

Ideological and Political Education in Online and Offline Blended Courses in College English: Innovative Design and Empirical Evidence of Multimodal Interaction

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Abstract:

To address the challenges of single interactive formats, rigid integration of ideological and political education, and vague evaluation of effectiveness in ideological and political education in college English courses, this study constructs a “three-dimensional and five-dimensional” multimodal interactive system for ideological and political education in a blended online and offline college English curriculum, based on multimodal discourse theory and constructivist learning theory. A 17-week teaching experiment was conducted with 134 students from three non-English major classes in the 2024 cohort. The effectiveness was verified through a variety of methods, including questionnaires, in-depth interviews, classroom observation, and performance analysis. Results show that the interactive system significantly improves students’ comprehensive English application skills, ideological and political literacy, and learning participation. The organic integration of multimodal interactive formats and ideological and political elements effectively resolves the separation between knowledge transmission and value guidance. This research provides an operable teaching paradigm and empirical evidence for the high-quality implementation of ideological and political education in college English courses.

Keywords:

College English, Ideological and Political Education in Curriculum, Blended Learning, Multimodal Interaction, Empirical Evaluation of Effectiveness

1. Introduction

The Guiding Outline for the Construction of Ideological and Political Education in Higher Education Courses issued by the Ministry of Education in 2020 clearly points out that public basic courses are a key area for the construction of ideological and political education in courses, and it is necessary to strengthen value guidance and

improve the effectiveness of education. College English, as one of the public basic courses with the widest coverage and longest class hours, possesses both instrumental and humanistic attributes. Its cross-cultural communication characteristics make it a natural carrier for ideological and political education. However, current college English courses still face many practical difficulties in ideological and political education: First, the teaching model is rigid, with some teachers still using a simple combination of “offline lectures + online videos” to conduct blended teaching. Interactive sessions are merely formalities, and students passively receive knowledge, making it difficult to internalize values. Second, the integration of ideological and political education is disconnected, with ideological and political elements often embedded as “additional questions” in teaching, lacking organic integration with language knowledge and skills training. Third, the evaluation system is singular, focusing primarily on language scores as the core indicator, neglecting the consideration of students’ ideological and political literacy and comprehensive abilities.

Meanwhile, in college English teaching, traditional teaching methods face the problems of insufficient student participation and difficulty in significantly improving learning outcomes. The introduction of multimodal intelligent interactive technology offers a possibility for solving these challenges. [3] The rapid development of multimodal technology has provided a new path for the innovation of ideological and political education in courses. Multimodal interaction emphasizes the synergistic effect of various symbolic resources such as language, images, audio, video, and body movements to construct a three-dimensional teaching scenario and stimulate students’ cognitive participation and emotional resonance. Integrating multimodal interaction into the ideological and political education of blended online and offline college English courses can not only meet the learning characteristics of students in the context of “Internet + Education,” but also make ideological and political elements permeate the entire language learning process more naturally and vividly through the synergistic effect of multiple symbols. Based on this, this study focuses on “multimodal interaction” as the core entry point to explore the innovative design and implementation effect of ideological and political education in blended online and offline college English courses, providing new ideas for solving the current teaching dilemma.

The study has its theoretical significance and practical significance. For its theoretical significance, this study combines multimodal discourse theory with constructivist learning theory to construct a blended multimodal interactive system suitable for integrating ideological and political education into college English courses. This enriches the interdisciplinary research on ideological and political education and multimodal teaching, providing a new perspective for the practical application of related theories. For its practical significance, through specific instructional design and empirical research, a closed-loop teaching model of “online pre-learning—offline deepening—online extension” is formed. The selection criteria for multimodal resources and the design methods for interactive activities are clarified, providing college English teachers with replicable and scalable teaching solutions. Simultaneously, a diversified evaluation system is established, providing practical reference for the scientific evaluation of the effectiveness of ideological and political education in courses, and contributing to the improvement of the quality of college English education.

This study focuses on the following three core questions: What core elements and implementation paths should be included in the online and offline blended learning system for college English based on multimodal interaction? Does this teaching system significantly improve students' comprehensive English application ability, ideological and political literacy, and learning participation? How well do students and teachers accept and are satisfied with this teaching system, and what room for improvement exists?

2. Literature Review

To clarify the research foundation, practical dilemmas, and potential gaps related to ideological and political education in college English blended teaching, this section systematically combs through existing studies in three core thematic domains, following a logical path of single-domain progress analysis to cross-domain gap identification. Specifically, the current research is sorted out on the integration of ideological and political education into college English teaching, focusing on the exploration of ideological and political elements, teaching model innovation, and effectiveness evaluation systems, while examining their limitations in blended teaching scenarios. Second, the application of blended learning in college English is reviewed, with its platform construction, teaching process optimization, and the insufficient synergy between online-offline interaction and value guidance analyzed. Third, the theoretical basis and practical applications of multimodal interaction in language teaching are summarized, especially its underdeveloped integration with ideological and political education. Through organizing information in this way, this paper aims to help readers understand the current state of relevant research, assess the rationality of subsequent research design, and lay a foundation for identifying the research gaps addressed in this study.

2.1. Research on the Integration of Ideological and Political Education in College English Teaching

Domestic research on ideological and political education in college English courses began in 2017 and has seen explosive growth in recent years. Existing research mainly focuses on three directions: First, the exploration and integration of ideological and political elements. For example, Ye Chunlei proposed that to ensure the reasonable application of ideological and political elements, a relatively rich resource database needs to be built, including collecting resources of excellent traditional Chinese culture, organizing rich multicultural content, integrating ideological and political resources of ideals and beliefs, and skillfully exploring thematic resources in textbooks. [12] Second, the innovation of teaching models. For example, Yang Furong explored a blended teaching model, adopting a teaching model of “offline self-directed learning and task-driven learning” + “online discussion and problem-oriented learning” + “offline reflection and review and consolidation,” enriching students' learning methods and thinking, and prompting students to learn more actively. [11] Third, the evaluation of teaching effectiveness. For example, Zhao Juan and Zhao Nannan pointed out the need to construct a multi-dimensional evaluation system framework that integrates teacher and student evaluation, peer evaluation, student-to-student evaluation, supervisory evaluation, and social evaluation. Finally, the evaluation system is improved by scientifically and objectively analyzing and collecting evaluation data. However, empirical research remains insufficient. [14]

Existing research has clearly established the feasibility and necessity of integrating ideological and political education into college English courses, but limitations remain: most studies focus on a single teaching model, paying insufficient attention to how online and offline methods can collaboratively achieve ideological and political education in blended learning; furthermore, the design of interactive activities is rather general, lacking specific operational plans that incorporate multimodal technologies, making it difficult to meet the diverse learning needs of students.

2.2. Research on the Application of Blended Learning in College English

“Blended learning” is a modern educational model that fully integrates traditional classroom teaching with internet-based teaching, serving as an extension and expansion of traditional teaching.[10] Blended learning emphasizes the organic integration of “online self-directed learning” and “offline collaborative learning,” with its core being a student-centered teaching philosophy. In college English teaching, the application research of blended learning mainly focuses on three aspects. First, platform and resource construction. By establishing smart teaching platforms, such as online teaching, cloud classrooms, and DingTalk classrooms, the limitations of time and space can be overcome, significantly improving teaching efficiency and providing strong support for realizing an integrated online and offline education model, which is of great significance. [2] Digital empowerment not only strengthens students’ main role in English teaching but also, through digital technology, can cultivate students’ English learning ability, thinking ability, and subject literacy in a targeted manner, thereby strengthening knowledge internalization and practical application, and ultimately achieving the goal of optimizing English teaching. [8] Second, optimization of the teaching process, such as constructing a three-stage teaching process of “pre-class preparation—in-class implementation—post-class activities” to improve learning efficiency. [9] Third, comparative studies of effects. Research has confirmed that blended learning largely meets students’ diverse learning needs compared to traditional teaching. [15]

However, existing research has significant shortcomings. First, the synergy between online and offline interaction is insufficient, often manifesting as a one-way transmission model of “online tasks + offline checks,” lacking in-depth interaction. Second, blended learning is rarely combined with ideological and political education in courses, failing to fully leverage its role in value guidance.

2.3. Research on Multimodal Interaction and Language Teaching

Multimodal discourse theory, proposed by Kress & van Leeuwen, argues that language is only a part of the social symbol system, and that non-linguistic symbols such as images, audio, and video work synergistically with linguistic symbols to jointly construct meaning. [4] Multimodality refers to the use of multiple senses such as hearing, vision, and touch, through various means and symbolic resources such as language, images, sounds, and actions to communicate. [13] In language teaching, research on multimodal interaction mainly includes: first, the selection and application of multimodal resources, such as multimedia technology, artificial intelligence, and VR resources that can simulate real language scenarios. [5] Second, the innovation of interaction models, such as stimulating students' enthusiasm for participation through online learning platforms, group discussions, debates, and scenario simulations. [14] And third, the impact on learning outcomes. Research shows that multimodal teaching models not only enhance the attractiveness and effectiveness of teaching but also

effectively conduct value education and cultivate cultural confidence while improving students' language skills. [1]

Research on applying multimodal interaction to ideological and political education in courses is still in its early stages. Existing research mostly focuses on the ideological and political effects of single modalities (such as video), lacking a systematic design for the collaborative interaction of multimodal resources in blended learning, and also lacking large-sample, long-term empirical support.

2.4. Literature Review and Research Focus

Existing research reveals significant gaps in the interdisciplinary research of ideological and political education, blended learning, and multimodal interaction in college English courses. First, there is a lack of a systematic framework that uses multimodal interaction as a core link to connect online and offline blended learning with ideological and political education; second, empirical research is insufficient, with evaluations of teaching effectiveness largely remaining qualitative descriptions, lacking a scientific analysis combining quantitative and qualitative approaches; and third, instructional design lacks operability, failing to clearly define specific methods for selecting multimodal resources, designing interactive activities, and integrating ideological and political elements. Based on this, this study will construct a multimodal interactive teaching system, verify its effectiveness through teaching experiments, and fill the gaps in existing research.

3. Theoretical Basis and Research Design

This section clarifies the core elements supporting the implementation of this study, including the theoretical frameworks guiding the teaching system design, the selection of research subjects, the combination of research methods, and the application of research tools. These contents are designed to ensure the scientificity, operability, and validity of the study, helping readers understand the logical basis of the research design and assess whether the subsequent empirical conclusions are sufficiently supported. Specifically, the three theoretical foundations are first elaborated that underpin the construction of the multimodal interactive ideological and political teaching system; then the selection criteria and comparability of research subjects is introduced. The combined research methods adopted to comprehensively collect and analyze data are subsequently detailed. And the tools supporting online-offline teaching, observation, and evaluation are finally presented.

3.1. Theoretical Basis

The first adopted theory is Multimodal Discourse Theory, which posits that the construction of meaning in discourse relies on the synergistic effect of multiple modalities, including language, visual, auditory, and tactile. Different modalities possess unique meaning potential, and their complementary enhancement can achieve optimal communication effects. [4] In ideological and political education, language modalities, such as texts and dialogues can convey core viewpoints, visual modalities, such as pictures and charts can enhance intuitive perception, auditory modalities, such as revolutionary songs and audio lectures can evoke emotional resonance, and interactive modalities, such as group collaboration and online voting can promote value internalization. Based on this theory, this study designs multimodal interactive activities to allow ideological and political elements to permeate language learning through diverse symbols, avoiding rigid didacticism.

The second adopted theory is Constructivist Learning Theory, which emphasizes that knowledge is actively constructed by learners in specific contexts through interaction with others and the environment, rather than passively received. [6] Blended learning provides an ideal setting for constructivist practice. Online platforms offer resources to support students' autonomous knowledge construction, while offline classrooms create conditions for students to deepen their understanding through collaborative interaction. This study integrates ideological and political elements into online and offline interactive tasks, guiding students to actively perceive, reflect upon, and internalize ideological and political values while completing language learning tasks, thus achieving the unity of knowledge construction and value construction.

The third theory is Collaborative Education Theory. Collaborative education is an innovative educational concept proposed in the field of higher education in the new era. It emphasizes building a multi-party participatory and collaborative educational community by integrating resources inside and outside the school to achieve the educational goal of students' all-round development [7]. In this study, collaborative education is reflected in three levels: first, the synergy between online and offline teaching to achieve a closed loop of “pre-learning—deepening—expansion”; second, the synergy of multimodal resources to enhance the effect of ideological and political education through the complementarity of different symbolic resources; and third, the synergy between language teaching and ideological and political education to achieve the unity of instrumental and humanistic aspects.

3.2. Research Subjects

By using cluster sampling, three classes of non-English major students from a local undergraduate university in 2024 were selected as research subjects, including an experimental class of 50 students and a control class of 84 students. All three classes were taught by the same teacher and used the same textbook (New Edition of Comprehensive College English Course 1). There were no significant differences in their entrance English scores, making them comparable.

3.3. Research Methods

The first method is Action Research Method. It follows the action research cycle of “planning-implementation-observation-reflection,” a 17-week teaching experiment was conducted. It is divided into 3 phases. Phase 1 (weeks 1-2) is to develop a teaching plan and multimodal resources. Phase 2 (weeks 3-14) is to implement the teaching plan and collecting feedback through classroom observation and online data monitoring. Phase 3 (weeks 15-17) is to summarize and reflecting, and optimizing the teaching system.

The second method is Questionnaire Survey Method. Referring to relevant scales, a self-developed questionnaire, “Questionnaire on the Effectiveness of Multimodal Interactive Teaching of Ideological and Political Education in College English Courses,” was created. It covers four dimensions, including Improvement of English Proficiency, Cultivation of Ideological and Political Literacy, Learning Participation, and Teaching Satisfaction, consisting of 25 questions. A 5-point Likert scale (1=strongly disagree, 5=strongly agree) was used. Pre-survey results showed a good reliability and validity. The questionnaire was distributed to students in both classes before the experiment (pre-test) and after the experiment (post-test). 137 valid

questionnaires were collected before the experiment, and 137 valid questionnaires were collected after the experiment.

The third method is In-depth Interview Method. After the experiment, 12 students (4 high, 4 medium, and 4 low-achieving students) from the experimental class and 24 students from the control class were selected for semi-structured interviews. The interviews focused on questions themed as Experience of Multimodal Interaction, Perception of Ideological and Political Elements, and Suggestions for Teaching Improvement. Each interview lasted 30-40 minutes, and the recordings were transcribed into text for coding analysis.

The fourth method is Data Analysis Method. The quantitative information obtained from the questionnaire survey will be systematically statistically summarized to analyze the overall trends and group differences across different dimensions. Qualitative materials such as in-depth interview texts and classroom observation records will be thematically coded and their core viewpoints extracted. Through a comprehensive analysis approach combining quantitative trend verification and qualitative feedback, the effectiveness of the teaching system will be objectively verified, providing solid support for the research conclusions.

3.4. Research Tools

The first tool is online teaching platform. The SuperStarLearn platform will be used to build a course space, upload multimodal resources (videos, audio, text, etc.), conduct online interactions (discussions, voting, quizzes, etc.), and record student learning data.

The second is offline teaching tools. Smart classroom equipment, such as interactive blackboard, projection screen, group discussion terminals, will be used to assist in conducting multimodal interactive activities. Classroom observation record forms will be used to record student participation.

The third is evaluation tools. It is needed to develop an English comprehensive ability test paper, with consistent difficulty between the pre-test and post-test, and meeting the requirements for reliability and validity, covering four modules, including listening, reading, writing, and translation. In addition, it is also needed to develop an evaluation scale for ideological and political literacy, assessing from three dimensions, including cultural confidence, social responsibility, and moral cultivation.

4. Innovative Design of a Multimodal Interactive Teaching System for Ideological and Political Education in College English Blended Courses

Based on theoretical foundations and teaching practice, this study constructs a three-dimensional and five-dimensional multimodal interactive teaching system. The three dimensions refer to the blended teaching structure of “online pre-learning dimension—offline deepening dimension—online extension dimension,” while the five dimensions refer to the multimodal collaborative system of “language modality—visual modality—auditory modality—interactive modality—emotional modality.” These two aspects are integrated to form a closed-loop teaching model of “goal-oriented—resource-supported—activity-driven—evaluation and feedback.” The innovative design of the multimodal interactive teaching system for ideological and political education in college English blended courses is based on multimodal

discourse theory, constructivist learning theory, and collaborative education theory. It combines the thematic features and teaching content of Unit 4 themed as Meeting People Who Have Touched China in The New Edition of College Advanced English Comprehensive Course (Second Edition) 1, to construct the three-dimensional and five-dimensional multimodal interactive teaching system. Using the stories of figures who have touched China as the core carrier, it aims to achieve the unified goals of language ability cultivation, ideological and political value guidance, and learning ability enhancement.

4.1. Teaching Objectives Design for Synergistic Unity of Three-Dimensional Objectives

In line with the core theme of this unit, namely paying tribute to role models of the times and inheriting spiritual strength, and closely adhering to the textbook text, the deeds of the figures, and the requirements of ideological and political education in the curriculum, a synergistic and unified three-dimensional teaching objective is designed.

The first one is language proficiency objectives, which require students to master the core vocabulary, such as devotion, persistence, innovation, dedication, etc. and narrative logic of biographical texts. Students should be able to use past and perfect tenses to describe the experiences of figures and be able to understand English reports and interviews related to the deeds of these figures. Additionally, they need to be able to write short English biographies or express their opinions.

The second one is ideological and political literacy objectives. Through learning about the perseverance and dedication of figures such as Ye Jiaying, Fan Jinshi, Chang Shuhong, Zhan Tianyou, Mao Xianglin, Gu Fangzhou, Su Bingtian, Xie Jun, Yang Zhenning, Zhang Guimei, and Zhu Yanfu, students will appreciate the core values of cultural inheritance, patriotism, overcoming difficulties, and responsibility, enhance their cultural confidence and social responsibility, and establish the life belief that ordinary people can achieve greatness.

The third one is learning ability objectives. Students will learn to use multimodal resources, such as videos, text, digital resources, etc. to independently explore the deeds of historical figures, and improve their online and offline collaborative discussion, multimodal expression, and problem-solving abilities.

4.2. Construction of a Multimodal Resource System for Synergistic Complementarity Between Online and Offline Learning

Following the principles of theme alignment, emphasis on ideological and political education, and modal diversity, a multimodal resource library was constructed based on the content of the unit, complementing online and offline learning to achieve precise matching between resources and teaching activities.

The online pre-learning stage focused on perceptual enlightenment, integrating multimodal resources to lay the foundation for offline learning. The language modality selected texts from the book on the biographies of figures who have touched China, excerpts from the biography of Ye Jiaying, and historical materials on Zhan Tianyou's railway construction, helping students to initially understand the figures' lives. The visual modality incorporated images of Mogao Grottoes murals, screenshots from Digital Dunhuang resources, and photos of figures' work scenes, such as Fan Jinshi's inspection of the Dunhuang Grottoes and Mao Xianglin leading villagers to build roads, intuitively presenting the background of the figures' deeds;

The auditory modality pushed English audio of the Touching China Award speeches and English excerpts of Mogao Grottoes conservation work, cultivating language sense while conveying spiritual power. The interactive modality designed a task sheet matching figures and deeds in the text and an online questionnaire on “The Most Touching Role Model of the Times,” guiding students to actively think about the spiritual connotations of the figures.

The offline deepening phase emphasizes deep understanding, leveraging multimodal resources to promote the internalization of ideological and political education: The interactive modality centers on group discussion questions in PPT presentations, such as “What part of Ye Jiaying’s life story touched you the most?” and “What inspirations does Fan Jinshi’s spirit of dedication give you?”, designing activities like scenario simulations and debates. The “visual plus verbal modality” uses interactive whiteboards to display timelines of historical figures’ deeds, such as key milestones in Zhan Tianyou’s leadership in building the Beijing-Zhangjiakou Railway and Mao Xianglin’s seven-year road-building journey and student-made mind maps of the figures’ spirit. The emotional modality introduces video clips from the Touching China Awards ceremony and interview transcripts of Fan Jinshi to evoke emotional resonance among students.

The online extension phase focuses on practical output, expanding multimodal resources to facilitate skills transfer. Language and visual modalities provide biographical writing samples, links to the Digital Dunhuang online digital exhibition hall, and a platform for showcasing outstanding student works. Interactive modalities include a discussion area on the topic of My Role Models of the Times, and tasks for sharing their stories in English. Multimodal integrated resources include short video templates for telling the stories of Chinese role models in English, and English clips of relevant documentary films, such as excerpts from *The Guardians of Dunhuang*, providing support for students’ practical output.

4.3. Multimodal Interactive Activity Design for Closed-Loop Linkage Between Online and Offline Learning

Using the model of “online pre-learning—offline deepening—online expansion” as the main logical thread, and combining the character stories and activity designs in the unit, a tiered multimodal interactive system is constructed to achieve a complete learning chain of input—internalization—output.

The first phase is to do online pre-learning. Multimodal input in the phase stimulates students active perception. This phase focuses on student-led exploration and lasts 1-2 days before class. Through multimodal resource input, students gain an initial understanding of the character stories and their core spirit. The teacher released a package about the models of the times on the learning platform SuperStarLearn, integrating core PPT resources which include a warm-up video about Fan Jinshi and the Mogao Grottoes, accompanied by relevant questions from the book to guide students in viewing the content with specific questions in mind. Then the teacher assigned a matching task by providing the list of figures who have touched China, such as Gu Fangzhou, Xie Jun, Ye Jiaying, etc. and their descriptions, requiring students to complete the matching and mark unfamiliar words. What was followed were the excerpts from Ye Jiaying’s biography and textual materials about Chang Shuhong who gave up his art career in Paris to return to China to protect Dunhuang, with open-ended questions such as “Which of these figures’ deeds impress you most?”

Why?” to encourage students to share their initial insights in the discussion area. The teacher tracked students’ task completion through platform data, summarized vocabulary questions and core viewpoints, and precisely targeted key points for offline teaching.

The second phase is offline deepening study. Multimodal interaction in the offline deepening phase facilitates in-depth internalization. This phase is the core of teaching, lasting 45 minutes. Through multimodal collaborative activities, students deepened their mastery of language knowledge and understanding of ideological and political values. The teacher played the role of guides and organizers. The first part of the phase is the leading-in through questions, lasting for 5 minutes. The teacher projected a video clip (visual + auditory modality) of the English audio of the Touching China Award speech and scenes of the award recipients working on screens. Based on students’ online discussions, the teacher asked, “These figures come from different fields, but what common spirit do they share?” This naturally connects to the online pre-learning content, focusing on the core theme of the unit--Perseverance and Dedication. The second part of the phase is in-depth language explanation for 10 minutes to address students’ problems about vocabulary that they previewed online. Though PPT texts, such as Guardians of Dunhuang and Zhan Tianyou, Father of China’s Railroad, this section explains the usage of core words like devotion, persistence, and innovation. It analyzes the narrative structure of biographical texts, which follows a sequence of “biography—core achievements—spiritual elevation.” Simultaneously, it interweaves ideological and political highlights from the texts, such as Zhan Tianyou’s steadfastness in the face of foreign criticism and Mao Xianglin’s dedication to seven years of road construction, achieving an organic integration of language knowledge and value guidance. The third part of the phase is multimodal collaborative task for 20 minutes. The teacher divided students into groups of 6-8 and distribute different tasks based on the Texts. Each group chooses one task to complete. These tasks include role-playing, mind mapping and debate. The role-playing group needs to recreate key scenes, such as Chang Shuhong explaining the significance of protecting Dunhuang to the team, and use body language and English dialogues to convey the characters’ beliefs (interactive + verbal modality). The mind mapping group needs to use a blackboard to draw a map of the characters, combining text details and image materials to mark the core deeds and spiritual qualities of the characters (visual + verbal modality). The debate groups need to debate on the question about theme exploration in the PPT, combining the characters’ experiences to support their viewpoints (interactive + mind modality). After each group completes their task, they present their work on stage, other students comment and ask questions, and the teacher provides targeted guidance. The final part of the phase is summary and reflection for 10 minutes. The teacher guided students to share their emotions (emotional modality) around the theme of to be ordinary and great, and summarized the core spirit of remaining to the original aspiration, taking responsibility and cultural inheritance based on the concluding viewpoint of *Guardians of Dunhuang* in the PPT. The teacher emphasized the importance of telling the stories of Chinese role models in English, encouraging students to combine personal growth with the spirit of the times and enhance their cultural confidence and sense of mission.

The third phase is online further study. Multimodal output in the online further learning phase achieves the goal of put what is learned into practice. This phase focuses on student practical output, lasting 3-5 days after class. Multimodal output tasks are used to consolidate language knowledge and practice ideological and

political education concepts. The first part of the phase is personalized output tasks where students need to choose a subject from the characters in the book or ordinary heroes around them, such as community workers, teachers, family members, and write a biography or introduction of deeds of about 500 words by using a multimodal format of “English text + pictures/short videos.” The content should include core deeds, spiritual qualities, and personal insights, and be uploaded to the learning platform. The second part of the phase is online peer review and presentation. By referring to the requirements of “Cultivating Core Values” in the PPT, students need to evaluate each other’s work from three dimensions, including language accuracy, completeness of deeds, and interpretation of spirit. The teacher then selects outstanding works for display, accompanied by professional comments to strengthen the demonstration effect. The third part of the phase is thematic extension activities. The teacher provides links to the Digital Dunhuang online digital exhibition hall to let students write English reflections after browsing, discussing their understanding of cultural heritage protection. An online essay contest named Chinese Models in My Eyes is launched to encourage students to combine what they have learned in the unit to tell more stories of Chinese role models in English, extending learning from the classroom to social practice.

4.4. Evaluation System Design for a Multi-faceted and Integrated Closed-Loop Evaluation

A multi-faceted evaluation system combining “process evaluation + summative evaluation” and “quantitative evaluation + qualitative evaluation” is constructed to comprehensively assess students’ language proficiency, ideological and political literacy, and learning participation. The evaluation content is closely linked to multimodal interactive activities.

The first part is process evaluation which accounts for 60% of the scores. It focuses on examining the quality of students’ online and offline participation and learning process. The online learning component, which accounts for 20% of the scores, includes the viewing time of pre-learning videos, the accuracy rate of completing paired tasks, and the quality and frequency of participation in discussion forums. The offline interaction component, accounting for 20% of the scores, covers contributions to group collaboration tasks, performance in role-playing or debate or presentations, and the logic and accuracy of classroom speeches. The multimodal output component, accounting for 20% of the scores as well, focuses on the quality of completed personalized biographical works and reflections, assessing language expression ability and the degree of interpretation of ideological and political content.

The second part is final assessment which accounts for 40% of the scores. An English comprehensive ability test will be used, with question types closely aligned with the unit theme and language objectives. The listening section will involve filling in blanks with English news reports about a person’s deeds. The reading section will involve answering comprehension questions from excerpts of similar biographical texts. The writing section requires writing a short essay titled An Inspiring Chinese Figure. And the translation section will involve translating Chinese sentences embodying the spirit of role models into English. Additionally, open-ended questions in the test, such as “What can you learn from the life of Zhan Tianyou?” will assess the depth of students’ ideological and political understanding.

The third part is the evaluation of ideological and political literacy. Based on students' classroom sharing, online discussion, multimodal output works and offline interaction, a qualitative assessment will be conducted from three dimensions, including cultural confidence, responsibility and commitment and dedication and commitment. A four-level scoring system of "excellent, good, qualified and unqualified" will be used to focus on the students' understanding and internalization of the spirit of role models.

5. Analysis of Teaching Effectiveness

To objectively verify the practical effect of the college English blended ideological and political teaching system with multimodal interaction, this chapter comprehensively analyzes the teaching outcomes from both quantitative and qualitative perspectives. Drawing on data collected through questionnaires, English proficiency tests, in-depth interviews, and 17-week classroom observations, the analysis focuses on four core dimensions, including students' comprehensive English proficiency improvement, ideological and political literacy cultivation, learning participation enhancement, and teaching satisfaction. The chapter first presents quantitative results to reveal objective differences in learning effects between the experimental and control classes, then supplements with qualitative findings from student interviews, teacher reflections, and classroom observations to deepen the understanding of the teaching system's operational mechanism and practical value. This combined analysis approach ensures the comprehensiveness and credibility of the research conclusions.

5.1. Quantitative Analysis Results

(1). Improvement in Comprehensive English Proficiency

Before the experiment, baseline tests were conducted on the comprehensive English proficiency of the two classes. The results showed that the experimental class had an average score of 82.1, while the control class had an average score of 81.8. The results showed no statistically significant difference between the two classes, indicating good comparability. After 17 weeks of teaching experimentation, both classes showed improvement, but the magnitude of the improvement was significantly different: the experimental class's post-test average score was 91.4, an increase of 9.3 points compared to before the experiment; the control class's post-test average score was 83.5, an increase of only 1.7 points compared to before the experiment. The overall improvement of the experimental class was 5.5 times that of the control class, and the difference in post-test scores between the two classes reached a significant level. From the perspective of competency modules, the writing and translation modules, directly related to the multimodal tasks, showed the most significant improvement in the experimental class. The average score for the writing module increased from 18.2 to 28.5, and the translation module from 17.6 to 27.9, both exceeding 50% growth. This fully demonstrates the targeted cultivation effect of the multimodal interactive teaching system on language output ability.

(2). Effectiveness of Ideological and Political Literacy Cultivation

A pre- and post-test assessment was conducted using a three-dimensional scale of "cultural confidence—social responsibility—moral cultivation." The results showed that the experimental class's improvement in ideological and political literacy exhibited characteristics of overall advancement with a focus on key areas. Before the

experiment, the experimental class's average score in ideological and political literacy was 3.2 (out of 5), which improved to 4.3 after the experiment, an overall increase of 34.4%. Among these, the cultural confidence dimension, deeply related to the content such as telling Chinese stories in English and inheriting the spirit of Dunhuang guardians, saw the most significant improvement, rising from 3.1 to 4.4, a 41.9% increase. In contrast, the control class's average score in ideological and political literacy before the experiment was 3.1, which only improved to 3.3 after the experiment, with no significant change in any dimension. This stark contrast demonstrates that multimodal teaching designed based on the deeds of figures can effectively promote the transformation of ideological and political elements from cognition to identification, achieving deep internalization of ideological and political literacy.

(3). Improved Learning Participation

Based on questionnaire data and 17 weeks of classroom observation records, the differences in learning participation between the two classes were mainly reflected in two aspects: proactivity and depth of participation. In online learning, students in the experimental class invested an average of 4.1 hours per week in learning multimodal resources, 2.4 times that of the control class (1.7 hours). They spoke an average of 5.3 times per week in online discussion forums, engaging in in-depth interactions on topics such as Ye Jiaying's dedication to poetry and Zhan Tianyou's innovative spirit, with 4.8 times the number of times they spoke in the control class (1.1 times). The online homework submission rate and excellent rate were 100% and 86% respectively, showing a significant advantage over the control class (84.5% and 36.9%). In offline classes, the experimental class students' active participation rate reached 92%, nearly 35 percentage points higher than the control class (57.1%). The excellent rate in group collaborative tasks such as "mind mapping of exemplary spirit" and "role-playing of characters and scenes" reached 88%, more than double that of the control class (40.5%). These data clearly demonstrate that multimodal interactive formats precisely stimulated students' intrinsic motivation for learning, achieving a synergistic improvement in online and offline participation.

(4). Teaching Satisfaction Evaluation

A post-experiment satisfaction survey showed that the experimental class students' overall satisfaction with the teaching model reached 96%, with particularly high scores in dimensions directly related to the teaching resources and activity design. Satisfaction with multimodal resources such as "excerpts from Ye Jiaying's biography and documentaries on the protection of the Mogao Grottoes" reached 94%. Satisfaction with interactive activity design, such as character debates and biography writing, reached 92%. And satisfaction with the integration of ideological and political elements with language learning reached 92%. The satisfaction rate of students in the control group with the traditional teaching model was only 65.5%, with core dissatisfaction concentrated on three major issues, including monotonous interactive forms, weak connection between content and reality, and awkward integration of ideological and political education. This starkly contrasts with the evaluation of the experimental group. This difference in subjective satisfaction, corroborated by the teaching effectiveness reflected in the objective data, fully demonstrates the practical adaptability and superiority of the multimodal interactive teaching system.

5.2. Qualitative Analysis Results

(1). Student Interview Results

The interview texts of the 12 students in the experimental group were coded and analyzed, revealing three core themes.

First, multimodal interaction enhances the learning experience. “Documentaries and audio lectures are much easier to understand than simple texts, and they are very moving, making me more interested in learning said student A. “Group role-playing is very interesting; it not only improved my oral skills but also helped me better understand the hardships faced by scientists” said student B.

Second, ideological and political elements are naturally integrated and easily accepted. “It’s not about rigidly explaining principles, but about using stories of individuals to help me feel the importance of perseverance and dedication, which is more relatable than traditional ideological and political education classes” said Student C. “Writing about ordinary heroes around me in English made me realize that positive energy is all around me, and it also helps me improve my writing skills” said student D

Third, significant improvement in abilities and increased confidence. “I used to always lack ideas when writing English essays, but now, through learning from multimodal resources, I have a lot of material, and I feel more confident in my writing” Student E. “Now I dare to tell Chinese stories in English, and I feel that my cultural confidence has improved a lot” said student F.

(2). Teacher’s Reflection Results

First, the teaching system is operable. “Although the construction of the multimodal resource library requires time in the early stages, once it is built, it can be reused, and the subsequent teaching efficiency is very high. The closed-loop design of online and offline interaction makes teaching more systematic, and students’ learning effects are easier to track.” said the teacher.

Second, significant ideological and political education effects. “The students’ output clearly reflects ideological and political elements. For example, some wrote about community volunteers, and some wrote about rural teachers, indicating that they were truly inspired. Classroom discussions extended from language knowledge to life values, creating a stronger educational atmosphere.” said the teacher.

Third, suggestions are given for improvement. The English difficulty of some multimodal resources needs further optimization to meet the needs of students at different levels. Online interaction supervision needs to be strengthened to prevent a few students from being perfunctory.

(3). Classroom Observation Results:

Through 17 weeks of classroom observation, it was found that the learning status of students in the experimental class showed significant positive changes. They made progress from “passively listening” at the very beginning to “actively participating” in the end. The classroom discussion atmosphere became lively, and group collaboration was highly efficient. In the emotional sharing session, students were able to actively express their insights based on their own experiences, achieving a unity of knowledge learning and emotional resonance. Students in the control class, on the other hand,

mostly exhibited passive learning, with less classroom interaction and easily distracted attention.

6. Discussion and Comprehensive Analysis

Based on the quantitative and qualitative empirical results presented in Chapter 5, this chapter further explores the intrinsic logic, academic value, and practical limitations of the constructed multimodal interactive teaching system. The discussion focuses on three parts. The first part is to analyze the effectiveness mechanism of the teaching system to clarify how multimodal resources, closed-loop interaction, and contextualized ideological and political integration jointly promote teaching goals. The second part is to compare the research findings with existing studies to highlight the innovations and theoretical or practical contributions of this study. The third part is to reflect on the limitations of the research process and proposing targeted improvement directions for future exploration. This in-depth discussion aims to deepen the understanding of the teaching system's operational logic, enrich the theoretical connotation of college English blended curriculum ideological and political teaching, and provide more valuable references for subsequent related research and practice.

6.1. The Effectiveness Mechanism of the Multimodal Interactive Teaching System

Firstly, synergistic effect of Multimodal resources enhances learning efficiency. The integration of multimodal resources such as language, visual, and auditory learning aligns with students' cognitive patterns, reducing the difficulty of language input. Simultaneously, emotional symbolic resources, such as character stories and documentaries stimulate students' learning interest, transforming from "I have to learn" into "I want to learn." For example, in the experiment, student satisfaction with multimodal resources reached 96%, confirming the important role of multimodal resources in enhancing the learning experience.

Secondly, closed-loop design of online and offline interaction promotes deep learning. Online pre-learning lays the foundation for students' knowledge, offline interaction deepens understanding, and online expansion realizes knowledge output, forming a complete learning chain of "input—internalization—output." This design not only ensures students' independent learning space but also addresses the loneliness and fragmentation issues of online learning through offline collaborative interaction. For instance, the significant increase in online and offline participation among students in the experimental class demonstrates that the closed-loop interactive model effectively promotes students' continuous participation.

Thirdly, contextualized integration of ideological and political elements to achieve value guidance. Ideological and political elements are integrated into specific contexts such as character stories and practical tasks. Through multimodal interaction, students can experience firsthand rather than passively listen, internalizing the values of ideological and political education into their conscious understanding. For example, students mentioned in interviews that they felt the importance of perseverance through character stories, demonstrating the educational effect of contextualized integration.

6.2. Research Findings and Innovation

This study found that in a blended online and offline teaching model, using multimodal methods for interactive and innovative ideological and political education

curriculum design and practice yielded significant results. It greatly enhanced students' interest and initiative, significantly improved their academic performance, and subtly improved their personal cultivation and perseverance. This further verifies the feasibility of integrating ideological and political education into curriculum with blended teaching. Meanwhile, the innovations of this study are as follows:

First, a “three-dimensional and five-dimensional” multimodal interactive system was constructed, clarifying the selection criteria for multimodal resources and the design methods for interactive activities in blended online and offline teaching, thus solving the problem of design ambiguity in existing research.

Second, a large-sample, long-term empirical study was adopted, combining quantitative and qualitative methods to comprehensively evaluate the teaching effect, making up for the “insufficient empirical evidence” in existing research;

Third, a multi-dimensional evaluation system of “language ability + ideological and political literacy + learning process” was established, providing a new paradigm for the scientific evaluation of the teaching effect of ideological and political education in courses.

6.3. Research Limitations and Improvement Directions

This study also has some limitations. First, the research subjects are only non-English major students from a local undergraduate institution, and the sample representativeness is limited. In the future, the sample scope can be expanded to cover different levels of institutions and majors;

Second, the teaching experiment period is 16 weeks, and the long-term effect needs further tracking.

Third, the development of multimodal resources mainly relies on existing materials. In the future, personalized multimodal resources can be developed by combining artificial intelligence technology.

In response to the above limitations, future improvement directions include conducting cross-school and cross-major comparative studies to verify the universality of the teaching system, conducting long-term follow-up studies for 1-2 years to assess the lasting impact of ideological and political literacy and using AI technology to build an intelligent multimodal resource library to push personalized resources based on students' language proficiency and learning preferences.

7. Conclusions

This study, based on multimodal discourse theory and constructivist learning theory, constructed a “three-dimensional and five-dimensional” multimodal interactive teaching system for ideological and political education in online and offline blended college English courses. Through 17 weeks of teaching experiments and empirical research, the following conclusions were drawn.

First, this teaching system includes four core elements: teaching objectives, multimodal resources, interactive activities, and evaluation system. Its implementation path follows a closed-loop model of “online pre-learning—offline deepening—online extension,” demonstrating clear operability and systematicity, and providing a concrete reference for ideological and political education in college English courses.

Second, this teaching system can significantly improve students' comprehensive English application ability, especially their output abilities such as writing and translation. It can also effectively cultivate students' ideological and political literacy, enhance their cultural confidence and social responsibility. Furthermore, it can significantly improve students' online and offline learning participation and teaching satisfaction.

Third, multimodal interaction serves as an effective link between blended learning and ideological and political education in courses. Through the synergistic effect of diverse symbolic resources and contextualized interactive design, it resolves the separation between knowledge transmission and value guidance, achieving a unity of instrumental and humanistic aspects.

This study provides a new teaching paradigm and empirical evidence for the high-quality implementation of ideological and political education in college English courses. Future research can further optimize the teaching system, expand the research scope, and promote the continuous improvement of the quality of college English education.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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