

A Study of Practical Approaches for Teaching Ideology and Politics in English Courses at Universities of Science and Engineering Based on the POA-BOPPPS Model

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Abstract: Currently, course-based ideological and political education is a concept that has been widely discussed in China's academia. However, implementing this concept in actual course practice proves quite challenging. This paper explores practical approaches to integrating ideological and political education into English teaching at a science and engineering university through a detailed case analysis. In practice, we employ a mixed-methods approach combining POA (Production-Oriented Approach) and BOPPPS (Bridge-in, objective, pre-test, participatory learning, post-test, and summary) instructional models, so as to create a seamless integration of English learning and ideological and political education. The study finds: 1) The dual theoretical framework effectively corresponds to the characteristics of science and engineering students, who widely embrace digital tools but have limited intercultural communication awareness; 2) There are limitations in interdisciplinary collaboration, the grading burden created by the multi-dimensional assessment approach, and the long-term mechanism establishment. Future advancements should therefore focus on transdisciplinary partnerships with the School of Management, worldwide communication routes, technological empowerment, and long-term behavioral change tracking systems. By offering a reproducible methodology for teaching ideology and politics in college English courses that specifically caters to the demands of scientific and engineering students, this work was a rewarding attempt.

Keywords: English teaching, Ideological and political education, Case analysis, Science and Engineering Universities, POA-BOPPPS model.

1. Introduction

In 2020, the Ministry of Education of the People's Republic of China issued the “*Guidelines for Ideological and Political Education in Higher Education Courses*,” explicitly emphasizing the comprehensive integration of ideological and political education into all courses. It was noted that providing “ideological and political education in courses” is a responsibility that all teachers are expected to fulfill. Over these years, incorporating ideological and political education into foreign language instruction has become a significant focus in China's higher education reform. English language courses are a vital part of general education in universities. They are responsible for enhancing students' comprehensive language application skills as well as fostering their cultural awareness, intercultural communication skills, and ability to think clearly.

In the setting, science and engineering universities demonstrate unique characteristics and challenges for this educational integration. Students in these institutions are at the forefront of digital transformation and must gain proficiency in essential technologies while continuously adapting to rapidly changing digital tools and technological ecosystems (Liu, X., Wang, J., & Luo, Y., 2025). Admittedly, students in science and engineering often encounter more frequent changes in digital tools. They typically have digital literacy but may have less awareness of cross-cultural differences. Moreover, previous approaches to ideological and political education in English courses have often been characterized by shallow and ineffective integration. In these cases, political and ideological elements are added to language content in an artificial manner rather than naturally

embedded within the teaching design.

Therefore, this paper describes a thorough case analysis of a novel method for ideological and political education within an English course at a science and engineering university. The research examines Unit 2, titled “*Loving Parents, Loving Children*,” from the textbook of *the fourth edition of New Horizon College English Reading and Writing Course 1*. The unit explores parent-child relationships through various texts and activities, creating a suitable platform for discussing Chinese family values, filial piety, and their contemporary interpretations. In this research, we aim to address three key questions:

- 1) How can the teaching of English to science and engineering students naturally incorporate ideological and political education?
- 2) What instructional models and digital tools are most effective in accomplishing this integration?
- 3) What limitations exist in current approaches, and how can they be improved?

By examining these questions through a specific case analysis, this paper contributes to a new perspective and novel approaches to ideological and political education in English teaching, particularly in the setting of science and engineering universities.

2. Literature Review

The concept of ideological and political education in English

teaching has undergone significant evolution over the years. Early approaches often involved incorporating traditional cultural thought, national policies, and current political hot topics (Yang Jing, 2020), transmitting Chinese culture and enhancing the narrative around China (Yang Jincai, 2020) to promote ideological and political integration. Currently, more researchers have turned to new dimensions. According to Cai, J.G. (2021), college English is a course aimed at enhancing students' English proficiency. College English instructors should subtly integrate moral education through their selection of teaching materials, fostering students' sense of social responsibility, academic integrity, and scientific ethics. Additionally, researchers like Ruan, X. L., & Yang, X. Y. (2024) conducted a thorough review of how ideological and political education is integrated into curriculum development in China, along with a specific example of English as a Foreign Language (EFL) teaching.

Scholars have proposed various frameworks and pedagogical models for the integration. Wen Qifang (2018) introduced the concept of "whole-person education" in foreign language teaching within the production-oriented approach (POA), emphasizing the integration of language production and ideological cultivation. Similarly, Quo Haipeng and Huang Kuangzhong (2020) described the philosophy of whole-person education as emphasizing a people-centered approach. This philosophy aims to cultivate well-rounded individuals with a broad education, referred to as "whole persons." They concentrated on how experiential learning is applied in university courses, pointing it out as the primary teaching method in whole-person education. Moreover, Fang Jie (2024) proposed a "three-dimensional integration model" that combines value connotation, theoretical mechanisms, and teaching practices to examine conjugated cultivation of national consciousness and international perspective in university English courses.

Apart from the POA approach, more recent studies have explored various pedagogical models for integrating ideological and political education into English teaching. The BOPPPS model (Bridge-in, objective, pre-assessment, participatory learning, post-assessment, and summary), which was created for instructional design with an emphasis on student engagement and interaction, has been applied to frequent pedagogical attempts in embedding ideological and political elements into all phases of English courses (Zeng, D., 2024; Ami Hao, 2025). Further, digital technologies have also played an increasingly important role in the new era. To examine the impact of the use of digital interactive information technologies in Chinese political education, researcher Chen H. (2024) proved that both Chinese and foreign students who received political education using digital interactive information technologies turned out to be significantly more active in civilian life. In the realm of digital technology, using digital tools for political and ideological education can be effective and more engaging in university courses.

Despite these advances, several limitations remain in the literature. First, there is a lack of research that specifically focuses on the needs of science and engineering students regarding ideological and political education in the context of English teaching. Second, although different teaching models

have been proposed, there is insufficient empirical evidence regarding their effectiveness, especially through comprehensive case studies. Therefore, this paper seeks to address these challenges through a detailed case analysis of a novel approach to ideological and political education in an English course at a science and engineering university. This mixed method integrates the POA approach with the BOPPPS model in a specific case analysis to combine English language learning with ideological and political education effectively.

3. Methodology

3.1 Research Design

This research employs a qualitative case analysis approach to investigate the application of a new ideological and political education model in an English course at a science and engineering university. The case analysis focuses on a specific unit, that is, Unit 2 "*Loving Parents, Loving Children*" from the textbook *New Horizon College English (Fourth edition) Course 1*, taught over four class periods to first-year non-English majors.

This unit employs a blended model integrating the POA and BOPPPS teaching frameworks, so as to enhance both language proficiency and ideological understanding through a three-step process: "Motivate-facilitate-evaluate." By exploring the theme "Children and parental Love," the unit introduces relevant contexts, challenges, and solutions to help develop students' family values. Through comparative analysis of Eastern and Western approaches to parent-child relationships, as well as the similarities and differences in expressing parental love, one can foster gratitude, cultural confidence, a sense of patriotism, and critical thinking skills. During course implementation, the previously mentioned ideological and political education tasks are decomposed into three phases: motivation, facilitation, and evaluation. Employing pre-class "deliberate design," in-class "organic integration," and post-class "effective practice," this approach creates a smooth connection between ideological education and university English instruction.

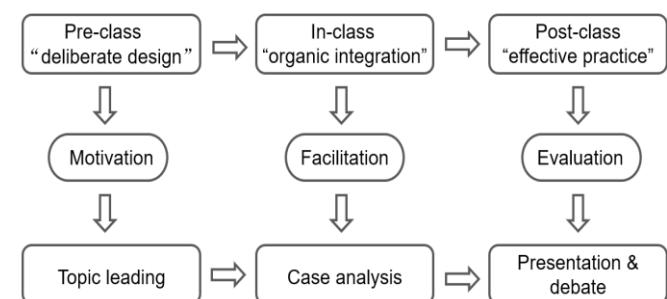


Figure 1: An approach for incorporating ideological and political education

3.2 Participants

The study involved 69 first-year undergraduate students (59 males, 10 females) from various science and engineering disciplines at a key provincial university in China. All participants were non-English majors aged 18-19 years old. Their English proficiency levels were assessed as intermediate based on a placement test organized at the beginning of the semester.

4. Case Analysis

4.1 Course Context and Student Characteristics

The case analysis was conducted in a first-year College English course at a key provincial university that specializes in science and engineering disciplines. The university focuses on emerging engineering disciplines and applied research, with the aim of developing high-quality individuals who possess professional knowledge, innovative spirit, and practical skills. The 69 students participated in the course, containing different majors in science and engineering, such as electrical engineering and automation, electronic information engineering, optoelectronic information science and engineering, and communication engineering. They widely embraced digital tools, but showed limited understanding of Western family values and even less systematic knowledge of Chinese family traditions in the global context.

4.2 Instructional Design and Implementation

The unit was conducted over four class periods (45 minutes each) following the POA-BOPPPS hybrid model. Details of the implementation process are below:

4.2.1 Pre-class motivation stage

The purpose of the pre-class stage was to engage students' prior knowledge and encourage them to think critically about parent-child relationships. The primary tasks involved were: watching a segment from the CCTV documentary "*Family tradition inheritance*" and analyzing three cases of "generational conflict", filling out a questionnaire titled "My communication frequency with parents," identifying ten English phrases expressing "emotional conflict" from the textbook and additional resources, and being notified about the final tasks for the unit, which include writing a letter in English to their parents, participating in a debate, and producing a vlog about their university experience.

4.2.2 In-class facilitation stage

The in-class stage was divided into three phases, each integrating language learning with ideological and political education:

Phase 1: Cultural decoding and emotional motivation (45 minutes)

We conducted a series of activities to decode the cultural elements in this unit and attempted to motivate students' relevant emotions. Firstly, it's about a bridge-in activity. The English animated version of "*A time to remember*," based on the poem "*Song of the parting son*," was presented. Secondly, course objectives were introduced respectively: language knowledge, ideological and political objectives, and skill development. Thirdly, a participatory learning activity was performed. Students conducted a comparative analysis of English texts from Kahlil Gibran's "*On children*," an American poem, and a segment of "*Fu Lei's family letters*," a Chinese text. They identified the differences in parent-child relationships in Western and Chinese cultures.

Phase 2: Text analysis and value clarification (90 minutes)

This phase contains four parts. Specifically, we first conducted a text structure analysis. The instructor guided students through an analysis of the narrative structure of the main text "*A child's clutter awaits an adult's return*," identifying the problem-solution pattern and the mother's emotional journey in order (Denial, relief, compensatory cleaning, emotional impact, cognitive reconstruction, and elevated expectations). Then, we focused on language points. Students were supposed to practice using verbs related to cleaning and organizing, connecting the language practice to reflections on their own behaviors and responsibilities. Next, the text was analyzed in depth. For instance, a key sentence from the text "*We gave you life, but we can't live it for you*," was examined at linguistic, cultural, and value levels.

Phase 3: Value internalization and ideological output (45 minutes)

In this phase, activities were conducted from internalizing relevant values to outputting ideologies. First, we visually explored Chinese wisdom. The instructor introduced President Xi's saying, "Family is the basic cell of society," in both Chinese and English. Students then created "Family-nation circles. Second, a critical debate was arranged to enhance students' understanding of the theme. Students engaged themselves in a 4C (Critical thinking, communication, collaboration, and creativity) debate on the topic "*Should parents completely let go when children turn 18?*" Third, a post-test was implemented to check students' expression of love and gratitude. Students wrote English letters to their parents using a template with sentence banks. Finally, in the summary section, the class concluded with a collective singing of an adapted version of "You raise me up," with the lyrics modified to include filial piety elements.

4.2.3 Post-class evaluation stage

The post-class stage focused on extending English learning beyond the classroom and evaluating outcomes. Firstly, we required students to produce a vlog video. Students created personal vlogs titled "My day as a university student" to share with their parents, demonstrating digital filial piety in the modern age. Then came the three-dimensional evaluation: 1) Implement one commitment from their letters (e.g., weekly video calls) and record a "21-day gratitude check-in" vlog. 2) Organize "Silver-haired digital classroom" activities, teaching elderly community members to use smartphones for communication. 3) These activities were converted into course credits, forming a "cognition-emotion-behavior" closed loop.

4.3 Assessment Strategies

The assessment approach was multi-dimensional, evaluating language proficiency, ideological understanding, and behavioral intentions. Specifically, the first is about formative assessment. Continuous evaluation went through classroom participation, online task completion, and peer feedback. And then we conducted a summative assessment. Evaluation of final products (words, letters, debate performance, vlogs)

using detailed rubrics, including self-assessment and peer assessment. Finally, we implemented long-term tracking. Specifically, the “21-day gratitude check-in” vlogs provided longitudinal data on behavioral changes.

5. Research Findings

5.1 Effectiveness of the POA-BOPPPS Hybrid Model

The use of the POA-BOPPPS hybrid model proved highly effective for integrating ideological and political education into English teaching for students in science and engineering fields. The analysis of classroom observation data revealed several key findings: 1) Organized learning process: The well-defined three-stage structure (motivation, facilitation, evaluation) offered a systematic approach that aligned with the logical organization preferred by science and engineering students. 2) Seamless integration: The model effectively eliminated the “add-on” method of ideological education. Instead, ideological elements arose naturally from language activities and cultural comparisons. 3) Enhanced engagement: The model considerably improved student engagement compared to conventional teaching methods.

5.2 Impact on Language Learning

The instructional innovation had a positive impact on students' language proficiency, particularly in areas relevant to the unit theme. First, students' mastery of emotion-related vocabulary and problem-solution-pattern narrative structure developed effectively. Analysis of students' letter writing revealed a more sophisticated use of these terms and structure in context. Second, the comparative analysis of Chinese and Western family values enhanced students' ability to discuss cultural differences in English. Additionally, the debate activity significantly improved students' ability to construct arguments and counterarguments in English critically.

5.3 Ideological and Political Education Results

The novel approach achieved obvious outcomes in terms of ideological and political education. First, students' family relationships, especially the relationship between young students and their parents, had improved. Second, students' sense of social responsibility had been extended and practiced by the “Silver-haired digital classroom” activity. Moreover, students' long-term behavioral changes had been sustained through “21-day gratitude check-in” vlogs.

5.4 Digital Tool Effectiveness

The digital tools integrated into the instructional process proved highly effective and important. First, we used the U-campus platform for pre-class tasks, resource sharing, and AI-powered assessments. The platform's learning analysis provided real-time data on student engagement and progress. Additionally, we employed various multimedia resources. Carefully selected videos like CGTN reports, animated poems, and documentaries provided rich cultural content and multiple perspectives on family values.

6. Discussion

6.1 Implication

On the one hand, this case analysis makes several theoretical contributions to the field of ideological and political education in English teaching. First, the study provided case evidence for the effectiveness of combining POA and BOPPPS models for ideological and political education in English teaching. Second, we demonstrated how digital tools can be integrated to enhance ideological and political education without overshadowing language learning objectives. Third, the study validated the effectiveness of structured cultural comparison as a means of developing cultural confidence. By systematically comparing Chinese and Western family values, students gained a deeper understanding of their own cultural traditions while developing intercultural communication skills.

On the other hand, the findings also have several important practical implications. First, the case analysis provided a detailed model for designing English courses that integrate ideological and political education in a manner that resonates with science and engineering students. The structured approach with clear stages and digital integration can be adapted for other units and courses. Second, we demonstrated the importance of carefully selected multimedia resources for ideological and political education. The specific videos, texts, and digital tools used in this case can serve as models for resource development in other contexts.

6.2 Reflection

Despite the overall success, the study still faced several challenges. First, we found it difficult to complete all activities within the allocated time. Besides, the multi-dimensional assessment approach created a significant grading burden for the instructor, as the detailed evaluation of debates, letters, and vlogs required approximately long hours of grading time beyond normal teaching duties. Further, the range of English proficiency levels in the class made some activities challenging for lower-level students. For instance, some students struggled to express complex ideas in English during the debate.

Therefore, based on the above findings and limitations, several directions for further research emerge. First, due to the time limit, future research should track students over longer periods to assess the lasting impact of educational interventions on their values, behaviors, and language proficiency. Second, collaborations between English departments and other disciplines (e.g., management, sociology) to develop more comprehensive approaches to ideological and political education.

7. Conclusion

This case analysis demonstrates the effectiveness of a novel approach to integrating ideological and political education into English teaching for science and engineering students. The POA-BOPPPS hybrid model, combined with digital tool integration and multi-dimensional assessment, successfully addresses the characteristics of science and engineering students while achieving both language learning and ideological education objectives.

The findings show enhanced language proficiency, particularly in emotional expression and cross-cultural communication, along with facilitated cultural confidence, family values, and social responsibility. Despite challenges related to time constraints, assessment complexity, and language proficiency differences, the study provides a valuable model for natural, effective, and engaging approaches to ideological and political education.

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