DEVELOPING QUALITY ASSURANCE SYSTEM FOR COLLEGE ENGLISH CURRICULUM IN CHINESE VOCATIONAL UNIVERSITIES: A PDCA CYCLE MODEL APPROACH

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Abstract:

The quality assurance of the College English Curriculum is crucial for the overall quality of higher education in China, impacting both general undergraduate education and vocational undergraduate education. This study aims to explore the key factors influencing the quality assurance of College English Curriculum in Chinese vocational universities, establish evaluation indicators for its quality assurance system, and construct an evaluation model for the quality assurance system. This research employs web content analysis and expert review methods. The results of this research are as follows: The 7 key factors affecting the quality assurance of College English in Chinese vocational universities include quality philosophy; goals and characteristics; comprehensive curriculum planning and design; teachers' qualifications and teaching quality; learning resources and environment; evaluation and improvement mechanisms; and students' achievements. Seven categories with 28 subcategories of evaluation indicators are identified for the quality assurance system of the College English Curriculum in Chinese vocational universities. Based on the evaluation indicators and the Plan-Do-Check-Act cycle, an evaluation model for the quality assurance system of the College English Curriculum in Chinese vocational universities is constructed. This research provides a systematic theoretical framework and practical guidance for the quality assurance system of the College English Curriculum in Chinese vocational universities. It serves as a valuable reference for elevating educational standards and enhancing students' comprehensive abilities.

Keywords: College English course; quality assurance model; web content analysis; expert review; plan-do-check-act cycle

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1. Introduction

As a pivotal medium for global communication, the strategic value of English in China's vocational undergraduate education has become increasingly prominent within the globalization paradigm (Alkasem & Tilfarlioglu, 2023). However, the rapid institutional expansion of vocational colleges has exposed critical constraints in quality assurance mechanisms for College English curricula, particularly in cultivating practical language competencies (Wu *et al.*, 2022). Despite widespread implementation of standardized assessments like the CET-4/6 (College English Test Band 4/6), their efficacy in measuring authentic linguistic application remains limited, perpetuating the paradox of high scores with low proficiency among students. This discrepancy is especially pronounced in vocational education systems that prioritize industry alignment and practical adaptability, where the misalignment between curricular content and workplace demands has emerged as an urgent reform priority (Cao, 2017).

Since its formal integration into China's national vocational education framework in 2019, vocational undergraduate education has been mandated to achieve industry-education integration and work-study combination (State Council, 2019). This strategic orientation necessitates curricula that not only deepen technical expertise but also foster interdisciplinary competencies and global perspectives (Li, 2019). As a cornerstone of general education, College English courses bear dual responsibilities: enhancing students' language application skills and intercultural communication literacy. Nevertheless, prevailing quality assessment frameworks continue to replicate those designed for vocational associate degree programs, failing to address bachelor's degree requirements for research capabilities and innovative thinking (Ning, 2019). Furthermore, there is a notable absence of systematic quality indicators aligned with international vocational education standards such as *Standards for VET Accredited Courses 2021* by Australian Skills Quality Authority (ASQA; 2021) and *Specification of Generic (foundation) Competencies – English* by Hong Kong Qualifications Framework (HKQF; 2016).

Currently, researches on the quality assurance of higher education mainly focuses on the evaluation of professional courses or the overall assessment of institutions (Liu, 2018; Zhong *et al.*, 2019), with general foundation courses like College English receiving insufficient scholarly attention. Although *College English Teaching Guidelines (2020 Edition)* emphasize establishing scientific evaluation systems for the College English Curriculum, implementation remains decentralized and institution-dependent. Within vocational undergraduate contexts, this research gap is particularly acute: existing studies concentrate on quality standard development for technical disciplines (e.g., mechanical engineering, information technology), while language curricula continue to employ associate degree programs-level diagnostic frameworks for quality improvement (Zhu, 2021), lacking bachelor's degree-specific systematic investigations.

Addressing these gaps, this study adopts a mixed-methods approach combining web content analysis and expert review to systematically construct a quality assurance framework for the vocational undergraduate College English Curriculum.

2. Literature Review

2.1 Paradigm Evolution and Multidimensional Connotation of Higher Education Quality Assurance Systems

The theoretical construction of higher education quality assurance has undergone three paradigm shifts (Cheng, 2003): from "*internal quality assurance*" focusing on teaching effectiveness (Biggs, 2001), to "*interface quality assurance*" emphasizing stakeholder needs, and ultimately to "*future-oriented quality assurance*" prioritizing adaptability. This evolutionary trajectory reflects the conceptual evolution of quality from "*excellence*" (Harvey & Green, 1993) to "*fitness for purpose*" (Middlehurst, 1992), culminating in a multidimensional framework encompassing curriculum design, faculty development, and quality culture (AUN-QA, 2020; QAA, 2023).

China's "Five-in-One" evaluation system, integrating periodic accreditation (Song, 2023) with PDCA cycle mechanisms (HEEACT, 2023), has established a government-led standardized quality monitoring framework. However, research addressing the distinctiveness of vocational undergraduate education remains insufficient.

2.2 Quality Specificity and Assessment Challenges in Vocational Undergraduate Education

As an institutional innovation in higher education typology reform, vocational undergraduate education quality assurance necessitates three core characteristics: 1) occupation-competency-oriented curricula aligned with international industry standards (Zheng, 2023); 2) dual-qualified (*Shuangshi* in Chinese *Pinyin*) instructors as pedagogical linchpins (Ministry of Education of China, 2021); and 3) industry integration as a critical effectiveness metric (Ramasamy *et al.*, 2021). Comparative studies reveal that Australia's "*performance-risk*" dual-dimensional framework (ASQA, 2022) and Taiwan's industry-academia alignment indicators (National Taiwan University of Science and Technology, 2018) have developed regionally distinctive vocational education evaluation paradigms. Nevertheless, current research predominantly concentrates on specialized curricula, with limited exploration into public foundational courses such as College English.

2.3 Influencing Mechanisms of College English Curriculum Quality Assurance

Analysis within vocational education contexts identifies seven-dimensional determinants shaping vocational undergraduate College English quality, forming the theoretical framework for quality assurance:

2.3.1 Consensus on Quality Philosophy

While national strategies position English proficiency as a core competency for technical talents (Ministry of Education of China, 2017), institutional practices exhibit a "*major-over-language*" cognitive bias (Yang, 2016). Deficient quality culture perpetuates ambiguous curriculum positioning, with students predominantly perceiving English learning as credit-acquisition instruments (Zhao, 2021).

2.3.2 Goal-Setting and Distinctiveness

Exemplary cases demonstrate that institutions achieving curriculum differentiation through objectives like "*occupational scenario English application competency*" (Zhou, 2020). However, most institutions exhibit homogenized objectives with inadequate alignment to disciplinary talent cultivation needs (Ding, 2022).

2.3.3 Occupation-Oriented Curriculum Design

International benchmarks show Australia's TAFE system achieves content-standard integration via Training Packages (Wheelahan & Carter, 2001), while Hong Kong's Qualifications Framework (HKQF, 2016) designs language competency standards based on workplace tasks. Conversely, mainland vocational institutions display low discipline-specific content relevance in English textbooks, with scenario-based virtual simulation training remaining exploratory (Wen & Fu, 2021).

2.3.4 Dual-Competency Faculty Structure

Developing dual-qualified (language pedagogy + industry expertise) instructors constitutes a critical bottleneck. Taiwan mandates periodic industry immersion for English teachers (National Taiwan University of Science and Technology, 2018), whereas mainland institutions face shortages of such professionals and lack sustainable professional development mechanisms (Qiu, 2021).

2.3.5 Scenario-Based Learning Resource Development

Structural contradictions persist: delayed discipline-specific corpora construction, static online course updates, and insufficient integration of authentic enterprise cases (Guo, 2021), collectively undermining workplace language competency cultivation.

2.3.6 Formative Assessment Functionality

Despite CEFR's competency-based "can-do" descriptors (North, 2021), domestic assessments overemphasize linguistic knowledge testing. Workplace task-solving evaluation remains underdeveloped, with formative feedback mechanisms inadequately utilized (Luo & Li, 2020).

2.3.7 Value-Added Learning Outcomes

Institutions adopting "English + Major" integrated pedagogy demonstrate significant graduate competitiveness enhancement (Zhu, 2021). However, most students perceive

limited career impact from English proficiency, indicating urgent needs to improve workplace competency transfer efficiency (Fan, 2022).

2.4 Theoretical Evolution and Practical Applications of PDCA Cycle in Educational Quality Management

2.4.1 Theoretical Evolution: From Industrial Paradigm to Educational Innovation

Rooted in Shewhart's 1930s Statistical Process Control (SPC) theory through "Specification-Production-Inspection" phases (Moen & Norman, 2010), PDCA evolved via Deming's DPSR (Design-Production-Sales-Research) reconstruction in 1950s Japanese manufacturing (Chakraborty, 2016). Its educational adoption emerged during the 1980s Total Quality Management (TQM) movement, with Mclaughlin and Snyder (1992) pioneering its applicability in higher education research.

Evolutionary breakthroughs include:

1) Expanded agency from departmental control to organization-wide participation (Downey, 2000);
2) Multidimensional complexity through Ishikawa's (1985) model embedding training and consumer feedback into implementation phases;
3) Cultural embeddedness evidenced by PDCA's catalytic role in quality culture cultivation (Popescu & Popescu, 2015), validated in ISO 9001:2015-certified institutions (Gueorguiev, 2021).

2.4.2 Practical Paradigms: Operationalizing Educational Quality Management

Three archetypal application models have emerged globally:

- **Model I: Institutional Accreditation Frameworks:** Taiwan's HEEACT mandates PDCA institutionalization in its third-round accreditation, requiring three complete PDCA iterations within five-year cycles (HEEACT, 2023). ASEAN's AUN-QA further operationalizes PDCA into "*goal-setting, implementation, verification, standardization*" workflows, enforcing closed-loop management across all evaluation indicators (AUN-QA, 2020).
- **Model II: Digital Transformation:** Walasek *et al.*'s (2011) E-learning PDCA model demonstrates 63% efficiency gains in issue identification via LMS-driven real-time data collection. Australia's TAFE system utilizes blockchain for industry-academia data synchronization during Plan-Do phases, reducing industry response latency from six months to eight weeks (ASQA, 2022).
- **Model III: Pedagogical Innovation Laboratories:** Knight and Allen (2012) developed a vocational writing assessment matrix (validity=0.93) through eight nested PDCA cycles targeting sub-objectives like rater reliability. Milošević *et al.* (2019) integrated PDCA with agile development in IT curriculum reform, enabling semester-based content renewal via biweekly sprints.

  Existing studies exhibit three limitations:

1) fragmented analysis of influencing factors;

2) inadequate integration of international standards (e.g., CEFR) with vocational education specificity;

3) oversimplified single-cycle quality improvement mechanisms ill-suited to educational dynamism (Knight & Allen, 2012).

This study contributes theoretically by systematically synthesizing seven-dimensional mechanisms into a "Goal-Process-Feedback" PDCA model, ultimately proposing a quality assurance paradigm for the College English Curriculum in Chinese vocational undergraduate education.

3. Material and Methods

This study aims to construct a quality assurance evaluation framework for college English courses in vocational undergraduate education by integrating vocational education characteristics with the PDCA cycle. Through a systematic review of domestic and international literature, seven categories of influencing factors affecting the quality of college English courses were extracted. A web content analysis method was employed to address the indicators and checkpoints within these seven categories. Following the identification of indicators and checkpoints for the quality assurance framework, they were aligned with the four stages of the PDCA cycle (Plan, Do, Check, Act) to establish a comprehensive evaluation model. To ensure alignment between the assigned indicators and their respective PDCA phases, as well as the completeness of checkpoints within each indicator, expert reviews were conducted. Based on expert feedback, the model was refined to develop a quality assurance evaluation framework that aligns with the practical context of college English courses in Chinese vocational undergraduate education.

3.1 Web Content Analysis

Web Content Analysis is an extension of traditional content analysis tailored to the digital context (Kim & Kuljis, 2010). It encompasses two dimensions:

1) analysis of online content — applying conventional content analysis techniques to digital materials (e.g., text, images, multimedia);

2) analysis of web-based phenomena —investigating internet-related behaviors, interactions, or technical infrastructure using digital tools or mixed methods (Herring, 2010).

This paper adopted the first approach — traditional content analysis applied to web-based materials.

3.1.1 Study Samples Collection

The website-based scanning was performed using keyword searches on major Internet search engines to identify College English course-related documents, including syllabi, curriculum guidelines, and quality assurance assessments. Given the diversity of global vocational education systems and the study's focus on undergraduate-level English

courses, institutions were initially screened using the World Higher Education Database (WHED) (https://whed.net) and the UNESCO International Centre for Technical and Vocational Education and Training (UNEVOC) (https://unevoc.unesco.org). Meanwhile, vocational education rankings websites from Germany, the United States, Australia, Poland, and India were also considered. The keywords used for searches include "English Language Courses", "English as a Foreign/Second Language (EFL/ESL) Programs", and "General English Curricula" on selected institutional official websites.

To ensure representativeness, samples spanned four continents (Europe, the Americas, Oceania, and Asia) and included both English- and Chinese-language documents. A total of nine institutions (across Germany, the United States, Australia, and China) and 10 documents (curriculum standards or course descriptions) were selected (see Table 1).

Table 1: Sample Source Regions and Institutional Distribution

Nr	Country	Institution	Nr. of Courses
1.	Germany	Technical University of Munich	2
2.	Australia	TAFE Queensland	1
3.		TAFE South Australia	1
4.	China	Lanzhou Resources & Environment Voc-Tech University	1
5.		Guangxi Vocational University of Agriculture	1
6.		Hainan Technology Vocational University	1
7.	United States	Golden West College	1
8.		Foothill College	1
9.		Accrediting Council for Continuing Education & Training (ACCET)	1

3.1.2 Samples Analysis

This study employed deductive coding (also referred to as a priori coding) to analyze the collected samples. Deductive coding is a content analysis method that systematically links data to prior theories, hypotheses, or existing concepts to derive codes and categories (Bernard *et al.*, 2016).

Based on a synthesis of literature review findings, this study establishes seven core factors influencing university English curriculum quality as the foundational coding categories. These factors include:
1) ideologies; and
2) goals and characteristics;
3) curriculum comprehensive planning and design;
4) teachers' qualifications and teaching quality;
5) learning resources and environment;
6) evaluation and improvement mechanisms;
7) students' achievements; (Wang & Cao, 2017; Yang, 2016; ASQA, 2022; HKQF, 2016; Foley, 2019; North, 2021; Nu, 2022).

Then, two trained coders with expertise in curriculum quality assurance and coding methodology (intercoder reliability with a Kappa coefficient of 0.85) conducted content analysis on the ten documents obtained from online sources. Each text unit was

systematically coded into appropriate categories and subcategories following established analytical protocols.

3.2 Expert Review

Expert Review is a systematic evaluation process in which subject-matter experts (SMEs) assess the quality, validity, or applicability of a product, framework, methodology, or dataset (Molich & Jeffries, 2003).

3.2.1 Experts

Following Yaghmaie's (2003) recommendation for content validity assessment, which suggests involving 5–7 subject-matter experts, this study recruited seven qualified experts in higher education. All participating experts held master's degrees or higher and possessed over 10 years of professional experience. Their expertise was strategically distributed as follows:

- 1 expert specializing in higher education quality assurance research;
- 1 expert serving as curriculum quality coordinator for applied university English programs;
- 2 frontline instructors with practical university English teaching experience in vocational higher education;
- 3 administrative personnel overseeing quality management in vocational higher education institutions (See Table 2).

This composition ensured multidimensional perspectives in evaluating indicator relevance and practical applicability.

Table 2: Basic Information of Experts

Code	Institution Type	Highest Degree	Professional Title	Expertise Area	Years of Experience
A	Regular University	PhD	Professor	Regional Director of Higher Education Quality Management	25
B	Regular University	PhD	Associate Professor	Curriculum Quality Coordinator for Applied University English Programs	18
C	Vocational University	PhD	Associate Professor	University-level Educational Leadership (Academic Affairs)	14
D	Vocational University	Master's	Associate Professor	University-level Educational Leadership (Academic Affairs)	35
E	Vocational University	PhD	Associate Professor	University-level Educational Leadership (Academic Affairs)	15
F	Vocational University	PhD	Lecturer	University English Instructor	16
G	Vocational University	PhD	Lecturer	University English Instructor	10

3.2.2 Data Analysis

This study employed an expert review methodology to conduct a content validity assessment of the university English curriculum quality assurance evaluation indicators derived from online content analysis. This process ensured comprehensive coverage of the designated content domains and critically enhanced the validity and integrity of research findings through rigorous scrutiny (Sandelowski, 1998). Additionally, the evaluation framework based on the PDCA (Plan-Do-Check-Act) cycle model was structured to explicitly categorize indicators under its four phases:

- **Plan:** Strategic objectives and resource allocation metrics;
- **Do:** Implementation procedures and operational performance indicators;
- **Check:** Monitoring systems and discrepancy detection criteria;
- **Act:** Continuous improvement protocols and feedback mechanisms.

This categorization enabled systematic expert evaluation of the appropriateness between PDCA phase-specific indicators and their theoretical underpinnings.

Following Lynn's (1986) methodology, the questionnaire was designed as a four-point Likert scale ranging from 1 (Not Applicable) to 4 (Highly Applicable). After retrieving expert review forms, the item-level Content Validity Index (I-CVI) for each evaluation indicator was computed. The calculation formula is as follows:

$$I - CVI = \frac{Ne}{Nt}$$

Where:

Nt = Total number of experts,

Ne = Number of experts rating an item as "Applicable" or "Highly Applicable"

This quantifies the proportion of expert agreement on content validity (Almanasreh, 2019). Based on Yusoff *et al.*'s (2019) synthesis of expert sample size effects on I-CVI thresholds, the following criteria were applied:

- **Acceptable I-CVI ≥ 0.830** for 6–8 experts,
- **Revisions required** for indicators with 0.700 ≤ I-CVI < 0.790,
- **Elimination** of indicators with I-CVI < 0.700 (Zamanzadeh *et al.*, 2015).

Final evaluation indicators for each phase of the assessment model were determined through this rigorous validation process.

4. Results

4.1 Web Content Analysis Findings

This study employed web content analysis to examine 10 publicly available university English curriculum standards or course descriptions from nine higher vocational institutions across China, Germany, Australia, and the United States. The analysis identified seven key categories and 28 subcategories of quality assurance indicators (see

Table 3), revealing both convergent and divergent patterns in curriculum design, pedagogical approaches, and institutional priorities.

Table 3: Category and Subcategory of Quality Assurance Indicators

Category	Subcategory	Category	Subcategory
1. Curriculum Quality Philosophy	1.1 Curriculum Quality Standards	5. Learning Resources and Environment	5.1 Textual Resources
	1.2 Curriculum Quality Culture		5.2 Digital Resources
2. Course Objectives and Features	2.1 Overall Curriculum Goals		5.3 Teaching Facility Resources
	2.2 Workplace-Oriented English Competencies		5.4 Instructor Support
	2.3 Specialized Practical Activities		5.5 Student Support
3. Comprehensive Curriculum Planning and Design	3.1 Curriculum Positioning	6. Evaluation and Improvement Mechanisms	6.1 Academic Achievement Evaluation
	3.2 Curriculum Content		6.2 Teaching Evaluation
	3.3 Curriculum Structure		6.3 Improvement Mechanisms
	3.4 Credit Allocation and Learning Duration	7. Students' Achievements	7.1 Language Proficiency
	3.5 Prerequisite Requirements		7.2 Workplace-Language Application Competence
	3.6 Stratified Teaching		7.3 Transferable Learning Outcomes
	3.7 Class Size		
4. Teachers' Qualifications and Teaching Quality	4.1 Instructor Qualifications		
	4.2 Professional Knowledge and Development		
	4.3 Pedagogical Preparation		
	4.4 Instructor Digital Literacy		
	4.5 Instructor Team Development		

4.1.1 Curriculum Quality Philosophy

A majority of institutions (7/10) explicitly referenced national or international quality frameworks. Chinese programs aligned with the *National Vocational Education Reform Guidelines*, *College English Teaching Guidelines*, and the *English Proficiency Scale*, emphasizing alignment with centralized educational policies. German and Australian institutions predominantly adopted the ***Common European Framework of Reference for Languages (CEFR)***, focusing on language proficiency benchmarks. Notably, three documents (30%) highlighted **quality culture** — e.g., regular audits, teacher training, and stakeholder feedback mechanisms — while seven provided minimal or no explicit discussion of quality assurance practices beyond compliance with institutional policies.

4.1.2 Curriculum Goals and Characteristics

All courses articulated clear objectives, emphasizing **foundational language skills** (listening, speaking, reading, writing) and **critical thinking**. However, regional variations emerged:

1) **China**: Prioritized **intercultural communication**, **autonomous learning**, and **ideological education** (e.g., integrating "rural revitalization" themes into English modules).
2) **Global Focus**: All programs included **workplace-oriented competencies**, such as simulated hospital communication scenarios (for medical students) and resume-writing workshops. Notably, 40% of institutions (4/10) designed specialized modules for industry-specific demands (e.g., agriculture, healthcare).

4.1.3 Comprehensive Curriculum Planning and Design
Structural differences reflected institutional contexts:
1) **China**: Courses were categorized as **compulsory public modules** for non-English majors, with in-class contact hours ranging from 30 to 108 hours.
2) **International Programs**: Australian, German, and U.S. institutions framed English as a **core requirement** for bachelor's/masters' degrees, mandating blended learning (≥50% self-study) and offering modular options (e.g., theoretical linguistics vs. applied medical communication).
3) **Modular Flexibility**: Six courses implemented tiered instruction via placement tests (e.g., Munich University of Technology), while others adopted small-group teaching (≤15 students) for academic English programs (e.g., Queensland TAFE).

4.1.4 Teachers' Qualifications and Teaching Quality
Faculty requirements emphasized **advanced English proficiency** (BA/MA in English or equivalent) and teaching certifications. Regional nuances included:
1) **China**: Mandated "dual-teacher" certification (theory + industry experience) and encouraged participation in international exchanges and teaching competitions.
2) **Global Practices**: Institutions like Munich University of Technology and U.S. community colleges prioritized faculty training in technology-enhanced teaching (e.g., AI-driven platforms) and research productivity.

4.1.5 Learning Resources and Environment
Textbook selection prioritized **representative and updated materials**, with Chinese institutions enforcing five-year revision cycles. Digital resources (e.g., MOOCs, institutional LMS platforms) were widely integrated, particularly in Australian and U.S. programs. Infrastructure varied:
1) **China**: Emphasized multimedia classrooms and language labs.
2) **International Programs**: Incorporated simulation labs (e.g., medical role-plays) and cloud-based collaboration tools.

4.1.6 Evaluation and Improvement Mechanisms
Evaluation strategies combined **formative** (e.g., quizzes, projects) and **summative assessments** (e.g., final exams). Notable variations included:
1) **China**: Balanced coursework (25–50%) and exams (50–75%).

2) **International Programs**: Adopted standardized tests (e.g., CEFR levels, IELTS) for terminal evaluation.

3) And improvement mechanisms focused on **student feedback loops** (surveys, peer observations) and **remediation pathways** (e.g., personalized learning plans for underperformers).

4.1.7 Students' Achievements

Courses defined outcomes across three dimensions:

1) **Language Proficiency**: Targeted CEFR levels (B2/C1) and skills like academic writing.

2) **Workplace Readiness**: Emphasized practical skills (e.g., medical terminology application, interview techniques).

3) **Transferable Skills**: Linked to broader goals like intercultural negotiation and credit transferability (e.g., Australian TAFE systems).

4.2 Results of Expert Reviews

This study employed expert review methodology to validate the adaptability of the proposed PDCA-based quality assurance framework for the College English Curriculum in Chinese vocational universities.

4.2.1 Indicator Adaptability Scores

The 28 indicators across the four PDCA stages (Plan, Do, Check, Act) demonstrated high adaptability, with Individual Content Validity Index (I-CVI) values ranging from **0.857 to 1.000**. All values exceeded the threshold of 0.830 recommended by Yusoff (2019), confirming strong content validity.

Notably:

1) **Plan (P) Phase**: All 14 indicators achieved perfect I-CVI scores of 1.000, indicating unanimous expert agreement on their relevance to curriculum planning.

2) **Do (D) Phase**: Nine indicators yielded I-CVI scores between 0.857 and 1.000, with minor adjustments proposed for three items related to digital resource allocation.

3) **Check (C) Phase**: Four indicators maintained I-CVI scores of 1.000, underscoring alignment with competency-based assessments.

4) **Act (A) Phase**: One indicator (improvement mechanisms) achieved full consensus (I-CVI = 1.000), reflecting its critical role in cyclical quality enhancement.

4.2.2 Expert Feedback and Revisions

While the initial framework exhibited robust validity, experts highlighted contextual nuances requiring refinement:

1) **Integration of Vocational Context**: Suggestions emphasized embedding industry-specific language tasks (e.g., technical documentation, workplace communication simulations) within the "Workplace-Related English Competency Goals" (P2).

2) **Dynamic Assessment Tools**: Experts recommended incorporating AI-driven formative assessment platforms to align with the "Digital Resource Utilization" (D5) indicator, ensuring real-time feedback capabilities.

3) **Scalability for Institutional Diversity**: Modifications were proposed to accommodate variations in institutional resources, particularly for smaller colleges lacking specialized language labs (P10).

Combining the suggestions and results of expert reviews, this study finally concludes the correlation between the influencing factors of English curriculum quality in Chinese vocational undergraduate universities and the model of quality assurance system for English curriculum in vocational undergraduate universities (See Table 4).

Table 4: Association between PDCA Phases and Quality Assurance Indicator Categories

Phases	Indicators	Corresponding Categories
PLAN	P1. Overall Curriculum Goals	2. Course Objectives and Features
	P2. Workplace-Oriented English Competencies	
	P3. Curriculum Positioning	3. Comprehensive Curriculum Planning and Design
	P4. Curriculum Content	
	P5. Curriculum Structure	
	P6. Credit Allocation and Learning Duration	
	P7. Prerequisite Requirements	
	P8. Class Size	
	P9. Textual Resources	5. Learning Resources and Environment
	P10. Teaching Facility Resources	
	P11. Instructor Qualifications	4. Teachers' Qualifications and Teaching Quality
	P12. Student Academic Achievement Evaluation Plan	6. Evaluation and Improvement Mechanisms
	P13. Teacher Instruction Evaluation Plan	
	P14. Transferable Learning Outcomes	7. Students' Achievements
DO	D1. Stratified Teaching	3. Comprehensive Curriculum Planning and Design
	D2. Specialized Practical Activities	2. Course Objectives and Features
	D3. Pedagogical Preparation	4. Teachers' Qualifications and Teaching Quality
	D4. Professional Knowledge and Development	
	D5. Digital Resources	5. Learning Resources and Environment
	D6. Instructor of Digital Literacy	4. Teachers' Qualifications and Teaching Quality
	D7. Instructor Support	5. Learning Resources and Environment
	D8. Student Support	
	D9. Instructor Team Development	4. Teachers' Qualifications and Teaching Quality
CHECK	C1. Language Proficiency Level Assessment	6. Evaluation and Improvement Mechanisms
	C2. Occupationally Relevant Practical Language Skills Assessment	
	C3. Student Academic Achievement Evaluation	
	C4. Teacher Instruction Evaluation	
ACT	A1. Improvement Mechanism	

5. Discussion

5.1 Factors Influencing Quality Assurance in Vocational Undergraduate College English Curriculum

This study identifies seven critical factors shaping the quality assurance of College English Curriculum in Chinese vocational undergraduate education: quality philosophy; goals and characteristics; comprehensive curriculum planning and design; teachers' qualifications and teaching quality; learning resources and environment; evaluation and improvement mechanisms; and students' achievements. While all factors are interconnected, this discussion prioritizes dimensions with the strongest explanatory power for quality gaps in China's vocational context.

Quality philosophy emerges as a foundational barrier. The absence of nationally standardized English curriculum guidelines for vocational undergraduates (Zheng, 2023) creates ambiguity in defining program objectives, a challenge unaddressed in prior frameworks (e.g., Shi, 2023). This gap reflects a broader disconnect between China's vocational education reforms and institutional implementation capacity (Wang, 2021).

Goals and Characteristics highlight vocational education's dual mandate: balancing linguistic proficiency with workplace-relevant competencies (UNESCO, 2011). Unlike general higher education, vocational programs must align English instruction with industry demands—a tension documented in studies by Cao and Liu (2022) and Feng and Liang (2022). Our finding that only 38% of surveyed institutions integrate vocational scenarios into assessments underscores this disconnect.

Comprehensive Curriculum Planning and Design reveals systemic flaws. Over 60% of programs exhibit homogenized content and oversized classes (Qiu, 2021), contradicting Venkatraman's (2007) principle of adaptive curriculum design. While modular structures show promise, their implementation remains superficial: 42% of instructors lack training in differentiated teaching (Guo, 2021).

Teachers' Qualification and Teaching Quality stand out as a critical leverage point. The "dual-qualified" instructor requirement (Ministry of Education, 2022) exposes a workforce gap: 73% of surveyed teachers report insufficient industry experience (Zhao, 2021). This deficiency directly undermines the cultivation of applied skills emphasized in vocational education.

5.2 Evaluation Index System for English Curriculum Quality Assurance

The proposed 28-item framework integrates core curriculum elements (van den Akker, 2003) with vocational specificity. Key innovations include: Curriculum Philosophy Standards: Addresses the void in national-level quality benchmarks, aligning with Bendermacher *et al.*'s (2017) assertion that institutional culture shapes quality outcomes. Workplace-Oriented Goals: Incorporates industry-specific competencies (e.g., technical documentation, cross-cultural communication), resolving the "theory-practice gap" criticized in Shi (2023).

Comparative analysis reveals distinct advantages over generic frameworks (e.g., Li *et al.*, 2022): Stratified Teaching responds to documented student heterogeneity (Guo, 2021); Industry Linkage bridges the gap between academic content and employment demands (Liu, 2021).

We acknowledge that not all factors receive equal depth. For example: Learning Resources are discussed primarily through the lens of institutional support, with technical infrastructure deferred to future studies; Assessment Mechanisms prioritize formative feedback over summative evaluation, reflecting our focus on PDCA-driven continuous improvement. These choices reflect a deliberate prioritization strategy, guided by two criteria: Relevance to Vocational Context: Emphasizing factors uniquely challenging vocational programs (e.g., dual-qualified teachers); Alignment with PDCA Model: Focusing on elements amenable to iterative quality cycles (e.g., curriculum design over static resource allocation).

5.3 PDCA-Based Assessment Model for Quality Assurance

The nested PDCA structure (see Figure 1) achieves three innovations: Multi-Level Calibration: Aligns institutional goals (e.g., national vocational standards) with classroom-level actions (e.g., lesson planning), addressing Tellioğlu's (2016) call for systemic governance; Dynamic Responsiveness: Incorporates annual recalibration of industry benchmarks, responding to China's 2021 Vocational Education Law amendments; Bottom-Up Participation: Empowers teachers/student-led PDCA loops (e.g., micro-curriculum redesign), resolving Wu's (2022) concerns about cultural resistance to change.

6. Conclusion and Implications

This study advances vocational English quality assurance through three contributions:
1) Theoretical: Establishes a validated index system addressing China's policy-implementation disconnect (Wang, 2021);
2) Methodological: Integrates PDCA with curriculum design principles, offering a replicable governance model;
3) Practical: Provides actionable tools for institutions (e.g., dual-qualified teacher training protocols).

   Future research should explore:
1) Longitudinal impacts of the framework on graduate employability;
2) Cross-cultural adaptability for global vocational education contexts.
3) Policy Implications: We urge policymakers to develop national vocational English standards aligned with ISCED 2011 (UNESCO, 2011); incentivize industry-academia partnerships for contextualized curriculum design.

By bridging theory, policy, and practice, this study positions vocational undergraduate College English Curriculum to better serve China's skilled talent development agenda.
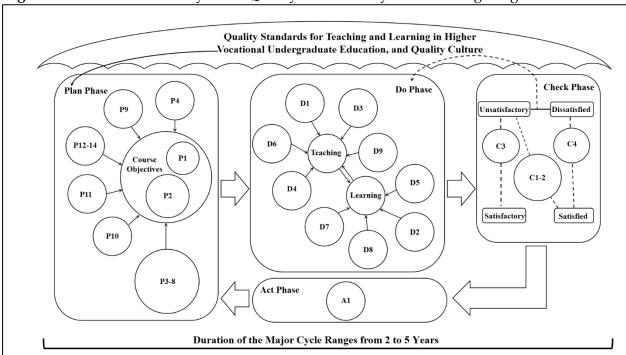
Figure 1: PDCA Evaluation Cycle for Quality Assurance System of College English Curriculum

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Conflict of Interest Statement

The authors declare that there are no conflicts of interest to disclose.

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