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Original Paper

Rethinking English Teaching in Higher Vocational Education through an Ecological Approach

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Abstract

Higher vocational education has developed rapidly, but it still faces the problem of being scattered and lacking overall coherence. This study, from an ecological perspective, regards the actual problems existing in teaching as a kind of structural disconnection within the educational ecosystem. From the four core principles of ecological linguistics (holism, dynamics, interaction, and situatedness), it examines the typical disconnection problems in teaching: the inconsistency between learning goals and educational goals, the mismatch between the taught content and the update speed, the inconsistency between the expected teaching methods and the actual teaching methods, and the disconnection between learning and the professional environment. The study uses the questionnaire survey data from a vocational university in Hainan Province (N=346) as a reference to verify the applicability of this theory. At the same time, based on ecological diagnosis, a three-layer ecological restoration model consisting of student ecological niche (core circle), teaching operation (inner circle), and environmental support (outer circle) is proposed. This provides an analytical framework for diagnosing the imbalance problems in the teaching system and a theoretical model for guiding systematic reforms.

Keywords

higher vocational education, english teaching, ecological approach, teaching reform

1. Introduction

With the reform of China's education system, vocational education has become an important part of China's efforts to cultivate high-level technical and applied talents (Zong, 2022). Especially in the field of English teaching, not only do students need to be provided with basic language knowledge, but also

support for professional communication, cross-cultural interaction, and lifelong learning is required. However, currently, the foundation of vocational education students lacks the ability to meet the actual needs, resulting in a disconnection between English learning and practical demands (Zhang, H., & Yang, 2025). Students gradually lose interest in English learning.

This problem cannot be solved by a single reform, such as updating teaching materials, introducing new technologies, or adjusting teaching methods. Instead, it requires a completely new perspective, placing the existing problems within the entire teaching environment, and presenting the problems in a coherent manner. In other words, the challenges faced by higher vocational English teaching are structural disconnections within the system, such as the inconsistency between daily classroom practice and actual situations, and the outdated content of textbooks that cannot keep up with the times and help students find better employment. To understand these problems, this study adopted an ecological approach, viewing language teaching as a complex dynamic ecosystem, emphasizing the interrelationships among teachers, students, the environment, and the language itself (Haugen, 1972; Mühlhäusler, 1996). From this perspective, a complete teaching system requires coordination and consistency among all components. Once this consistency is broken, the system loses coherence and effectiveness. Based on the above viewpoints, this study poses three research questions:

1. What are the main disconnections between students' learning needs and the current teaching system in higher vocational English education?
2. How can these main disconnection phenomena be understood from an ecological approach ?
3. Is there a model that can help restore the consistency among the components of the teaching system?

2. Literature Review

2.1 The Origins and Development of Ecolinguistics

In 1972, American linguist Haugen first proposed the concept of ecological linguistics, defining "language ecology" as the study of the interaction between any specific language and its environment (Haugen, 1972), and emphasized that language cannot be understood independently of the social environment in which it is used. Subsequently, Bang and Doll proposed dialectical eco-linguistics framework and emphasized that language is not a neutral entity but is intertwined with social practice (Bang & Doll, 1993), which focused on the interdependence of biological, ideological, and sociological dimensions in language as social praxis. This framework provide important theoretical support for applying an ecological perspective to language teaching research. This study extends ecological approach to analysis of vocational English teaching systems, which withdraw four core principles of ecological linguistics research: holism (the interrelation among all elements within the system), dynamics (the system's ability to change), interaction (the importance of multi-directional communication), and situatedness (the necessity of understood language use within context).

2.2 Educational Ecology and Foreign Language Teaching

Educational ecology applies ecological principles to educational research, treating the educational system as an open system that interacts with both internal and external environments (Cremin, 1976). Chinese scholars have continuously introduced foreign new theories for localized research, introducing the "limiting factors" principle in educational ecology, which states that the absence or excess of key factors in the educational ecosystem will limit overall development (Guan, 2003). At the macro level, they have constructed an online education ecosystem model, providing a technical integration analysis framework for foreign language teaching (Gu, 2005). Chen, from a micro perspective, simulated an ideal educational ecosystem through the organic integration of computer networks and foreign language classrooms, emphasizing that the role of technology in the ecosystem is the internal core rather than an external "auxiliary" factor (Chen, 2006). Some scholars also believe that a healthy educational ecosystem usually consists of three core ecological groups: the student group, the teacher group, and the teaching environment group (Bian, 2025). All of these provide theoretical support for the following research.

2.3 Challenges in Higher Vocational English Education

At present, there are indeed several problems in professional English education that need to be addressed, such as the inability to uniformly adopt teaching methods based on students' varying language proficiency levels (Wang, Zhang, & Ma, 2014). Additionally, the demands for professional English skills vary among different majors, such as reading technical materials or mastering workplace terminology (Li, & Chen, 2017). This adds difficulty to the implementation of teaching. Li and Chen studied the ambiguous ecological niches of university English students and found a significant gap between their actual abilities and the roles set by the course design (Liu, 2008). Liu, however, proposed an ecological-based classroom model to optimize interpersonal interaction and emphasize democratic and participatory learning environments (Braun & Clarke, 2006). Wang, Zhang, and Ma analyzed the integration of information technology with university English courses from an ecological perspective, pointing out that technology is often outside the teaching system rather than being fully integrated (Li, & Chen, 2017). Although these studies clearly indicate the current awkward situation of the English discipline, most of them only focus on specific elements within the teaching system and do not conduct an overall examination and provide complete solutions. Therefore, a comprehensive perspective is needed to coordinate the interaction between various elements and examine how they affect learning outcomes. This study views the challenges in teaching as "fault lines" in an ecosystem and uses the dialectical eco-linguistics framework as a diagnostic basis to find solutions.

3. Four Disconnections in the Teaching Ecosystem

3.1 Disconnection between Learning Goals and Educational Objective

The academic needs of students should align with the employment demands, so as to make personal goals compatible with the overall goals of the educational system. However, in current educational

practice such consistency cannot be achieved. For instance, the current goals set by higher vocational programs for English education emphasize comprehensive abilities such as cross-cultural communication and critical thinking, which are too broad and fail to take into account students' weak English foundation and uneven English proficiency. This gap between theory and reality violates the principle of integrity, separating the learner`s goals from overall macro-level educational goals. As a result, the energy flow within the educational ecosystem becomes distorted. Teachers' energies are mostly focused on exam skills, and even the course resources are constrained by exam content. Students` time is occupied by mechanical memorization, and they cannot engage in sufficient English learning that can meet career requirements.

3.2 Disconnection between Preferred Content and Delivered Content

The current teaching designs fail to meet students' constantly changing content preference, or fail to meet the market`s demand for professional talents due to insufficient updates, resulting in a static mismatch within the entire teaching ecosystem. The demand for professional English by students is not constant but changes along with clinical practice, technological tools, international standards, and individual career development. A qualified teaching ecosystem should continuously maintain dynamic changes and make corresponding adjustments through built-in feedback loops to meet market demands..

However, current vocational education cannot keep up with the constantly evolving industry needs. The selection of teaching materials is based on availability or administrative convenience rather than real-time updates according to needs. Course outlines are rarely revised due to information updates within the same semester. This rigidity violates the principle of dynamics. A student pointed out: "Researching a topic often takes several weeks, but the data or information collected before the task is completed often undergoes updates or changes, yet the course has never been updated." Another commentator said: "I once requested the teacher to add some case studies on nursing, but due to the need to conform to the teaching design and be consistent with existing textbook, such requests were often ignored in favor of meeting the individual academic needs of students." Thus, it can be seen that the current education system has failed to establish a feedback mechanism and is unable to make teaching content adapt to the development of the times and the actual needs of learners.

3.3 Disconnection between Expected and Actual Teaching Methods

The students' learning expectations do not match the actual situation. The mainstream teaching model focuses on lecturing and textbook-based methods, with the teacher- centered approach, which ignoring students' need for interactive teaching and limits the vitality of the educational ecosystem. This model is only suitable for one-way information transmission, but it cannot cultivate the dynamic interaction necessary for a vibrant learning community. For example, many students stated that they would independently use language learning applications (such as Duolingo), but found that classroom teaching still lacked the application of a large number of interactive apps, and the classroom design strictly followed outdated textbooks. Some students curiously asked, "Why can't these tools be used in

the classroom?" While others pointed out that group collaboration helps to enhance autonomous learning and learning interaction, and students can deepen their understanding of knowledge during discussions and information exchanges. But the fact is that such activities have not yet been fully integrated into regular classroom activities.

3.4 Disconnection between Learning and Professional Context

Language learning should take place in a real environment or situation. English classes should be designed to create integrated English scenarios or environments that can be easily incorporated into students' learning, providing them with a realistic context for understanding and using the language. For example, a simulated laboratory can be provided for professional clinical medical scene learning. However, current English teaching is mostly limited to the textbooks themselves, disconnected from the actual professional ecosystem and divorced from the real world, unable to provide a truly realistic learning environment.

Although students have become aware of this gap and expressed their need for professional-related content, due to the disconnection between the textbooks and the teaching design in actual teaching activities, students' actual needs cannot be met in a timely manner. This is manifested as differences between "nursing English", "medical terminology", "patient communication", and "work-related terms or daily conversation expressions" and reality, as well as a gap between language expression and actual needs. One student wrote in an open-ended response: "I hope to read English versions of nursing journals, but no relevant exercises have ever been conducted in the actual classroom." Another student emphasized: "After graduation, I want to work in an international hospital. But the English knowledge I have learned does not match the actual situation. I don't know how to improve myself to match the relevant job."

4. A Three-layer Ecological Model for Restoring Alignment

To repair the four disconnections, a three-layer nested ecological model was proposed (see Figure 1). The model is designed to restore coherence among system components by re-establishing the four eco-linguistic principles.

4.1 Structure of the Model

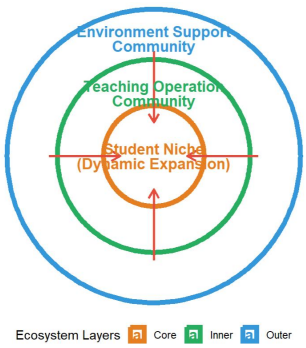

Figure 1. English Teaching Ecosystem Model for Vocational Universities

As shown in Figure 1.English Teaching Ecosystem Model for Vocational Universities, the model consists of three interconnected layers (adapted from [10]). The core circle represents student ecological niche. Students are the focal point of energy flow and the central value of the system. The ecological niche is not a fixed role but a dynamic process of expansion: from passive recipient of language knowledge, to active user of language competence, further expanding to cross-cultural communicator, then to autonomous learning manager, and ultimately to qualified professional communicator.

The inner circle represents teaching operations, consisting of four components, these are teachers, teaching contents, teaching methods, and evaluation systems. Teacher roles should transition from knowledge authorities to student guides. Teaching content should establish a three-tier system, including general English foundation layer, vocational English application layer, and humanities literacy expansion layer. Teaching methods should integrate project-based learning, task-based teaching, cooperative learning, and technology-assisted approaches. Evaluation systems should combine formative and summative assessment, focusing on student growth during ecological niche expansion.

The outer circle represents environmental support, including the school culture environment (policy support, resource investment, school-enterprise cooperation) and the social professional environment (industry standards, enterprise demands, technological trends).

Arrows running through all three layers represent continuous flows of energy and information, enabling the system to form a virtuous cycle of "demand–supply–feedback–adjustment."

The model embodies the four ecolinguistic principles: holism is reflected in the three-layer structure forming an indivisible organic whole; dynamism is reflected in the feedback loops enabling self-regulation and evolution; interaction is reflected in multi-directional exchanges among components; situatedness is reflected in the outer circle connecting the instructional system to the professional ecosystem.

4.2 Model Restores Disconnection and Embodies the Four Eco-linguistic Principles

The three-layer ecological model is designed not only to repair each disconnection but also to operationalize the four core principles of eco-linguistics. Table 1 summarizes how each layer addresses a specific disconnection.

Table 1. Mapping Disconnection to Model Components

Disconnection	**Ecological Principle Violated**	**How the Model Restores Disconnection**
Learning Goals vs.Educational Objectives	Holism	Core circle (student niche) integrates individual goals with systemic objectives through

		personalized learning pathways and diagnostic assessment
Preferred vs. Delivered Content	dynamics	Inner circle adopts dynamic feedback and adaptation mechanisms
Expected vs. Actual Teaching Methods	Interaction	Inner circle incorporates technology (Apps, AI), peer learning, and multi-direction interaction
Learning vs. Professional Context	Situatedness	Outer circle connects the teaching system to industry through collaboration, internships, and feedback loops.

The research is conducted from an ecological perspective, comparing the typical decoupling problems that occur in teaching and identifying the corresponding patterns and solutions.

The overall nature runs through the entire model structure, where the core circle represents students, the inner circle refers to the teaching operation community, and the outer circle is the environment in which the entire teaching activity takes place. These three layers form an inseparable organic whole. Any layer cannot operate effectively without the cooperation of the other layers: the growth path of students depends on appropriate teaching methods, and the proposal and design of teaching methods require the support of institutions and industries. This interdependent relationship is the basis for ensuring the system's operation as a unified ecosystem, rather than a collection of unrelated parts.

The dynamics run through the continuous feedback loops of the three layers of the model. Diagnostic assessment provides the basis for personalized learning paths; formative assessment provides the basis for continuously adjusting teaching methods; the update of course content depends on students' feedback and opinions. These loops prompt the system to self-regulate and continuously develop over time, thereby adapting to changes in professional needs. This interaction refers to the multi-directional communication among all components within the model. That is, the information within the inner circle flows not only from teachers to students, but also continuously among students (peer learning), between students and technology (applications, artificial intelligence), and between technology and teachers (real-time progress monitoring). The outer circle creates a dynamic communication platform through linking institutions and industries, replacing the traditional one-way knowledge transmission model.

At the outermost environment, the teaching system is clearly linked to the professional ecosystem. By integrating real professional scenarios (medical case studies, simulated dialogues), industry jointly developed content, and real work internship places, it ensures the authenticity and validity of the

language usage environment, making all learning activities have clear orientation.

5. Implications for Teaching Reform

Based on the Model (see Figure 1), five interconnected recommendations are proposed for reforming English teaching in higher vocational university.

5.1 Restructure Teaching Objectives

No longer follow the old teaching objectives, but establish a dynamic two-way mechanism that maintains the macro-level guidance while determining specific objectives through regular demand analysis and feeding the feedback back to the teaching design, thereby designing teaching objectives that meet market demands and student needs. This means that teaching and research proceed simultaneously, and the course design can be supplemented in a timely manner to adjust the disconnected objectives at present.

5.2 Expand Teaching Content

Build a curriculum system that integrates with students' majors. Incorporate content related to the major (such as nursing literature reading, medical scene dialogues) into general English courses. Utilize modern technologies and incorporate AI-assisted learning methods to enhance the cutting-edge nature of the classroom. Implement tiered teaching and offer specialized English elective courses for students with employment needs. This helps students construct a dual knowledge base of language skills and professional techniques, directly serving the job market.

5.3 Innovate Teaching Methods

We should promote learning interaction through project-based learning, cooperative learning, flipped classrooms, and technology-assisted methods. Learning applications and artificial intelligence tools should be incorporated as integral components of teaching. A learning community characterized by multi-directional interaction should be established, so that students' learning can go beyond the classroom and textbooks. This reflects the principle that teaching is not about giving people fish but teaching them how to fish. The purpose of English learning is to foster students interested in English learning and enable them to communicate with the world using critical thinking.

5.4 Reform Evaluation Systems

Currently, educational evaluations mainly focus on final examination rather than process-oriented assessment that emphasizes development. Students' grades are determined solely by the final end-of-term exam, and few assessment methods such as classroom participation, group presentations, and learning logs are incorporated. Even if they are included, they are often superficial and cannot be compared with the final exam. Therefore, from an ecological perspective, we should pay more attention to the process of ecological niche expansion, that is, emphasizing formative assessment rather than the ultimate result of a single exam paper.

5.5 Optimize the Teaching Environment

From the perspective of goal orientation, each department of the school should vigorously strengthen

cooperation with enterprises-broaden teaching methods, expand teaching materials, develop teaching technologies, and improve teaching environments. It is necessary to invite industry professionals to participate in course design, introduce real cases, and organize practical activities, finally teaching can achieve meaningful integration with the professional ecosystem.

6. Limitations and Future Research Directions

The study has three limitations: the model is mainly constructed from ecological perspective with a single dimension; the study did not adopt a quasi-experimental design and lacked control tests, and the model has not yet been verified in large-scale teaching practices.

Based on these limitations, the future research directions are as follows: (1) Conduct quasi-experimental studies with control groups to verify the feasibility of the model. (2) Conduct action research in the classroom environment and determine the reliability of the experiment through multiple rounds of exploration. (3) Conduct comparative case studies across multiple institutions and disciplines, rather than being limited to a single discipline teaching, to expand the audience scope. (4) Incorporate artificial intelligence-assisted teaching to support the promotion of personalized learning paths and improve the model based on feedback.

7. Conclusion

The study explored the challenges faced by vocational undergraduate English teaching from an ecological perspective. By constructing models to analyze the decoupling issues in the existing teaching practices, and supplemented with case studies for illustration. The study analyzed and summarized four decoupling phenomena, and conducted model analysis from the perspective of ecological linguistics on the gap between teaching and reality, providing a path for understanding the existing problems in vocational undergraduate teaching.

This study transformed the ecological linguistics framework into a diagnostic tool, integrated fragmented research on the foreign language teaching ecosystem into a unified three-layer model, understood the teaching challenges as systematic disconnections rather than isolated problems, and provided an analytical framework. However, due to the lack of sample size and quasi-experimental research, more data is needed to verify the feasibility of the model. This can be done through comparative studies, action research, cross-context comparisons, and the implementation of technology-supported approaches.

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