

Reform and innovation of English language teaching in environmental design from the perspective of cultivating top talent

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Abstract. With the accelerated globalization and rapid development of China's environmental design industry, the demand for talent in the field of environmental design with an international perspective and cross-cultural communication skills is increasing. Therefore, English language teaching in environmental design not only meets this demand but also makes teaching reform particularly important. This paper analyzes the current status and issues of English teaching in the field of environmental design, and proposes targeted reform strategies aimed at enhancing students' professional English application abilities. The goal is to allow students to access a wider range of cutting-edge environmental design knowledge and better adapt to the international development trends of the industry.

Keywords: environmental design, English teaching, teaching reform, international perspective, cross-cultural communication

1. Introduction

Environmental design, as a discipline within design studies, is a comprehensive and practical art focused on the design and creation of indoor and outdoor human living environments. It represents an organic combination of design studies and engineering, forming a talent cultivation path characterized by "interdisciplinary applied talents, local internationalization, and a dual focus on design and construction." The field is vast, covering areas such as interior design, landscape design, and urban planning. In the context of globalization, professionals in environmental design must possess solid professional knowledge, and with the accelerating process of global integration, foreign language literature and international journals have become important mediums for understanding overseas environmental design practices and research areas. Thus, students must possess strong English language skills and cross-cultural communication abilities. The establishment of English courses in environmental design is a crucial channel for university students to stay updated on the latest developments and research results in international research fields. However, there are several issues in current environmental design English teaching, such as single teaching methods, outdated content, and insufficient application abilities in English. Consequently, innovating and reforming English teaching in environmental design to improve students' English application skills and broaden their professional horizons has become an important task in meeting the demands of industry internationalization.

2. Current status and issues of English language teaching in environmental design

2.1. Outdated textbook content

In terms of textbook content, while there is a wide range of textbooks for English courses in design-related disciplines, such as architecture, industrial design, advertising design, interior design, and art design, there is a notable lack of textbooks specifically for environmental design. Currently, the primary textbooks are *Environmental Art Design Professional English*, edited by Dong Li in 2009, and *Environmental Art Design Professional English*, published by Xiao Zhou Yang in 2013. These textbooks still follow the traditional knowledge system and lack the latest research findings and typical case studies relevant to contemporary environmental design both domestically and internationally. As a result, students are learning outdated content that is disconnected from real-world applications and unable to meet the evolving needs of environmental design.

2.2. Single teaching method

From the perspective of teaching methods, instructors generally rely on traditional lecture-based approaches. In addition, the traditional content in textbooks, which contains limited up-to-date knowledge, struggles to stimulate students' interest and creativity. One common issue in teaching is how to reform teaching methods to foster students' passion for the profession and encourage innovation. This challenge is prevalent across the field of environmental design education.

2.3. Lack of clear application of professional English

Students in environmental design have English proficiency levels lower than those of average college entrance exam candidates, particularly in vocabulary, grammar, and the four language skills: listening, speaking, reading, and writing. In current environmental design English classes, students primarily encounter specialized vocabulary and theoretical knowledge, but they lack practical experience using English as a tool in the field. For example, they have limited exposure to tasks such as literature review, attending international conferences, or reading original materials. These issues not only hinder students from accessing cutting-edge academic literature in the field, understanding the latest design concepts and technological trends, but also limit their design scope and professional vision.

3. Reform ideas for English language teaching in environmental design

3.1. Textbooks

Textbooks form the foundation of teaching, serving as the basis for students' learning. Therefore, they should be both original and scientific, appropriate for teaching, accurate, and comprehensively reflect the basic knowledge of the discipline as well as the latest advances in teaching and research. Developing textbooks with appropriate teaching content is crucial.

3.2. Innovative teaching methods

To stimulate students' interest and motivation, and to improve teaching effectiveness, specific strategies for teaching English in environmental design include:

3.2.1. *Adopting interactive inquiry-based teaching*

Interactive inquiry-based teaching is an approach that emphasizes active student participation and inquiry. Its core principle is to guide students in exploring and solving problems, thus helping them build knowledge and skills.

Traditional interactive teaching models have not proven to be particularly effective in practice, and in teacher-student interactions, students often show avoidance and resistance. Therefore, a multi-dimensional interactive model needs to be created that integrates classroom learning with real-life contexts. Teachers can design discussion scenarios tailored to the course content, providing students with an exploratory learning platform. Linking problems to real-world situations increases the openness of the issues and encourages students to think critically about them from their own perspectives, fostering better interaction with the teacher.

For example, in the lesson on the original text *What Does It Mean to Future-Proof a City, Landscape, or Building with AI?*, the teacher could first introduce the background of the topic, discussing the changes and challenges facing future cities. This could lead to a problem-based discussion:

Problem 1: What pressures does population growth place on urban areas? What do people need? Students might think of responses such as water, food, public space, infrastructure, and housing.

Problem 2: An open discussion: What do you think future urban landscapes will look like? How do you believe AI technology can assist architects and urban landscape designers in creating more livable environments?

Through this problem-solving process, students can develop their logical and creative thinking. This kind of training comprehensively enhances students' overall quality, better preparing them for future challenges.

3.2.2. *Introducing project-based learning*

Project-Based Learning (PBL) is a teaching model centered around specific projects. The project involves tasks such as literature review, presentations, and creative brainstorming to improve teaching quality.

By introducing design tasks, students can engage in literature research to understand the current situation, identify research limitations, and borrow methods, enhancing their awareness of the importance of literature review. As the saying goes, "Know yourself and know your enemy, and you will win every battle."

The project-based approach emphasizes using English as a tool throughout the project. Through tasks related to specific course units, students will practice applying English flexibly within the context of environmental design. For instance, in the sustainability module, students might read the article Significance of Sharing, exploring the work of Zhou Shushu, the founder of the DiGua community, and how the DiGua team transforms and connects idle urban spaces to better utilize public spaces and create more social public goods. The teacher could design tasks related to this real-life project, such as asking students, in groups, to select an old community for renovation and present their renovation model and project in English. This project not only allows students to gain deeper understanding of the original text but also helps them develop the ability to express professional concepts in English through project discussions, preparations, and presentations, improving their writing, speaking, and teamwork skills.

For another example, before studying the original text Suzhou Museum, students could engage in brainstorming to list the characteristics of Suzhou gardens. Then, through group discussions, they could compare Japanese and Chinese gardens, presenting their findings via PowerPoint, which would help them develop their ability to express themselves in professional English.

3.2.3. Utilizing multimedia teaching resources

As we enter a high-tech era, teachers should not only continue to reinforce the advantages of traditional teaching methods but also incorporate innovative technology into the classroom. For instance, teaching and research institutions can create smart classrooms that blend cutting-edge, scientific, and practical teaching resources. By integrating technologies such as VR (Virtual Reality), AR (Augmented Reality), and other multimodal AI tools, teachers and students can gain immersive interactive experiences. This enhances students' language perception, cross-cultural understanding, and emotional empathy, fostering a deeper engagement with English language learning. We believe that such an approach will combine "language classrooms" with the "international society," integrating "traditional motivations" with "new-age technologies" to make the classroom dynamic and the learning experience engaging.

Moreover, university instructors can leverage internet technology to share high-quality educational resources, such as recording MOOCs (Massive Open Online Courses) or establishing WeChat public accounts for self-directed student learning. Teachers can use these resources to supplement teaching, such as playing English videos and audios related to environmental design. Additionally, by selecting articles from well-known international journals in environmental design and including them as supplementary materials, students can expand their global perspective and stay updated on industry developments.

3.3. Expanding the content of English language teaching in environmental design

Due to the interdisciplinary nature of environmental design, it is crucial to keep pace with the times, constantly absorbing and integrating new ideas and technologies from various fields to maintain its innovation and foresight, aligning it with international standards. Specific strategies include:

3.3.1. Introducing the latest research results and case studies

Teachers should pay attention to the latest design achievements and case studies in the environmental design industry and incorporate them into classroom teaching. By introducing these results and cases, students can stay informed about the latest developments and trends in the industry, broadening their horizons and knowledge base. In recent years, artificial intelligence (AI) has become a promising design tool. Through studying original texts such as Artificial Intelligence and Urban Planning: Technology as a Tool for City Design, students can learn how to integrate AI with urban planning. By studying AI Analyzes Data Sets to Find Sustainable Construction Opportunities, students will understand how AI algorithms can analyze vast amounts of data on building performance, climate conditions, and user behavior to optimize building systems for energy efficiency, water conservation, waste reduction, and other sustainability goals.

3.3.2. Adjusting teaching content based on practical needs

Teachers should adjust the teaching content to meet the actual needs of the environmental design industry. For example, they can add topics and terminology related to green building, building materials, and sustainable development; strengthen connections with urban planning and landscape design; and also integrate ideological and political education into the curriculum, combining Chinese traditional educational thought with international educational practices for mutual learning.

For instance, in the study of the text Suzhou Museum, students can learn about and discuss how designer Ieoh Ming Pei perfectly combines modernism with Suzhou's traditional culture. How does the layout of the Suzhou Museum draw inspiration from the design ideas of traditional Chinese architectural clusters, using axial symmetry and free-style layout? How are elements of the garden abstractly incorporated? This approach makes the knowledge students learn more closely aligned with real-world applications.

3.4. Strengthening English application skills in environmental design

To enhance students' English application abilities, English teaching in environmental design should focus on the following aspects:

3.4.1. Cultivating oral expression skills

Teachers can improve students' oral expression skills by organizing oral practice and simulated dialogues on topics related to environmental design. For example, by selecting 5-10 topics about environmental design, such as:

What is the importance of sustainable design in environmental design?

What are some common environmental challenges faced by designers in the field of environmental design?

Students can work in small groups to set up dialogues based on these topics, turning Q&A into realistic scenario dialogues, allowing students to fully demonstrate their ability to use professional English vocabulary and sentence structures fluently in context.

3.4.2. Cultivating listening comprehension skills

Teachers can train students' listening comprehension skills by playing English videos and audios, such as documentaries and interviews with environmental design professionals, and incorporating related questions. Additionally, students should be encouraged to follow English-language news and reports about the environmental design industry to improve their listening skills and ability to gather information.

3.4.3. Cultivating writing skills

Teachers can improve students' writing abilities by assigning writing tasks, providing guidance on writing techniques, and encouraging students to write project reports and academic papers in English. These activities help students develop their writing skills and academic literacy.

3.5. Constructing a diversified evaluation system

To comprehensively assess students' English learning outcomes, English language teaching in environmental design should establish a diversified evaluation system. Specific strategies include:

3.5.1. Introducing formative evaluation

The concept of formative evaluation was first introduced by Scriven in 1967. In 2008, the U.S. Council of Chief State School Officers established a research department for formative evaluation. In 2018, the FAST revised the definition of formative evaluation as: "A planned approach by teachers and students to gather evidence of student learning during instruction, which promotes students' understanding of learning objectives and supports their growth as learners and the achievement of these objectives." This revision emphasizes that formative evaluation is not solely concerned with student grades but also aims to monitor and support both teachers and students in their self-improvement processes.

For example, peer evaluations among students and objective evaluations from teaching platforms can be appropriately introduced. A multi-dimensional observation approach provides a more comprehensive and intuitive reference system for evaluating students' learning outcomes. Taking the 2021 environmental design course taught by the author as an example, the evaluation of student presentations is a combination of peer assessments within groups and evaluations from the instructor. The evaluation criteria consist of several key components (see Table 1).

Table 1. The Evaluation of Presentation

Group name			
		Maximum Score	Actual Score
Topic	Content is topic new?	5	
	Is topic clear?	5	
	Is topic interested?	5	
Powerpoint	If each slide has a clear heading	2	
	If each slide normally contains around 35-50 words	2	
	If each bullet point consists of an intelligible phrase	3	
	If it makes appropriate use of pictures	2	

Table 1. Continued

Voice	if you have a clear voice to make everyone hear you	
	interactive	2
eye contact	don't always read from slide	2
	do not use media to hide you	2
	the way you stand or walk (do not lean on the table; do not walk around too much)	2
Body language	your facial expressions (smile occasionally)	2
	your hand and arm movements	2
English expression	If there are grammar errors	5
	Expressing fluently	5

3.5.2. *Emphasizing process-oriented evaluation*

A scientific evaluation system should focus on students' development during the learning process, paying attention to the transformations that occur in students over time. Process-oriented evaluation focuses on assessing students' learning attitudes, methods, abilities, and other aspects demonstrated throughout the learning process.

Classroom Evaluation: Teachers can evaluate students' learning status, participation, and comprehension in real-time through classroom observations, questioning, group collaborations, and sharing activities.

Assignment Evaluation: Teachers can assess students' grasp of knowledge and application of skills through regular assignments. Additionally, students should be encouraged to engage in self-assessment and peer evaluation, cultivating their self-reflection skills and critical thinking abilities.

Comprehensive Expression: In the final presentation, a multi-dimensional and objective evaluation of students' performance in listening, speaking, reading, and writing within the context of professional English is required.

3.5.3. *Incorporating summative evaluation*

Summative evaluation is conducted after the completion of teaching, making it more suitable for assessing students' learning quality at specific stages, particularly benefiting students with stronger learning capabilities. The goal is to measure students' learning outcomes and levels. Teachers can implement summative evaluations through exams, project presentations, and other methods to assess students' learning effectiveness and their ability to apply English in practice.

4. Analysis of the effectiveness of English teaching reform in environmental design

4.1. Increased student interest and engagement

Through the innovation of teaching methods and the updating of course content, students' interest and enthusiasm for learning have significantly increased. They have become more proactive in engaging with classroom activities and the learning process, developing a strong interest and passion for the knowledge they are acquiring.

4.2. Enhanced English application skills

By strengthening the training of students' professional English application abilities and constructing a diversified evaluation system, their English application skills have improved significantly. Their speaking, listening comprehension, and writing skills have all shown noticeable progress, enabling them to better meet the needs of the environmental design profession and the demands of international communication.

4.3. Improvement in student innovation and comprehensive competence

Through the reform and innovation of English teaching in environmental design, students' overall competencies have significantly improved. They have not only acquired solid professional knowledge and skills, broadened their perspectives, and enhanced their design innovation capabilities, but they also possess strong English language skills and the ability for cross-cultural communication. These improvements have laid a solid foundation for their future career development.

5. Conclusion

The reform of foreign language (English) teaching in environmental design is an important task in current environmental design education. Through measures such as the innovation of teaching methods, updating of course content, strengthening foreign language application skills, and the construction of a diversified evaluation system, significant improvements have been made in students' learning interest and engagement, enhanced foreign language proficiency, and overall competencies. In the future, we will continue to deepen research and practical exploration of foreign language teaching reform in environmental design, contributing to the cultivation of environmental design professionals with international perspectives and cross-cultural communication skills.

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