# The Construction and Practice of a Multimodal Corpus for the Ideological and Political Education in Aerospace-themed College English Curriculum

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## Abstract

**Amid ongoing reforms in higher education and the burgeoning growth of the aerospace sector, there is a pressing need for college English education to evolve, aiming to bolster students' professional acumen and expand their global perspective. This paper delves into the innovative integration of aerospace features into college English instruction by leveraging a multimodal corpus. The goal is to seamlessly intertwine discipline-specific education with ideological and political education, thereby enriching the educational experience and fostering a more comprehensive understanding among students.**

## Keywords

**Multimodal corpus; The ideological and political education; Aerospace-themed College English curriculum.**

## 1. Introduction

In the new era of higher education, integrating ideological elements into professional courses has become an important direction of educational innovation. As an important base for cultivating future talents in the aerospace field, College English in North China Institute of Aerospace Engineering not only imparts language knowledge but also carries the responsibility of promoting the aerospace spirit, cultivating patriotic feelings, and improving the international vision. The multimodal corpus provides powerful technical support and rich teaching resources for achieving the goal[1-3].

## 2. Characteristics of the Multimodal Corpus for the Ideological and Political Education in Aerospace-themed College English Curriculum
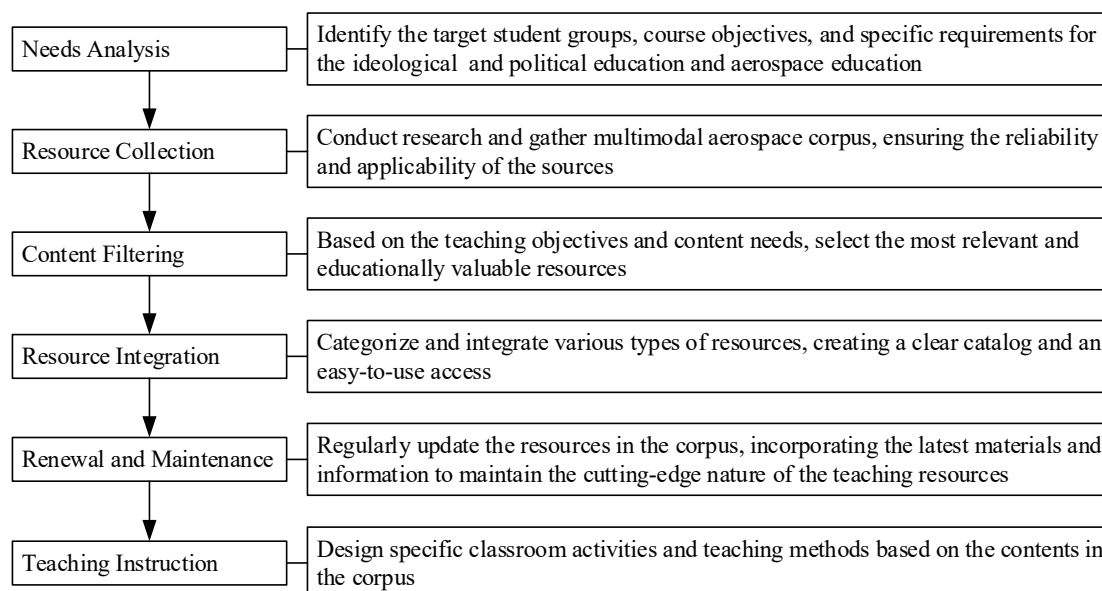
A multimodal corpus is a teaching resource library that includes texts, videos, images and audios. Its characteristics are rich information, diverse forms, and strong interactivity. In teaching practice, the multimodal corpus can effectively enhance students' interests and learning initiative, and improve the visibility and interactivity of teaching.

By now, a multimodal aerospace corpus has been accomplished, including aerospace historical documents, latest reports on aerospace activities, materials on aerospace pioneers, aerospace educational videos and academic papers on aerospace. Specifically, aerospace historical documents cover aerospace mission reports, astronaut biographies, government-issued space program documents. Latest reports on aerospace activities is collected in various forms—news

reports, press conference videos, special lectures, formal statements from space agencies. educational videos are sourced from popular science channels on Bilibili, official videos from the China National Space Administration, NASA, etc. Academic papers on aerospace involves the latest research achievements and academic research in aerospace technology. These resources reflect the history, current status, and cutting-edge technology in the aerospace field[4].

## 3. The Construction Process of a Multimodal Corpus for the Ideological and Political Education in Aerospace-themed College English Curriculum

The construction of a multimodal corpus for the ideological and political education in aerospace-themed College English curriculum is advanced in 6 steps: needs analysis, resource collection, content filtering, resource integration, renewal and maintenance and teaching instruction[5].



| Needs Analysis | Identify the target student groups, course objectives, and specific requirements for the ideological and political education and aerospace education |
| Resource Collection | Conduct research and gather multimodal aerospace corpus, ensuring the reliability and applicability of the sources |
| Content Filtering | Based on the teaching objectives and content needs, select the most relevant and educationally valuable resources |
| Resource Integration | Categorize and integrate various types of resources, creating a clear catalog and an easy-to-use access |
| Renewal and Maintenance | Regularly update the resources in the corpus, incorporating the latest materials and information to maintain the cutting-edge nature of the teaching resources |
| Teaching Instruction | Design specific classroom activities and teaching methods based on the contents in the corpus |

**Figure 1.** The Construction Process of a Multimodal Corpus for the Ideological and Political Education in Aerospace-themed College English Curriculum

First and foremost, the construction process of a multimodal corpus for the ideological and political education in aerospace-themed College English curriculum is focused on the construction of a multimodal aerospace corpus. However, to achieve a deep blending of the disciplinary education and the ideological and political education, the construction pays close attention to the application of the multimodal aerospace corpus on the grounds that it is the practical teaching application of the multimodal aerospace corpus that will actualize the integration of the College English education and the ideological and political education, which is guaranteed by needs analysis, resource integration, renewal and maintenance and teaching instructions.

The construction of the multimodal aerospace corpus invites some of my students, including Wu Haochen, Du Zehao, He Yanru, Sun Le, Sun Xuesong, Song Zihao, Zhao Shaonan, Zhang Yuxuan, Cui Dingming, Chen Dongming, Chen Tianyun, Liu huaze, Wang Jia, Zhan Jiaxuan, Jia Xiaotong, Ren Huijia, Liu Shuo, Cui Yujia, Zhu Yishuo, Zhao Zihan, You Jiashuo, Cui Jiabao, Dong Hangwei, Guan Yongcong, Guo Yutong, Gou Yutian, Li Haojie, Lǚ Hexiang, Li Yongfa, Liu Yaxuan, Liu Yizhou, Ma Yunfei, Song Hanlin, Sun Kangshuo, Wang Shuaiyan, Wang Yongjian, Wang

Zixuan, Yan Junxian, Zhang Yadan, Zhao Yuhang and Zhang Zihan. Even though they are freshmen, they displayed enormous passion for the research and made contributions to the corpus construction.

## 4. Characteristics of the Multimodal Corpus for the Ideological and Political Education in Aerospace-themed College English Curriculum

### 4.1. Aerospace characteristics

The multimodal corpus is designed to be aerospace-themed, so the selected teaching resources are closely related to aerospace, including aerospace technology, exploration achievements, historical events, important figures, and aspects of society and culture related to the aerospace industry. Reading materials in our College English involve articles on the history of aerospace development, such as the first artificial satellite, the first manned space mission, the first moon landing, introductions to major breakthroughs and key technological developments in aerospace history that are collected to showcase the progress of aerospace technology, aerospace mission reports and analysis, study reports of different aerospace missions, the international cooperation in space exploration, stories of aerospace pioneers including personal stories of astronauts and famous scientists and engineers in the aerospace field, such as Sergei Korolev, Wernher von Braun, Qian Xuesen, Sun Jiadong, Wang Xiji.

Almost half of the aerospace English materials are gathered in the form of videos and images. Videos mainly includes documentaries about aerospace missions, videos of astronaut training and spacewalks, and live footage of spacecraft launches and landings. Image materials mainly contains  high-definition images of different types of spacecraft, satellites, as well as diagrams and frameworks of aerospace technology.

Through these aerospace-themed English teaching resources, teachers can not only improve students' English language skills but also help them to gain a deep understanding of the development of aerospace technology, know more about aerospace figures and events in the aerospace field, cultivate students' interest and passion for the aerospace industry, strengthen the realization of the aerospace spirit and deepen the understanding of the importance of international aerospace cooperation.

### 4.2. Ideological and political characteristics

The multimodal aerospace corpus is also featured with ideological and political education. A full range of aerospace-themed learning materials is selected to highlight the inheritance of the aerospace spirit and the cultivation of patriotic feelings. By learning the selected aerospace-themed materials, students can gain a deeper understanding of the spiritual values and social significance behind the aerospace industry.

Here are some methods and cases to achieve this goal. To highlight and cultivate the inheritance of the aerospace spirit, we selected historically significant aerospace events, such as the "Apollo 11" moon landing, China's "Shenzhou" series of manned space missions. These stories tell the stories and challenges behind them and focus on introducing the perseverance and innovation spirit demonstrated in the face of difficulties. To achieve this goal, the personal case analysis, the reflective brainstorm, the teamwork exploration project are strongly recommended.

① The personal case analysis

As for the study of the deeds of heroes in the aerospace field, such as Yuri Gagarin, Yang Liwei, students are led to read or listen and analyze how the aerospace heroes showed extraordinary courage, perseverance, and sacrifice spirit, and how they influenced and inspired later generations.

② The reflective brainstorm

Organize students to have classroom discussions or seminars, and then invite students to share their understanding, feelings and thoughts. Reorganize the second round of classroom discussions or seminars and lead them to think more about lots of "whys", influences and significance, thus to arouse students' the inheritance of the aerospace spirit, stimulate their passion and love for studying and have a clear mind of how to live a meaning life.

③ The teamwork exploration project

Organize students to immerse in simulated space mission activities to provide them with opportunities to solve problems, experience the importance of teamwork, cultivate the spirit of collectivism and a sense of responsibility for our country.

Invite students to explore and study the current development of aerospace technology, such as commercial space, small satellite technology, to lead them to realize the significance of the national independent innovation in aerospace technology in the new era and further stimulate their responsibility of making contributions to the future aerospace development in China.

## 4.3. College English + aerospace major

To enhance the practicality of the College English course, especially for students majoring in aerospace, our course focuses on the study of aerospace English, aimed at improving professional English application capacities. Below are some targeted strategies and activities that can help students master professional English in the aerospace field and enhance their application abilities:

① Building a Professional Vocabulary Database: create and provide a detailed list or glossary of aerospace professional English vocabulary, including professional nouns, verb phrases, technical expressions, etc.

② Terminology Cards: use terminology cards to aid students' memorization, adopting an image+text approach to help students better associate and remember terms.

③ Use of Professional English Textbooks: select or compile textbooks containing a large amount of aerospace professional terminology and contexts, allowing students to understand their professional usage scenarios while learning language.

④ Real Material Reading: introduce original English literature, technical manuals, operation guides, etc., from the aerospace field, allowing students to encounter more practical English application scenarios.

⑤ Watching Aerospace Documentaries: utilize English documentaries, speeches, and other resources to enhance understanding of industry-specific terminology.

⑥ Utilizing Online Resources: make use of professional English teaching videos on online platforms, or educational resources provided by NASA and other aerospace institutions.

Through these methods, students can gradually accumulate professional English vocabulary, improve their language usage ability, enhance their professional quality and international communication ability. Furthermore, these activities are not limited to the classroom but can be extended outside through practice, interaction, and application, providing students with a richer and more authentic learning experience.

## 5. The Practice of the Multimodal Corpus for the Ideological and Political Education in Aerospace-themed College English Curriculum

By utilizing a variety of media such as videos, images, audios and interactive teaching tools, the blending teaching of the disciplinary education and the ideological and political education can capture students' attention and enable them to understand and master English knowledge more comprehensively, especially in the field of aerospace English[6-7].

① Utilizing resources: encourage students to use the corpus for independent learning and exploration after class. College English course, based on the corpus, deepens students' interdisciplinary understanding. Constructing such a multimodal corpus enables students to understand aerospace science and aerospace English, foster their sense of honor and mission towards China's aerospace endeavors. Through the systematic integration and utilization of these resources, teachers can provide a rich and practical English learning environment, enhance students' interest and motivation in learning and cultivate their professional qualities and international vision while learning English.

② The practical teaching of aerospace English: students form groups to choose an aerospace technology project or invention, research its impact on society, economy, or culture, then prepare reports or presentations in English. Organize debates on whether the funding for space exploration is worthwhile, the significance of exploring the universe for the future of humanity to exercise students' English speaking abilities and logical thinking. Discussions about different countries' space programs and achievements enhance students' understanding of the global space industry, and cultivate their international vision and cross-cultural communication skills. Integrating aerospace elements into English teaching, this interdisciplinary teaching model not only makes learning English more attractive and practical but also provides students with a platform to understand international space dynamics, explore the mysteries of the universe, contemplate future developments and develop students' overall qualities more comprehensively.

③ Aerospace-themed English Speech Contest: aim to improve students' English public speaking abilities. Students prepare speeches on aerospace-themed topics and deliver public speeches in the classrooms and competitions of different levels.

④ Model United Nations Conference: Aim to cultivate students' international vision and negotiation skills. Aerospace-themed topics are set, such as "The Future Cooperation of the International Space Station", "Strategies for Dealing with Space Debris". Students represent different countries, prepare position papers in advance, and engage in policy statements, debates, and negotiations during the conference to produce a resolution draft on the issues ultimately.

⑤ Simulated Activities and Practice: Organize Simulated United Nations Aerospace Committee discussions, allowing students to participate in discussing and formulating aerospace policies. Arrange online or offline interviews with aerospace experts and scientists, giving students the opportunity to interact with practitioners in the aerospace field. Hold the Practical Context Simulation Role-Playing to practise and promote students' capacity to solve international issues by using aerospace English.

⑥ English Corner: Aim to provide a relaxing environment for students to practice English communication and enhance their language practice ability. Set a theme for each English corner, such as "My Aerospace Dream," "Who Are the Aerospace Heroes," allowing students to freely speak and share their views around the theme. Regular English corners can be set up on campus or virtual English corners can be utilized through online platforms.

## 6. Conclusion

The adoption and practice of the multimodal teaching method can significantly enhance students' learning interest and efficiency. By employing various means such as images, videos, audios and interactive teaching, students' attention can be better engaged, allowing them to understand and master English knowledge more comprehensively through the involvement of multiple senses, especially in the learning of aerospace English. Integrating ideological and political education into English teaching effectively strengthens students' national consciousness and international vision and develops their enthusiasm for the aerospace cause

and pride in our country, thereby enhancing their sense of social responsibility and mission. Constructing a multimodal aerospace-themed English ideological and political corpus is of significant importance for the cultivation of future talents for our country. The rich resources contained in the corpus can provide inspiration for teachers and a wide range of learning materials for students. Additionally, the systematic and diversified nature of these resources helps cultivate students' self-learning abilities and critical thinking. In the future, the practice of this course will be further promoted and deepened, contributing to the comprehensive reforms and development of ideological and political education in colleges and universities.

## Acknowledgments

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