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# Production-Oriented Approach (POA) and Knowledge Graph (KG) in Dual-Drive Model: Construction and Application Research in International Business English Teaching

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## Abstract

Against the backdrop of economic globalization, International Business English education faces significant challenges, including fragmented knowledge structures, limited skill transferability, and delayed assessment feedback. To address these issues, this paper proposes an innovative "Production-Oriented Approach (POA) × Knowledge Graph (KG)" dual-drive teaching model. By systematically organizing the International Business English curriculum and constructing a visual knowledge graph, the model establishes a comprehensive knowledge architecture that supports structured learning. The teaching practice implements a task-driven pedagogical flow across three core phases: pre-class preparation with personalized content distribution, in-class implementation featuring authentic business scenarios, and post-class review with adaptive exercises. A teaching case demonstrating business proposal writing for an intelligent robotic vacuum cleaner illustrates how the framework effectively integrates language proficiency, business knowledge, and intercultural communicative competence. Practical results confirm the model's effectiveness in stimulating learning engagement, facilitating knowledge internalization, and enabling data-driven personalized instruction. Future development will focus on optimizing knowledge graph construction, diversifying task design, accelerating feedback mechanisms, and enhancing teacher training programs. This innovative approach demonstrates strong potential for cultivating global business talents equipped to meet evolving industry demands through the seamless integration of a pedagogical framework and technological innovation.

## Keywords

International Business English Teaching; Production-Oriented Approach (POA); Knowledge Graph (KG); Teaching Model Innovation; Dual-Drive Model

## 1. Introduction

Against the dual backdrop of the deepening development of economic globalization and profound digital technological transformation, international business activities have become increasingly frequent, creating an urgent demand for composite global business talents possessing solid language skills, systematic business knowledge, and effective cross-cultural communication abilities. As the core link in cultivating such talents, the innovation and

efficacy enhancement of International Business English teaching are crucial. However, traditional teaching modes for International Business English have exposed numerous limitations when confronted with the talent development requirements of the new era. Wang and Cui (2020) emphasize that Business English teaching should strive to achieve the "three-dimensional integration of language ability, business knowledge, and cross-cultural literacy." Yet, in actual teaching practice, knowledge modules are often fragmented, and there is a disconnect between theoretical instruction and practical application, leading to difficulties for students in integrating knowledge and hindering the cultivation of comprehensive application skills. Simultaneously, delays in teaching evaluation and feedback further impede the timely transformation and enhancement of student competencies. These systemic contradictions constrain the improvement of teaching quality and affect the alignment between talent cultivation and market needs.

To effectively address these challenges, this paper explores and proposes an innovative teaching model: the "Production-Oriented Approach (POA) × Knowledge Graph (KG)" dual-drive model. This model aims to use the theoretical framework of the Production-Oriented Approach (POA) to drive the teaching process, emphasizing the use of output tasks to guide input learning, thereby stimulating students' learning motivation and sense of purpose. Concurrently, leveraging the technical advantages of Knowledge Graphs (KG), it systematically organizes and visually presents the knowledge system of the International Business English curriculum, constructing a structured and interconnected knowledge network for students to support effective knowledge integration and meaning construction. Through the synergistic drive of POA's activity design and KG's knowledge system support, this model permeates the entire teaching process—including pre-class preparation, classroom implementation, knowledge construction, evaluation and feedback, and post-class extension. It strives to resolve core pain points such as knowledge fragmentation, sluggish ability transformation, and delayed feedback, thereby systematically enhancing students' language application skills, business professional capabilities, and intercultural communicative competence.

## 2. Theoretical Background and Problem Analysis

As a crucial carrier of key competencies in the process of global economic integration, the teaching effectiveness of International Business English directly impacts the quality of cultivating talents engaged in foreign-related business. As digital technology becomes increasingly integrated, the disconnect between traditional teaching models and the demands of cultivating language service professionals for the new era has become more apparent. However, traditional teaching practices are plagued by systemic issues such as fragmented knowledge modules, impeded skill transfer, and delayed evaluation and feedback, which severely constrain the professional development efficacy of learners.

### 2.1 The Three-Dimensional Disconnection in Knowledge Structure

International Business English teaching faces the problem of the disconnection among "linguistic knowledge, business skills, and intercultural communicative competence." This issue manifests in teaching practice through the following aspects:

First, language training remains mechanical—overemphasizing vocabulary and grammar through rigid lectures while neglecting communicative competence development (Chen, 2021). Second, business knowledge appears fragmented, presented as isolated concepts without real-world integration. For instance, trade terms are taught as definitions rather than interconnected components of business processes. Third, cultural learning stays superficial, with activities like role-playing lacking depth in exploring business logic and cultural connotations, hindering the development of critical cultural awareness. This compartmentalization underscores the need for a "language services turn" to bridge classroom learning and workplace demands (Wang, 2024).

Furthermore, cultural cognition remains superficial. While teaching activities emphasize interactive forms, they often lack the depth to guide students' cognitive engagement (Liu & Zhang, 2019). For instance, oral training often stops at role-playing and dialogue imitation. Without well-designed tasks that prompt exploration of underlying business logic and cultural nuances, students merely reproduce language mechanically. This approach fails to foster the critical cultural awareness essential for navigating authentic cross-cultural business encounters.

### 2.2 The Theory-Practice Gap in Skill Development

Studies indicate a significant gap between Business English graduates' acquired skills and workplace demands (Guo,

2022; Chen, 2025; Liu, Wang, & Zhang, 2025), revealing a disconnect between classroom performance and practical application. This manifests in three key areas:

Firstly, business writing demonstrates mechanical template application. While students master document formats in class, they lack contextual understanding to adapt them. For instance, reports may follow the correct structure but show deficient data analysis and conclusion derivation. Secondly, cross-cultural communication reveals poor strategy selection. Despite theoretical knowledge, students struggle to adjust communication approaches across cultures, potentially causing negotiation breakdowns. Finally, responses to unexpected business scenarios remain underdeveloped. Preset classroom exercises fail to prepare students for real-world emergencies like customer complaints, where they typically cannot rapidly synthesize language and business knowledge to protect organizational interests.

These findings reveal a systemic gap between acquired classroom knowledge and workplace application, ultimately compromising both student performance in authentic business contexts and the pedagogical effectiveness of Business English programs. To address this disconnect, instruction must prioritize developing transferable competencies. Implementing case-based learning, simulated scenarios, and internship opportunities can effectively bridge this gap, enabling students to transform theoretical knowledge into core professional capabilities.

### 2.3 Deficiencies in the Assessment and Feedback Mechanism

The current Business English assessment systems exhibit two critical limitations. Firstly, evaluation criteria remain narrowly focused on written tests, overemphasizing linguistic knowledge while neglecting practical application, innovation, and collaboration (Li, 2024). Secondly, feedback cycles are excessively prolonged, preventing the timely identification of learning gaps and denying students crucial improvement opportunities. This delay also impedes instructors' ability to adjust teaching strategies, ultimately creating a disconnect between instruction and learning needs that undermines educational effectiveness.

## 3. POA × KG Dual-Drive Model: Framework and Implementation

Given the disconnection among "language knowledge, business skills, and intercultural communicative competence" in International Business English teaching, coupled with the theory-practice gap in student performance, traditional pedagogy reveals systemic limitations in knowledge integration, skill transfer, and feedback mechanisms.

To address this challenge, the integration of the "Production-Oriented Approach (POA)" and constructing a Knowledge Graph (KG) for International Business English holds significant importance. The POA, driven by output tasks, guides students to acquire knowledge and enhance competencies through completing authentic tasks. This approach helps break down the silos among language, business, and cultural knowledge, fostering the organic integration and flexible application of learning. Furthermore, the construction of a Knowledge Graph enables the systematic integration of teaching content, visually representing the interconnections between knowledge points. This provides students with a comprehensive and structured knowledge system, supporting their ability to rapidly retrieve information and make decisions in real business scenarios. This synergistic combination creates an innovative dual-drive model that enhances teaching effectiveness and develops students' comprehensive competencies for the new era.

The "Production-Oriented Approach (POA) × Knowledge Graph (KG)" dual-drive model represents an innovative teaching framework within International Business English education. It aims to maximize teaching effectiveness and enhance students' comprehensive abilities through the synergistic interaction between POA and KG.

### 3.1 Knowledge Graph Construction

The Knowledge Graph construction process plays a pivotal role in International Business English curriculum reform by enabling the effective organization of complex knowledge structures. The construction involves three key phases:

(1) Knowledge Systematization: Conduct systematic curriculum analysis to identify core knowledge points and their logical relationships (casual, parallel, hierarchical).

(2) Framework Design: Establish main thematic nodes with corresponding sub-nodes, creating structured connections based on identified relationships.

(3) Visualization Implementation: Implement the graph structure using specialized visualization tools to create an interactive knowledge representation.

### 3.2 The POA × KG Dual-Drive Model: Framework and Implementation

The effective integration of the Knowledge Graph (KG) throughout the three core phases of the Production-Oriented Approach (POA)—Driving, Enabling, and Assessing—forms the foundation of this dual-drive model. Serving as both a dynamic scaffold and a central knowledge repository, the KG systematically supports each stage of the teaching-learning process. It evolves from providing motivation and direction in the Driving phase, to offering structured learning support in the Enabling phase, and finally serving as an evaluation framework in the Assessing phase, ensuring a coherent educational cycle.

In the Driving phase, instructors create authentic business tasks such as drafting proposals or analyzing customer feedback that mirror real workplace scenarios. Using a "Business Proposal Writing" task as an illustration, students explore client needs across industries before preparing proposals. This complex task requires mastering proposal structure, professional language, and effective writing strategies. The KG immediately provides a structured knowledge framework, enabling students to identify essential knowledge nodes like "proposal structure" and "persuasive language" from the task's inception. This transforms abstract learning objectives into targeted knowledge application, establishing a clear purpose and direction for the learning process.

In the Enabling phase, instructors provide targeted scaffolding for task completion, with the Knowledge Graph serving as an integrated knowledge architecture. When applied to business proposal writing, the KG visually demonstrates interconnected knowledge nodes—including linguistic styles, persuasive techniques, and evidence presentation strategies—enabling students to recognize conceptual relationships and develop a comprehensive understanding. Through structured activities like cross-industry case analyses and group discussions, students examine diverse proposal requirements while refining their cross-cultural communication and business writing competencies, effectively bridging theoretical knowledge and practical application.

During the Assessing phase, instructors evaluate both final products and learning processes. Assessment criteria expand beyond linguistic and business knowledge to include innovative thinking and collaborative abilities. In proposal writing, evaluation specifically examines discussion performance, strategic decision-making, language application, and teamwork effectiveness.

The assessing phase incorporates self-assessment and peer evaluation to develop students' metacognitive awareness and collaborative learning abilities. More importantly, assessment data drives the continuous optimization of the Knowledge Graph, creating a closed feedback loop that maintains alignment between knowledge resources and learning objectives. When evaluation reveals knowledge gaps affecting task performance, instructors can promptly enhance corresponding nodes and relationships within the graph.

The POA × KG dual-drive model fundamentally transforms International Business English instruction from traditional knowledge transmission to a student-centered, output-oriented paradigm. This innovative approach simultaneously develops language proficiency, business expertise, and cross-cultural competencies, enabling students to effectively integrate and apply these skills in authentic professional contexts while establishing a solid foundation for their career advancement.

## 4. Case Study: Business Proposal Writing Teaching Practice

This section provides a detailed demonstration of the "Production-Oriented Approach (POA) × Knowledge Graph (KG)" dual-drive teaching model, using the instructional content of writing a business proposal for an intelligent robotic vacuum cleaner as a specific case study.

### 4.1 Teaching Objectives Design

1) Enhance Language Proficiency: Students will draft comprehensive business proposals using accurate Business English, including clear descriptions of product performance, market feedback, and improvement recommendations.
2) Deepen Business Knowledge: Students will master business proposal structure, persuasive language techniques, and methods for presenting factual information, applying this knowledge effectively in their writing.
3) Cultivate Intercultural Communicative Competence: Students will analyze diverse cultural preferences regarding product design and functionality, incorporating culturally adaptive strategies appropriate for global market promotion.

### 4.2 Multimodal Teaching Resources

This task integrates four resource types within the Knowledge Graph: product documentation (manuals, technical specs, market reports); authentic customer feedback (surveys, reviews, service records); Business English writing guides; and cross-cultural marketing cases. These interconnected materials support comprehensive learning by providing product knowledge, market insights, writing conventions, and cultural perspectives.

### 4.3 Instructional Process Implementation

During the pre-class phase, the instructor uses the Knowledge Graph integrated with the learning platform to connect relevant knowledge points with teaching materials. Based on student proficiency levels, personalized pre-class materials are distributed. Simultaneously, the Knowledge Graph enables precise analysis of students' learning status across multiple dimensions, informing data-driven teaching strategies and ensuring well-prepared instruction.

In the driving phase, the instructor establishes an authentic business scenario where students analyze customer feedback for an intelligent robotic vacuum cleaner that has been on the market for one year. Students receive genuine customer comments covering cleaning effectiveness, noise levels, and aesthetic design, along with specific proposal format requirements and evaluation criteria. This realistic context immediately engages students' interest while providing clear direction for their subsequent work.

In the enabling phase, through the Knowledge Graph, students access a visually organized knowledge system containing product terminology, market analysis frameworks, and cross-cultural marketing principles. Small groups then analyze customer feedback to identify key improvement areas, such as addressing poor pet hair collection through enhanced brush design or improved filtration systems. The instructor facilitates this process by guiding discussion and providing timely support, helping students connect theoretical knowledge with practical application while developing their analytical and problem-solving capabilities.

In the assessment phase, the evaluation process incorporates both peer assessment and instructor evaluation. Students examine each other's proposals based on comprehensive criteria, including content coherence, language accuracy, business feasibility, and cultural appropriateness. The instructor then conducts a summative assessment with particular emphasis on business insight quality and cross-cultural adaptation, beyond mere linguistic correctness. Crucially, assessment results directly inform Knowledge Graph optimization, enabling continuous refinement of teaching content based on identified student learning gaps, thus creating an effective feedback loop for ongoing instructional improvement.

During the post-class review phase, the instructor provides personalized exercises and materials through the Knowledge Graph based on individual student progress. For example, students struggling with technical concepts receive relevant explanatory articles, while those interested in market analysis get case studies. Simultaneously, the system analyzes errors in student submissions to identify knowledge gaps, enabling data-driven instructional adjustments that enhance teaching precision and effectiveness

## 5. Conclusion and Reflection

The "Production-Oriented Approach (POA) × Knowledge Graph (KG)" dual-drive model demonstrates significant advantages in International Business English teaching. It stimulates learning interest through authentic business tasks like proposal writing, enhances comprehensive competencies by integrating language, business, and cross-cultural skills, and facilitates knowledge internalization via visual knowledge mapping and collaborative activities.

Moreover, the model provides substantial support for personalized teaching throughout the learning process: customized pre-class materials, targeted in-class guidance, and tailored post-class exercises. The KG system analyzes learning patterns to identify knowledge gaps and provide data-driven instructional support.

However, there remains room for improvement in this teaching model. The Knowledge Graph's construction needs more precise delineation of logical relationships between knowledge points to ensure its accuracy and completeness. Enhanced interactive features would facilitate student access and information retrieval. Task design should expand, diversifying learning experiences and developing broader business competencies.

The evaluation system requires more immediate feedback mechanisms, potentially through digital platforms enabling real-time performance analysis. Concurrently, instructors need sustained professional development in both POA implementation and KG applications, which institutions can support through specialized training programs

and collaborative workshops.

In conclusion, the "Production-Oriented Approach (POA) × Knowledge Graph (KG)" dual-drive teaching model presents substantial advantages and promising applications in International Business English education. Through ongoing refinement of knowledge graph architecture, diversification of pedagogical tasks, and optimization of feedback mechanisms, this innovative approach demonstrates strong potential for developing the comprehensive competencies required for global business environments. With continued implementation and improvement, the model will effectively bridge the gap between academic instruction and professional practice, ultimately producing business talents equipped to navigate the complex demands of international commerce.

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