



Research Paper

Practice in Course Construction of Aviation Introduction

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Abstract: The paper focuses on the training objectives and student characteristics of the Aviation Service Art and Management major, and proposes a reform approach for the Aviation Introduction course. Through teaching practice from the perspectives of the course content system and teaching methods, it can effectively improve the teaching effectiveness of the course.

Keywords –aviation introduction course, course construction, teaching practice

Received 04 August, 2023; Revised 15 August, 2023; Accepted 17 August, 2023 © The author(s) 2023. Published with open access at www.questjournals.org

I. INTRODUCTION

The Aviation Introduction course is an introductory course for aviation majors and is currently required by Aviation Accreditation Board International (AABI) for professional certification. This course has been offered for many years in universities with aviation majors such as Beijing University of Aeronautics and Astronautics, Harbin Institute of Technology, Northwest University of Technology, Nanjing University of Aeronautics and Astronautics, and Tongji University.

At the beginning of its establishment, the School of Air Transportation at Shanghai University of Engineering Science offered this course for aircraft manufacturing engineering and flight technology majors. At present, the course has accumulated a certain foundation in teaching content and teacher team construction, but there is still a significant gap from the level of first-class courses. In 2022, the School of Air Transportation established a new undergraduate major - Aviation Service Art and Management. According to the training plan, this major also needs to offer the course. However, the professional ability requirements of this major are significantly different from the above two majors, and the new major has a liberal arts nature, and students generally lack knowledge in physics. Therefore, the course teaching must be reconstructed based on the consideration of general knowledge and the characteristics of new majors in order to achieve good teaching results.

II. TRAINING OBJECTIVES FOR AVIATION SERVICE ART AND MANAGEMENT

The training objectives of the Aviation Service Art and Management major is to cultivate a high level of artistic and humanistic literacy, social responsibility, and the ability to promote the spirit of advocating labor and selfless dedication in aviation service and management practice; understand and abide by the professional ethics and norms of aviation services, and establish the ambition of serving the country through aviation; strong interpersonal communication skills and service awareness; master the basic theoretical knowledge of art, management, and aviation services; high quality applied talents who possess the basic ability to carry out cabin services and passenger management in air passenger transportation, and can engage in civil aviation passenger service and management work in high-end service enterprises such as airlines and airport groups.

III. INTRODUCTION TO AVIATION COURSE POSITIONING

The purpose of the Aviation Introduction course is to enable students to understand the cutting-edge development status and trends in the aviation field, understand aircraft structure, performance, operational characteristics, and technological development, and have a preliminary exposure to the production, organization, and management of aviation transportation. Through learning, students' enthusiasm for aviation is stimulated, their professional literacy is cultivated, their sense of responsibility is enhanced, their ambition to serve the country in aviation is strengthened, and their knowledge range is broadened, their ability to analyze and solve practical problems is improved, laying a solid professional foundation for subsequent course studies and future career opportunities.

IV. CONSTRUCTION OF THE COURSE CONTENT SYSTEM OF AVIATION INTRODUCTION

The aviation introduction course has a total of 32 class hours, and the teaching content is very extensive, including knowledge that intersects and integrates multiple disciplines. Therefore, in teaching, it is necessary to match the theoretical depth and content of the course with students from different majors.

The course content system structure is divided into three modules. The content of Module 1 is a general basic content that introduces the basic concepts of aviation and aerospace; Classification of aircraft; Overview of the development of aviation technology; the development history of civil aviation and its management institutions. This part of the content is relatively concise and intuitive, easy to understand, and rich in examples, which can help students quickly establish a basic understanding of aviation. Therefore, the course content is relatively easy for students of any major to understand and accept.

The content of Module 2 revolves around the aircraft, introducing flight principles, aircraft structure, aircraft power system, and aircraft onboard equipment, enabling students to systematically understand the overall picture of the aircraft. This part of the content is highly technical and involves theories such as fluid mechanics, solid mechanics, propulsion technology, control theory, and electronics. For students majoring in aviation service art and management, teaching in the form of explaining technical theories may not be ideal. Therefore, the course does not focus on introducing theoretical formulas, but instead uses concise and clear language to introduce intuitive phenomena; By using more pictures, animations, and videos to explain in a popular science manner, the appearance, composition, and working principle of the aircraft are vividly and intuitively displayed. For example, when explaining the principle of flight and Bernoulli's theorem, complex formula derivation is not carried out, but rather the question is given: why is there a safety line at the train platform, and people are strictly prohibited from entering areas within the safety line when the train is running? By asking questions to inspire students to think, and through experiments: holding one piece of paper in each hand and blowing air into the middle of the paper, students can observe the phenomenon of two pieces of paper absorbing each other, which can help students naturally grasp relevant knowledge of aerodynamics.

The content of Module 3 revolves around industry production organization, introducing airline production organization, airport operation management, and air traffic management, enabling students to fully understand the production and operation of various subsystems in the civil aviation industry. In the past, this section of content was only briefly introduced to students majoring in aircraft manufacturing engineering and flight technology. However, for students majoring in aviation service art and management, this module content is very important. Therefore, the course has been expanded based on students' professional needs and future course arrangements.

V. CONSTRUCTION OF TEACHING METHODS FOR AVIATION INTRODUCTION

5.1 Implementing blended learning

The aviation introduction course covers a complex range of content, making it difficult to provide in-depth and detailed explanations of all teaching content within a limited time. Moreover, the internet has become the main way for contemporary college students to obtain information. Therefore, this course builds an online teaching platform based on the school's online teaching environment and an elegant teaching system. The course adheres to offline classroom teaching as the main focus for teaching content with characteristics such as high difficulty, prominent importance, difficult understanding, and strong comprehensiveness. For some teaching content that is shallow and less important, it is recorded as a micro video and relevant learning materials are provided to encourage students to learn independently online. At the same time, the course website provides corresponding online tests for students to check the effectiveness of self-directed learning.

5.2 Conduct case teaching

Case teaching is a new teaching method commonly used in management majors internationally, and it is also an effective means to stimulate students' interest in learning. It is also an effective carrier for professional education and ideological and political education. The course revolves around key and difficult content, selecting comprehensive practical business cases, such as airline flight planning. Through case descriptions, student thinking, classroom discussions, teacher summaries, and other methods, effective knowledge dissemination is achieved. At the same time, students' ability to analyze and solve problems is enhanced, and their understanding of the importance and necessity of the course is enhanced.

5.3 Carry out interactive teaching

Teaching and learning are complementary and indispensable. To improve teaching efficiency, it is necessary to allow students to fully participate in the teaching process and transform passive learning into active learning. Therefore, some interactive activities have been set up in the course teaching, such as asking some small

questions for students to explore; in order to help students better understand the situation of the civil aviation system, they are required to collect various information about airlines, airports, and other units that they are interested in, and then introduce them to everyone on stage, thereby mobilizing their enthusiasm and increasing the fun of the classroom.

VI. CONCLUSION

As a newly opened course in the field of aviation service art and management, Aviation Introduction has a complex knowledge system and a wide coverage of content. Therefore, the course should appropriately reduce the content that is too professional, highlight practicality, and cultivate students' scientific literacy while imparting basic knowledge. The course teaching team has made efforts to establish a network platform and a complete database, including case databases, exercise databases, video databases, etc., and fully utilizes various teaching methods to create a fast and efficient learning environment for students, effectively improving teaching effectiveness.

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