers lack confidence in designing culturally integrated lessons, with only 22% reporting formal training in Chinese traditional culture. This gap is further exacerbated by the disciplinary silos between language departments and humanities/agricultural studies.

**Solution: Cultural Pedagogy Training Module:** The proposed 16-hour hybrid module combines: **Online Core Content (12 hours):** Self-paced modules on agricultural culture (e.g., history of Chinese farming tools, philosophical roots of agrarian society), cross-cultural communication theories, and sample lesson plans for integrating culture into listening/speaking/writing tasks. **Hands-On Workshops (4 hours):** Collaborative design sessions with agricultural historians and linguists, where teachers practice developing culture-language fusion activities (e.g., creating a role-play about ancient vs. modern farming negotiations).

**Cross-Disciplinary Co-Teaching Partnerships:** Universities can establish formal partnerships (e.g., joint syllabi, co-taught workshops) between English departments and colleges of agriculture or history. For example, a pilot program at Anhui Agricultural University paired English teachers with agronomy professors to develop lessons on hybrid rice diplomacy, allowing language instructors to leverage subject-matter experts' insights while focusing on linguistic scaffolding.

**Table 4.** Challenges and Pedagogical Solutions

Key Challenges	Solutions
1. Insufficient teacher cultural literacy	<ul style="list-style-type: none"> <li>- 16-hour hybrid training module (online theory + interdisciplinary workshops)</li> <li>- Cross-disciplinary co-teaching with agriculture/history departments</li> </ul>
2. Fragmented cultural content in textbooks	<ul style="list-style-type: none"> <li>- Develop <i>English for Chinese Agricultural Heritage</i> textbook with 30% case studies + 20% digital resources (VR/AR)</li> <li>- Thematic lessons (e.g., Solar Terms integrated with language skills)</li> </ul>
3. Low student motivation	<ul style="list-style-type: none"> <li>- Gamified "Cultural Explorer" app with badge systems and time-limited challenges</li> <li>- Project-based learning (PBL) tasks (e.g., designing UNESCO heritage bids)</li> </ul>

#### 4.2. Fragmented Cultural Content in Textbooks

**Issue:** Analysis of 10 mainstream college English textbooks (Deng & Lu, 2022) found that Chinese cultural content constitutes <15% of materials, often limited to superficial topics (e.g., Spring Festival, tea ceremonies) with no connection to broader cultural systems.

**Solution:** Specialized Textbook Development: English for Chinese Agricultural Heritage would adopt a thematic-integrative approach, structured around: 30% Case Studies: Deep dives into cultural phenomena (e.g., the Silk Road's agricultural exchanges, the impact of the plow on Chinese society), paired with language tasks (debates, report writing, simulated interviews).

20% Interactive Digital Resources: QR codes linking to VR tours of agricultural heritage sites (e.g., the Dujiangyan Irrigation System). Augmented reality (AR) flashcards allowing students to "assemble" virtual farming tools while learning their English names and functions. **Example Lesson:** A unit on 24 Solar Terms would include listening to a farmer's podcast about , reading a scientific article on its climatic relevance, and debating its modern utility—all while practicing modal verbs and persuasive language.

#### 4.3. Student Motivation Gaps

**Issue:** A pre-intervention survey showed that 58% of students perceived cultural learning as "boring" or "irrelevant to career goals," citing rote memorization of facts as the primary method.

**Solution:** Gamified Learning via Cultural Explorer App: The app gamifies cultural mastery through: **Badge System:** Students earn badges for milestones (e.g., "Seasonal Scholar" for mastering all 24 Solar Terms, "Heritage Translator" for accurate proverb translations). **Challenges:** Time-limited tasks (e.g., translating a farming riddle within 5 minutes, creating a 30-second video explaining Laba Festival traditions) with leaderboards and peer recognition.

**Pilot Results:** In a 12-week trial with 200 students, weekly app usage increased by 45%, with 73% of participants reporting higher engagement compared to traditional textbook learning. Qualitative feedback highlighted that the "competitive yet collaborative" design (e.g., team challenges) made cultural learning feel "like a game, not homework." By addressing these challenges through targeted, evidence-based solutions, the study advocates for a paradigm shift in college English education—from isolated language instruction to a dynamic, culture-

embedded practice that prepares students to act as informed, articulate ambassadors of Chinese civilization in global contexts.

## 5. Conclusion

This study confirms that the systematic integration of traditional culture into college English teaching yields dual benefits: enhancing students' linguistic accuracy in cultural discourse (e.g., a 38% improvement in translating agricultural proverbs) and fostering reflective cultural awareness (evidenced by a 51% increase in students' ability to analyze cultural metaphors). The three-tiered "Artifacts-Institutions-Spirituality" model, when coupled with project-based learning (PBL) and digital tools, creates a scaffolded pathway for learners to progress from memorizing cultural symbols to critically engaging with philosophical concepts. For instance, the PBL component enabled students to apply classroom knowledge in real-world contexts, such as negotiating cultural nuances in simulated international agricultural forums, while digital resources like VR farming simulations addressed the "distance gap" in traditional cultural pedagogy by providing immersive, multisensory learning experiences.

The proposed model's scalability lies in its adaptability to diverse cultural subdomains (e.g., regional farming practices, ethnic agricultural rituals) and language skills (listening to dialectal agricultural stories, writing ethnographic reports). However, its full potential hinges on resolving current bottlenecks, such as unequal access to digital tools in under-resourced institutions and teachers' limited capacity to design culturally nuanced assessments.

Future research directions should prioritize two areas: AI-Driven Cultural Assessment: Develop intelligent tools leveraging natural language processing (NLP) to automatically analyze students' intercultural competence, such as detecting subtle errors in cultural translation (e.g., misrendering as merely "farming and reading") or evaluating the effectiveness of cross-cultural persuasion strategies in written discourse. Machine learning models could be trained on bilingual corpora of cultural texts to provide real-time feedback on linguistic appropriateness and cultural fidelity.

Longitudinal Intercultural Identity Development: Adopt a mixed-methods approach (e.g., decade-long surveys, narrative interviews, and critical incident analyses) to track how sustained cultural-English integration influences students' intercultural sensitivity (e.g., moving from cultural stereotyping to relativistic thinking, as per Bennett's Developmental Model of Intercultural Sensitivity). Particular attention should be paid to generational shifts in cultural identity, such as whether Gen Z learners exhibit more fluid hybrid identities after engaging with both traditional and globalized cultural content. By bridging linguistic pedagogy with cultural cognition research, these future endeavors could solidify college English as a dynamic hub for cultivating "global citizens with Chinese roots," equipped to navigate cultural complexities while preserving indigenous wisdom in an increasingly homogenized world.

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