Journal of Contemporary Educational Research, 2026, Volume 10, Issue 8
http://ojs.bbwpublisher.com/index.php/JCER
Online ISSN: 2208-8474
Print ISSN: 2208-8466

Reform and Innovation in English Teaching for Non-English Major Graduate Students Oriented Towards Autonomous Learning

Haiyan Ding[1†], Dong Li[1†], Junfeng Zhu[2], Fenghui Lan[1], Shiyuan Chen[1]

[1]School of Information Science and Engineering, Yunnan University, Kunming 650091, China
[2]School of Software, Yunnan University, Kunming 650091, China
[†]These authors contributed equally to this work and shared first authorship.

Abstract: Graduate English teaching faces practical challenges such as compressed class hours, significant student proficiency differences, insufficient professional adaptability, and weak listening and speaking abilities. This paper takes the "English Comprehensive" course for professional master's students at the School of Information Science and Engineering, Yunnan University, as an example. Based on the theories of autonomous learning and dual-subject teaching, it explores an English teaching reform model focused on cultivating autonomous learning abilities. By constructing three-dimensional teaching resources, implementing online and offline blended teaching, and introducing AI intelligent grading technology, the model achieves a shift from "teacher-centered" to "student-centered" and an extension from "general English" to "academic English." Teaching practice shows that this model effectively enhances students' comprehensive English application abilities and autonomous learning abilities. The course evaluation score has increased from 94.63 to 98.37, and students have improved in foreign language output abilities and critical thinking.

Keywords: Graduate English teaching; Autonomous learning; Blended teaching; Dual teaching subjects

Online publication: August 31, 2026

1. Introduction

According to the National English Teaching Requirements for Master of Engineering Professional Degree Candidates (2006) and the National English Teaching Syllabus for Non-English Major Graduate Students issued by the Ministry of Education, the primary goal of public English teaching for graduate students is to improve reading and writing abilities, while also addressing listening, speaking, and translation skills in a comprehensive manner.

The specific teaching objectives are: to develop basic listening and speaking skills, relatively advanced reading comprehension abilities, and a certain level of translation and writing proficiency. This aims to meet the needs of graduate students in extensively consulting foreign literature and engaging in international

exchanges, while also laying a solid foundation for further English studies in the future.

However, against the backdrop of continuous graduate student enrollment expansion, graduate degree English teaching faces multiple challenges. For instance, students exhibit significant differences in English proficiency upon enrollment; some have already passed CET-6, or even TOEFL or IELTS, while others have poor reading and speaking skills. How to achieve the teaching goal of comprehensively improving English ability within limited time is an urgent problem that teaching reform needs to solve.

The School of Information Science at Yunnan University is the largest engineering school in the university, enrolling approximately 200 professional master's students annually. The public degree course "English Comprehensive" has a total of 36 class hours. The traditional teacher-centered lecture model, given the limited class hours, struggles to achieve the comprehensive development of listening, speaking, reading, writing, and translation skills. Therefore, exploring a teaching reform path centered on cultivating autonomous learning abilities is an inevitable choice to align with the development trends of educational informatization.

2. Theoretical foundations of autonomous learning and their implications for graduate English teaching

2.1. The connotation and elements of autonomous learning

Autonomous learning means making students the masters of their own learning. The key is cultivating students' abilities to analyze problems and practice hands-on skills. It has three major characteristics: self-reliance, self-action, and self-discipline. Heuristic teaching methods are adopted, focusing on innovative thinking and independent thought, allowing students to choose what to learn, how to learn, and to what extent. It is not an isolated learning behavior but a systematic learning capability.

From the perspective of cognitive psychology, autonomous learning involves three levels of self-regulation: metacognition, motivation, and behavior. It requires intrinsic drive in terms of motivation and the ability to choose the learning environment in terms of behavior. Graduate students generally possess strong metacognitive abilities and learning motivation, which provides a good foundation for this educational reform [1].

2.2. The dual-subject teaching theory: The relationship between teacher guidance and student agency

In the development process of autonomous learning theory, the perceived roles of teachers and students have evolved—gradually shifting from the "student-centered theory" to the "dual-subject theory." Practical teaching has revealed that solely emphasizing student agency can also lead to problems: some students cannot plan their own learning effectively, leading to confusion, while the teacher's role is weakened, and teaching quality declines accordingly.

Therefore, English teaching should implement the dual-subject approach—both teachers and students are subjects, cooperating with each other [1]. The core of the dual-subject concept is interaction and collaboration. Under this approach, the teacher is no longer just a "lecturer" but must become a designer of the learning environment, provider of resources, guide for learning, and evaluator of outcomes. This theory provides guiding significance for English teaching reform [2].

2.3. Constructing an autonomous learning environment

The effectiveness of autonomous learning heavily depends on the learning environment. To embody the dual-subject approach, constructing an autonomous learning environment requires considering three elements: the physical environment (classroom facilities, network platforms), the resource environment (learning materials, tools), and the humanistic environment (interaction between teachers and students, and among peers) [1].

The internet and AI large language models provide autonomous learning environments with abundant resources and choices, flexible learning time and space, and timely, diverse interaction. The difference between the traditional environment and this internet-based autonomous learning environment lies in the former being teacher-centered while the latter is student-centered; the former primarily relies on a single textbook, while the latter offers diverse resources; the former basically confines learning to the classroom, while the latter effectively connects in-class and out-of-class activities [2].

For graduate English teaching, constructing an ideal autonomous learning environment needs to address three key questions: How to establish effective learning monitoring and evaluation mechanisms? How to reconstruct resources to meet individual needs? How to maintain effective teacher-student interaction in the network environment? The answers to these questions constitute the core content of the teaching reform.

3. Current situation and pain points of professional master's English teaching at the School of Information Science

The School of Information Science offers majors such as Electronic Information, Artificial Intelligence, and Computer Technology. Through years of teaching practice and student analysis, teaching faces four major pain points:

3.1. Lack of professional adaptability in teaching content

Public English courses focus on General English (EGP), using textbooks primarily containing literary and social science articles, which are disconnected from students' professional backgrounds. Information science students need English proficiency for reading English literature, writing academic papers, and attending international conferences. However, current textbooks rarely contain professional corpora related to computer science or electronic information, leading to low student interest.

This issue is not an isolated case. A study from Guizhou University indicates that non-English major graduate students have a clear demand for English for Academic Purposes (EAP) courses, and shifting from General English to EAP is an inevitable direction for graduate English reform [3]. Practice at China University of Petroleum (East China) also confirms that EAP teaching needs to integrate professional knowledge content to effectively enhance students' academic English proficiency [4].

3.2. Single teaching model with insufficient interaction

The traditional English teaching model focuses on teacher lectures in the classroom, explaining vocabulary and analyzing texts based on textbook content, supplemented by after-class exercises. This model has three prominent problems:

First, limited class hours prevent balancing the multiple teaching objectives of listening, speaking, reading, and writing. Within 36 class hours, allocating time equally to the five dimensions of listening, speaking, reading, writing, and translation leaves less than 6 hours per dimension.

Second, there is minimal classroom interaction. In teacher-dominated classes, students are passive recipients. Question-answer exchanges involve only a few actively participating students, while most students remain "invisible" in the classroom.

Third, there is a lack of application of AI and digital teaching methods. Modern technologies like MOOCs and intelligent agents have not been fully utilized [5].

3.3. Weak listening and speaking abilities, poor output skills

As graduate student participation in international academic exchanges becomes common, insufficient English output ability has become a bottleneck constraining students' academic development. Science and engineering students typically exhibit a pattern of "acceptable reading and writing, but weak listening and speaking." They have obvious shortcomings in oral expression and written output. In terms of writing, difficulties arise with professional writing tasks such as academic paper abstracts and conference submissions, with common problems including Chinglish and unclear logic.

4. Overall design of the autonomous learning-oriented teaching reform

To address the above pain points, based on autonomous learning theory and dual-subject teaching theory, with the core goal of "cultivating autonomous learning abilities," a three-pronged teaching reform framework of "three-dimensional resources–blended teaching–intelligent evaluation" has been constructed.

The entire reform revolves around three stages: "pre-class–in-class–post-class":

(1) Regarding resource construction: Using Rain Classroom and self-built online courses, integrate various resources such as courseware, videos, audio, and professional corpora to provide students with three-dimensional learning materials.

(2) Regarding teaching implementation: Combine online and offline methods. Students learn independently before class. In-class activities use Rain Classroom functions like submission, bullet-screen comments, and lecture assistant features for interaction. Post-class assignments are assigned for reinforcement.

(3) Regarding evaluation and feedback: Introduce AI intelligent essay grading for instant scoring and comments [6]. Include online course performance (watching videos, accessing graphics and text materials, completing assignments, participating in discussions) in the final grade. Establish a system combining process-oriented assessment and a final exam.

5. Construction and implementation of the autonomous learning resource platform

5.1. How to construct three-dimensional teaching resources

Learning a foreign language, most importantly, requires creating a language environment for listening, speaking, reading, and writing. Based on this idea, our team built a Rain Classroom online course, integrating five types of teaching resources:

(1) Courseware Resources: Created PPTs for each unit, covering key vocabulary, grammar, and text analysis. Key words are accompanied by audio recordings read by the teacher. Students can listen and learn simultaneously during the preview, practicing listening and pronunciation passively.

(2) Video Resources: Using "Jianying" (CapCut), created read-aloud videos with English subtitles for text introductions, background knowledge, and the full text. This transforms static texts into dynamic

audio-visual materials, allowing students to watch and listen repeatedly, engaging eyes, ears, and brain. Research confirms that multimodal input helps enhance memory.

(3) Professional Corpora Resources: Selected English literature abstracts, conference reports, and other materials from fields like computer science, artificial intelligence, and electronic information to establish a professional English reading corpus. These materials extend the breadth and depth of classroom teaching.

(4) Interactive Exercise Resources: Used Rain Classroom to create interactive exercises like vocabulary self-tests, cloze tests, reading comprehension, and listening drills. Students can practice online, and the system automatically grades and provides feedback.

(5) Extended Learning Resources: Integrated links to high-quality domestic and international MOOCs, TED Talk videos, academic English writing guides, etc. Also recommended AI foreign language learning tools such as Doubao English chat partner and the iFlytek large language model [7,8].

5.2. SPOC-based blended teaching

Based on the self-built Rain Classroom online course, this course adopts a blended model of "pre-class preview–in-class deepening–post-class extension" [9].

5.2.1. Pre-class preview

The teacher publishes a preview task package on Rain Classroom, including vocabulary courseware, text introduction videos, text videos, and preview questions. Students must complete these within the specified time, and the system automatically records learning behavior. Preview tests count towards the usual performance grade, establishing a learning monitoring mechanism. Following the dual-subject approach, the teacher's role shifts from center stage to behind the scenes, guiding students' self-learning through task design [1].

5.2.2. In-class deepening

Classroom teaching proceeds through four stages: "pre-test–focused instruction–interaction–post-test."

(1) Pre-test: Conduct a short quiz at the beginning of class, such as reading comprehension or vocabulary, to check the effectiveness of the online preview. Quiz scores are displayed in real-time and also count towards the usual grade, providing students with appropriate "pressure." This design embodies the "monitoring the learning process" element of autonomous learning.

(2) Focused Instruction: The teacher no longer explains the entire text sentence by sentence but selects key word usages and complex long sentences for analysis. Addressing engineering students' need to read professional literature, the focus is on practicing "grasping subject-verb-object cores and tackling long, difficult sentences." The focused instruction stage primarily helps students master the method of "how to learn."

(3) Interaction: By placing vocabulary, discussions, assignments, and videos online, class time is freed up for interaction. For example, design discussion topics related to the unit theme: "Some say money is the source of happiness; others say it is the root of evil. What do you think?" Form groups of four for pro-con debate, then invite representatives to speak. The whole class can also share viewpoints via the submission function on Rain Classroom.

(4) Post-test: After completing a unit, conduct another reading or vocabulary test to gauge learning outcomes, facilitating subsequent teaching adjustments.

5.2.3. Post-class extension stage

Assign homework on Rain Classroom, including discussion questions, translation exercises, and writing assignments. Writing tasks are completed with the aid of AI software, where students receive a score and comments upon submission. The post-class extension stage also encourages students to form study groups and collaboratively complete small research projects, such as translating professional literature or creating academic posters.

6. Examination reform

The assessment reform for this course focuses on three core aspects: "application orientation," "process evaluation," and "technology empowerment" [3]. In terms of assessment philosophy, the shift is from a traditional emphasis on language knowledge points (vocabulary/grammar) to emphasizing academic language application skills (writing, speaking, critical reading), increasing the proportion of process-oriented evaluation. The final exam is conducted online using Rain Classroom. The final grade composition is: Online Course (10%) + Speech Video (10%) + Assignments (20%) + Classroom Performance (10%) + Online Exam (50%).

7. Conclusion

In graduate English course design, connecting English teaching with academic disciplines and focusing on enhancing professional competence [10], three years of teaching practice have yielded positive changes in course outcomes. Students' oral fluency and accuracy have improved, their writing and translation abilities have been enhanced, and they can use English to express professional knowledge and academic research findings in computer science.

The course evaluation score increased from 94.63 before the reform to 98.37. Technology is a means; education is the essence. The synergy among teachers, students, and technology is necessary to maximize the improvement of graduate students' academic English abilities and facilitate international research communication.

Funding

Graduate Education Management Research Project (Key Project) of the Yunnan Provincial Society for Graduate Education and Research

Disclosure statement

The authors declare no conflict of interest.

References

[1] Wang H, 2004, A Study on Autonomous English Learning Teaching Theory and its Implementation in Network Environment, thesis, Dalian University of Technology.

[2] Liu W, 2004, Discussion on the Model of Autonomous Learning and Network Environment Teaching for Graduate English. Academic Degrees & Graduate Education, (1): 33–36.

[3] Zhang L, Zhang C, 2025, Cultivating Academic English Ability and Constructing a Graduate English Curriculum System: A Case Study of Guizhou University. Education and Research, 7(4): 262–266.

[4] Sun Y, 2024, Exploring a Blended Teaching Model for Graduate Academic English Based on Semantic Wave Theory. Overseas English, (21): 5.

[5] School of Foreign Languages, Jilin Agricultural University, 2022, The Model of New Foreign Language Cloud Teaching Led by Agricultural Academic English Quality Courses, May 10, 2022, https://waiyu.jlau.edu.cn/info/1040/1772.htm

[6] Li Y, 2025, Using Generative AI for Smart Teaching of Essay Writing, Foreign Language Education and Assessment Research Center, Luoyang Normal University.

[7] Ding H, 2017, Concise Course in Practical Computer English, Beijing: Tsinghua University Press.

[8] Ding H, 2023, Concise Course in Practical Computer English (Second Edition), Beijing: Tsinghua University Press.

[9] Liu W, 2024, A Study on the Graduate English Teaching Model Based on "SPOC + Digital Teaching Resource Platform." University, (5): 45–52.

[10] Chu T, Yuan W, 2016, Exploring New Approaches to Graduate English Teaching. Journal of University of Shanghai for Science and Technology (Social Sciences Edition), 38(3): 206–209.