

Article

Research on the Construction of the English Teaching Ecosystem in Vocational Undergraduate Colleges

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Abstract: Based on the theory of ecological linguistics, this study takes nursing students as the research object and analyzes the contradiction between their English learning needs and the current teaching situation through a questionnaire survey. The research finds that there are multiple disconnections between students and the existing teaching system in terms of learning goals, content preferences, teaching methods, and career orientation. Therefore, this study constructs an English teaching ecosystem model centered on the "dynamic expansion of students' ecological niches", promoting the coordinated development of all elements within the system by integrating teaching content, innovating teaching methods, optimizing the evaluation system, and strengthening environmental support. This model aims to enhance the adaptability and effectiveness of teaching and provide theoretical references and practical paths for the reform of English teaching in vocational undergraduate education.

Keywords: vocational education; English teaching; ecosystem; ecological niche; teaching reform; demand analysis; ecolinguistics

1. Introduction

In January 2019, the State Council issued the "Implementation Plan for National Vocational Education Reform," which for the first time introduced pilot programs for undergraduate-level vocational education, marking the formal establishment of China's vocational undergraduate education policy. This policy rapidly elevated vocational undergraduate education to the forefront of attention for both educational institutions and society. Breaking through the constraints of the junior college level and establishing a complete academic degree gradient is an inevitable choice to adapt to the high-quality development of the economy and society and the upgrading of the vocational education system. It presents a new challenge posed by changes in external demands such as technology, industry, and economy to the internal self-adaptation of the entire education system [1]. However, at the practical level, the development of vocational undergraduate education faces numerous challenges, particularly the mismatch in talent structure, low level of industry-education integration, and the existing curriculum failing to meet social needs, leading to weak social adaptability of talents, especially in foreign language disciplines, which exhibit significant "breakpoint" characteristics [2].

The "Breakpoint" theory, originating from American systems scientist George Land, reveals the critical threshold that a system undergoes when transitioning from a relatively stable state to a more complex and adaptive state in the process of growth, change, and transformation [3]. Currently, vocational undergraduate English teaching is in such a "breakpoint" period: on one hand, the demand for English proficiency from society and individual students has shifted from the basic "passing exams" to possessing "comprehensive literacy" in cross-cultural communication, professional field application, and lifelong learning; on the other hand, the traditional teacher-centered, knowledge-

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imparting teaching model still dominates, leading to a disconnect between teaching supply and demand.

"Adaptation," originally an ecological term, refers to the state in which an organism adjusts its structure and function to achieve mutual coordination and dynamic balance with its environment [4]. Viewing education as an ecosystem has become an important paradigm for studying complex educational issues. Ecological linguistics regards language learning and teaching as a complex, dynamic ecosystem, emphasizing the interactions and interdependence among various elements within the system (such as teachers, students, environment, and language itself) [5]. Therefore, to bridge the "breakpoint" in vocational undergraduate English teaching and achieve successful system transformation and adaptive development, examining and constructing from an ecological perspective is a viable path.

Based on this, this study, starting from an ecological perspective and taking the English learning needs of vocational undergraduate students (exemplified by 24th-level nursing undergraduate students) as the logical starting point, attempts to diagnose the ecological limitations of traditional English teaching models, explore and construct a dynamic, harmonious, and highly adaptive vocational undergraduate English teaching ecosystem model, aiming to effectively address the teaching "breakpoint" and provide strong support for cultivating high-quality skilled foreign language talents with international perspectives.

2. Research Hypotheses

2.1. Origins and Core Principles of Ecolinguistics

As an independent academic discipline, the concept was initially proposed by American linguist Einar Haugen in 1972. He defined "language ecology" as "the study of the interaction between any given language and its environment" [6]. Here, the "environment" refers to both the social and cultural environment as well as the psychological environment of the individuals who use the language. Haugen compared language to biological species and society to the natural environment, thus pioneering the examination of language issues from an ecological perspective.

Since then, scholars such as William F. Mackey and Peter Mühlhäusler have further deepened research in this field. Mühlhäusler particularly emphasized the diversity, interdependence, and adaptability of languages to their environments, arguing that the health of a language, like that of a biological species, depends on the balance of its ecosystem [7]. His ecological propositions can be summarized as wholeness, dynamics, interaction, and contextuality [8], and he opposed viewing language as an isolated, static symbol system. Instead, he stressed the need to place it within a complex ecological network and focus on the entire process of language life and development.

2.2. Educational Ecology and the Educational Ecosystem Model

The application of ecological principles to educational research posits that the education system functions as an open system engaged in material, energy, and information exchange with its internal and external environments. Within this system, various factors (such as teachers, students, curriculum, and management) are interconnected and mutually constraining [9]. Feinstein previously observed that the classroom constitutes a "micro-ecosystem," where its equilibrium directly influences teaching effectiveness [10].

In China, Gu Yueguo developed a macro-perspective model of online educational ecology, providing an analytical framework for foreign language teaching in information technology environments [11]. From a micro-perspective, Chen Jianlin examined the ideal ecological environment formed through the organic integration of computer networks and foreign language classrooms, emphasizing the transformative and reconstructive impact of technology as a new ecological factor on traditional teaching ecosystems [12].

These studies have established a crucial theoretical foundation for constructing foreign language teaching ecosystems.

2.3. Composition and "Discontinuity" Characteristics of the Foreign Language Teaching Ecosystem

In the field of foreign language education, a healthy teaching ecosystem typically comprises three core ecological communities: the student community, the teacher community, and the teaching environment community (including teaching objectives, content, methods, resources, and physical/virtual environments) [13]. These communities maintain the dynamic equilibrium of the system through intricate energy flows and information exchanges. From an ecological perspective, the "discontinuities" in vocational undergraduate English teaching arise from the impeded flow of energy and information within the system and between the system and its environment. This is specifically manifested as:

2.3.1. Niche Ambiguity and Displacement

The niche of students remains undefined, specifically in terms of their designated position and functional role within the educational system. Vocational undergraduate students generally exhibit a weak foundation in English proficiency, yet their learning objectives are predominantly utilitarian, primarily focused on passing examinations to secure graduation certificates. Consequently, a significant disparity exists between their actual competency niche, societal expectations, and the niche delineated by the curriculum design [14].

2.3.2. Key Limiting Factors

In the field of ecology, the Limiting Factor constitutes a pivotal environmental element that constrains biological growth. Within the context of vocational undergraduate English education, students' initial motivation, self-confidence, learning methodologies, as well as the singular instructional approaches and evaluation systems, may all emerge as limiting factors that impede systemic development [15].

2.3.3. Flowerpot Effect as a Critical Constraint

The "pot-bound effect" refers to the phenomenon where an ecosystem thrives within an artificially created, confined, and comfortable environment but becomes highly vulnerable when exposed to the natural environment. Traditional classrooms function similarly to "flowerpots," cultivating students who lack the "resilience" and "adaptability" required to effectively utilize English in real-world professional settings [16].

2.3.4. Systemic Structural Imbalance

Excessive teacher dominance, lack of student agency, prioritization of knowledge transmission over competence cultivation, and insufficient integration between virtual learning environments and physical classroom settings are all contributing factors to the rigidity of the system structure, rendering it inadequate to adapt to external changes [17]. Building upon the aforementioned theoretical framework, this study will conduct an in-depth exploration and analysis of the current state and issues within the vocational undergraduate English teaching ecosystem, subsequently proposing a systematic reconstruction strategy that is both theoretically grounded and highly practical.

3. Research Design

3.1. Research Questions

This study aims to address the following three research questions:

1. What are the primary contradictions between the English learning needs of vocational undergraduate students (exemplified by nursing major transfer students) and the current supply of the teaching ecosystem?
2. How to construct an English teaching ecosystem model that effectively meets student needs and promotes the synergistic development of various ecological factors within the system?
3. What is the effectiveness of this model? What are the feasible construction pathways in practical implementation?

3.2. Research Subjects

This study focuses on nursing undergraduate students enrolled in the 2024 academic year at a vocational undergraduate institution in Hainan Province. This cohort exhibits typical characteristics of vocational undergraduate students, namely possessing associate degrees and foundational professional knowledge, with clear academic advancement goals, yet demonstrating varying levels of English proficiency and complex learning motivations. The investigation distributed 352 online questionnaires, with 346 valid responses collected, yielding an effective response rate of 98.3%.

3.3. Research Methodology

This study adopts a mixed research method, with quantitative research as the main approach and qualitative analysis as a supplement. Firstly, a self-designed "English Learning Needs Survey Questionnaire for 24th Grade Nursing (Junior College to Bachelor's Degree) Students" was used. The questionnaire is divided into two parts. The first part covers several questions such as students' basic information, current English proficiency, examination performance, learning expectations, and graduation plans. The second part delves into students' learning purposes, time investment, classroom preferences, content interests, views on teaching methods, and specific difficulties and needs. The questionnaire collects data through a combination of multiple-choice questions and open-ended questions.

3.4. Research Process

The research was conducted during the mid-term of the Fall 2024 semester. With the consent of the students, electronic questionnaires were uniformly distributed during class intervals. Upon completion of data collection, the information was systematically organized, coded, and subjected to statistical analysis. Drawing upon prior literature review and theoretical frameworks, the data were interpreted and subsequently utilized as a reference for constructing a model of the teaching ecosystem.

4. Empirical Analysis and Model Construction

4.1. Analysis of Students' English Learning Demands and Ecological Dilemmas

Through the systematic organization and analysis of questionnaire data, the research has identified the following critical issues within the current teaching ecosystem:

4.1.1. The Disconnection between Learning Goals and System Goals

As shown in Table 1, the data reveals that regarding "academic expectations for English learning this semester," a significant 54.91% of students selected "passing the final exam." Concerning "pre-graduation academic expectations," 43.06% of students chose "obtaining the graduation certificate." In the context of "primary objective of learning English," the most prevalent responses were "graduating smoothly" (54.05%) and "preparing for future work" (39.31%), while "individual interest" accounted for only 6.65%.

Table 1. learning Objective Categories Data.

Learning Objective Categories	Option	Count	Proportion
Semester goals	Pass the final exam	190	54.91%
Graduation goals	Obtain the graduation certificate	149	43.06%
The primary objective of learning English	Graduate smoothly	187	54.05%
	Prepare for future work	136	39.31%
	Individual interest	23	6.65%

These data indicate that students' learning motivation exhibits a pronounced extrinsic and instrumental orientation. The majority of students regard English primarily as a tool to pass exams, acquire diplomas, or improve employment prospects, effectively narrowing their self-perception to that of "test-takers" and "job seekers." This perspective demonstrates a clear misalignment with the overarching objectives of vocational undergraduate education, which aim to cultivate highly qualified technical and skilled professionals equipped with cross-cultural communication abilities, critical thinking skills, and lifelong learning literacy. Under such extrinsically driven motivations, the "energy flow" within the teaching system-comprising teachers' instructional efforts, course resources, and allocated learning time-is concentrated largely on fostering test-taking abilities. Consequently, less emphasis is placed on developing students' practical language application, professional communication competence, and humanistic literacy. As a result, the actual outcomes produced by the educational system diverge from its intended comprehensive educational goals.

4.1.2. Mismatch between Students' Learning Content Preferences and Curriculum Emphasis

As shown in Table 2, the data reveal that within the category of "favorite classroom activity," "case analysis and presentation by the team" (35.83%) and "critically analyzing the underlying implications embedded in the text" (29.19%) are the most prominent preferences. Regarding "curriculum content of primary interest to students," "spoken English teaching practice" (41.04%) demonstrates the highest level of student demand, whereas "writing" (12.72%) and "translation" (15.32%) attract considerably lower levels of interest.

Table 2. Content Preference Type Data.

Content Preference Type	Option	Count	Proportion
Favorite Classroom Activity	Case analysis and presentation by the team	124	35.83%
	Critically analyze the underlying implications embedded in the text	101	29.19%
	Spoken English teaching Practice	142	41.04%
Curriculum content of primary interest to students	Translation	53	15.32%
	Writing	44	12.72%

Table 2 indicates that students exhibit a strong preference for learning content characterized by interactivity, practical applicability, and critical thinking. They aspire to move from passive recipients of knowledge to active inquirers and collaborators through case studies, team-based collaboration, and in-depth discussions, reflecting their intrinsic motivation to expand their educational and developmental domains. However, traditional general English courses continue to emphasize reading, grammar, and writing, which generates a supply-demand imbalance between the teaching content provided by the curriculum and the authentic needs of students as learners. This misalignment constrains the "energy flow" within the educational system, subsequently impeding students' learning interest, engagement, and motivation.

4.1.3. The Discrepancy between Monotonous Teaching Methodologies and Students' Expectations for Diversified Instructional Approaches

As shown in Table 3, the data indicate that 88.73% of students believe that "teachers' teaching methods influence learning motivation." In response to the question "What contents do you hope to add to increase interest," the most frequently selected options are "adding learning apps (such as Qufuyin) to improve English output" (73.41%), "introducing AI to assist teaching" (66.47%), and "adding a peer-assisted learning session" (58.96%).

Table 3. Teaching Method Feedback Data.

Feedback on Teaching Methodologies	Option	Count	Proportion
Does the teaching methodology influence students learning motivation?	Yes	307	88.73%
The content students hope to add	Add learning apps (such as Qufuyin)	254	73.41%
	Introducing AI to assist teaching	230	66.47%
	Add a peer-assisted learning session	204	58.96%

These findings suggest that teaching methodologies have become a primary constraint on the vitality of the educational ecosystem. A substantial majority of students perceive that instructional approaches directly shape their engagement and learning interest. Their pronounced preference for digital learning tools-such as mobile applications and artificial intelligence-and peer collaboration highlights the limitations of traditional lecture-based teaching models. As digital natives, students expect the learning environment to integrate technological resources while promoting multi-directional interactions among teachers and students, among peers, and between humans and machines. Such an environment fosters a dynamic learning community where energy and information circulate rapidly. By contrast, a singular, uniform teaching method fails to meet these ecological demands, thereby impeding the holistic development and progressive advancement of the educational system.

4.1.4. Ambiguity in Career Orientation and Lack of Professional Distinctiveness

As shown in Table 4, in response to the open-ended question "What areas do you hope to improve in the next semester?", "nursing English" and "oral communication related to work scenarios" emerged as the most frequently mentioned responses. When

asked "What additional English courses would you like to see offered?", subjects such as "medical English," "business English," and "tourism English" were repeatedly cited.

Table 4. Demand Type Data.

Demand Type	Typical Feedback Content	Frequency
Professional English	Nursing English, Medical English, Workplace English	High
Oral communication and interaction	Oral communication related to work scenarios	High
Expansion courses	Tourism English, Business English	Medium

These data indicate that the current general English teaching system exhibits a very limited alignment with students' professional contexts, resulting in an isolated "flowerpot" environment that is disconnected from the broader occupational ecosystem. The skills developed within this "flowerpot" model demonstrate minimal applicability to authentic professional settings. Students' strong demand for "Professional Nursing English" and "Occupational Scenario-Based Oral Communication" reflects their desire to overcome this isolation and acquire English competencies that are directly relevant to their future professional roles, which have specific occupational requirements. The systemic disconnection between the educational framework and the wider professional ecosystem, such as the healthcare industry, constitutes a critical bottleneck that constrains the development of students' professional competencies.

4.2. Construction of an Ecosystem Model for English Teaching in Vocational Undergraduate Institutions

To address the ecological challenges identified above, this study proposes an "Ecosystem Model for English Teaching in Vocational Undergraduate Institutions," aiming to reconstruct a student-centered teaching ecology characterized by internal and external integration and dynamic equilibrium. The model is structured as a concentric circular framework, as illustrated in Figure 1.

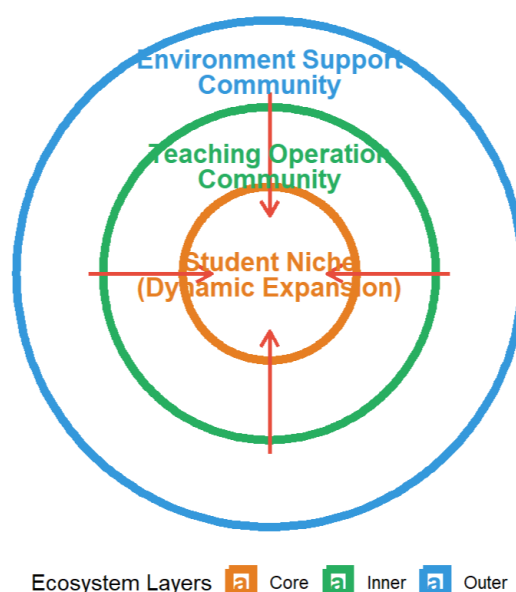


Figure 1. English Teaching Ecosystem Model for Vocational Universities.

The model consists of three components: the core circle, the inner circle, and the outer circle, representing the students' ecological niche, teaching operations, and environmental

support, respectively. The core circle positions students as the focal point of energy flow and the central value of the system. The ecological niche is conceived not as a fixed role but as a dynamic process of expansion and development. The primary purpose of the teaching system is to facilitate students' transformation from passive recipients of language knowledge to active users of language competence, cross-cultural communicators, autonomous learning managers, and ultimately proficient professional communicators within their respective fields.

The teaching operations component directly influences the "producers" and "mediators" within the core circle and comprises four elements: teachers, teaching content, methods, and evaluation. Teachers should adopt an ecological teaching perspective, dynamically adjusting instruction based on student feedback, with their role evolving from "knowledge authority" to "student guide." For teaching content, a three-tier system should be implemented, including a foundational layer of general English, an application layer of vocational English, and an expansion layer emphasizing humanistic literacy. This structure ensures that the curriculum aligns with students' majors and is connected to real vocational contexts. Teaching methods should integrate project-based learning, task-based instruction, cooperative learning, and, with the support of online platforms such as artificial intelligence, create a blended virtual-real learning environment that fosters interactive collaboration. In addition to ensuring the quality of teachers, content, and methods, a diversified evaluation system should be established, combining formative and summative assessments and focusing on students' growth and progress as they expand their ecological niches.

Environmental support provides macroscopic guidance and directional influence for the internal system, encompassing the school's cultural environment and the broader social and professional context. The school's cultural environment-including policy support, resource allocation, and the depth of school-enterprise collaboration-serves as the internal guarantee for the system's operation. The social and professional environment, in turn, offers guidance and feedback based on industry standards, enterprise demands, technological development trends, and social and cultural changes.

It should be noted that the arrows spanning all layers of the model represent the continuous flow of energy and information, indicating that the system operates as an open and self-adaptive circular system. Driven by external social and occupational demands as well as educational norms, the internal teaching operations are supported by the school environment. Teachers continuously optimize teaching content, methods, and evaluation systems based on real-time information from students and the broader environment, forming a virtuous cycle of "demand-supply-feedback-adjustment."

5. Conclusion

This study systematically analyzed the structural contradictions existing in the English teaching ecosystem of vocational undergraduate colleges from the perspective of ecological linguistics. Empirical research shows that the current teaching system presents significant "disconnection" features: there is a fundamental disconnection between students' learning goals and the system's cultivated quality-oriented goals; students' preference for interactive and application-oriented learning content deviates from the traditional curriculum setting; the single teaching method is in sharp contrast with the diversified digital learning methods; the disconnection between general English teaching and students' professional development needs leads to the prominent "flowerpot effect".

In response to these issues, this study has developed an English teaching ecosystem model centered on the "dynamic expansion of students' ecological niches." The model employs a three-tier concentric circle structure-the core circle (student ecological niche), the inner circle (instructional operations), and the outer circle (environmental support)-to establish an open system where various ecological factors synergistically coexist, facilitating the cyclical flow of energy and information. The practical pathways of this

model include: shifting educational objectives from exam-oriented to competency-based cultivation; achieving an organic integration of general English and vocational English in curriculum content; adopting technology-enhanced interactive teaching methodologies; emphasizing process-oriented and developmental evaluation systems; and deepening the integration of industry and education in the teaching environment.

The limitations of this study lie in the fact that the research subjects are concentrated in a specific major of a single institution, and the theoretical model constructed needs to be verified for its effectiveness through long-term teaching experiments. Future research should expand the sample range, conduct action research based on this model, and further explore the specific applications of artificial intelligence technology in optimizing the teaching ecosystem, so as to further improve the theoretical construction and practical path of the vocational undergraduate English teaching ecosystem.

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