

Exploration and Practice of Strategies in Fostering Virtue via the Major Courses Under the Perspective of “Internet +” and the Sino-Foreign Cooperative Education Program in Colleges and Universities

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As one of the major models of high education, the Sino-foreign cooperative education program possessed huge advantages in internationalization and improving the quality of high education. Under the Sino-foreign cooperative education program, the college students can receive Sino-foreign educational resources, gain a broader perspective, and are also influenced by multiculturalism to varying degrees. Therefore, it is important to build a mental firewall for students, who are under Sino-foreign cooperative education program and at a critical stage in formation of world ideology, outlook on life and values, in order to guide them to make judgement and identify multiculturalism correctly. Under the perspective of Sino-foreign cooperative education, there are a few reports on exploring and practice of teaching research activities for dissemination of ideas and theories, value guidance, spiritual formation, and emotional stimulation consciously, through systematic and scientific teaching of major courses. Relying on “Internet +”, this work explores the construction of hybrid teaching of online and on-site, integrative education of major course and moral education elements, and native English teacher and Chinese teacher linked education system, based on the English lectures of General Biochemistry course.

Keywords: Sino-foreign cooperative education program, “Internet +”, courses for moral education, major courses

Introduction

Sino-foreign cooperative education programs constitute a vital component of China’s higher education system and play a crucial role in nurturing globally-oriented talents. Nonetheless, students enrolled in these programs encounter a fusion of Chinese traditional and foreign cultures, posing significant challenges for moral education endeavors.

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It's noteworthy to recognize that certain teaching practices within the Western education system share similarities with moral education in China. For instance, in the United Kingdom, elements of religion, morality, and politics are integrated into the curriculum through "citizenship education", aimed at instilling standards and expectations for good citizenship (Morris, Wylie, & Wilson, 2018). Similarly, in France, the curriculum emphasizes "citizenship and morality education", promoting principles of popular sovereignty and exhibiting strong nationalism and patriotism (Zabun & Bektaş, 2019). Germany focuses on "nationalism" as part of its curriculum, in order to reshape students' understanding of politics, culture, and religion (Vrtiska, 2019). In the United States, moral education is implemented through a comprehensive approach, with moral values integrated into various subject teachings (Liu, 2011). Moreover, countries like Japan, Singapore, and South Korea have implemented measures to bolster moral education within their educational frameworks (Zhu, 2017), highlighting the ongoing commitment of Western nations to fortifying moral education systems.

Sino-foreign cooperative education serves as a pivotal aspect of China's global educational engagement. It is evident that more and more students will choose Sino-foreign cooperative education programs and then pursue further studies abroad. The key to building a Sino-foreign cooperative education system that meets the requirements of the new international political situation is how to integrate the concept of moral education while adhering to educational principles and drawing on the essence of advanced cultures. This integration aims to cultivate students' noble patriotism and correct life attitudes. Therefore, it is particularly important to explore how to incorporate moral education into major courses, echoing the proverbial wisdom, "entering quietly with the wind, nourishing everything silently."

In 2015, the State Council of the People's Republic of China issued the "Guiding Opinions on Actively Promoting the 'Internet +' Campaign", encouraging schools to utilize digital educational resources and platforms to explore new models of online education. This initiative aims to drive the transformation of higher education models and provide pathways for reform in university education. Within the context of "Internet + Education", students can engage in learning activities using internet resources in a more autonomous and flexible manner. Likewise, teachers can leverage a wealth of online resources to delve deeper into the moral education elements embedded within teaching materials and incorporate them into their daily curriculum delivery. The teaching practices discussed in this article, by establishing a new model of moral education for major courses based on "Internet +", aim to explore new pathways for moral education in Sino-foreign cooperative education program that meet the requirements of the new era.

The Research Subjects and Content

The teaching practices targeted undergraduate students majoring in Biotechnology at the Westa College, Southwest University, spanning from September 2017 to December 2023. The Biotechnology program at Westa College is co-established by Southwest University (SWU) and the University of Western Australia (UWA).

"General Biochemistry", as a foundational course in life sciences and chemistry-related majors, holds a significant position in undergraduate education. As a compulsory course, "General Biochemistry" features long teaching hours, a large number of enrolled students, and high attendance rates, receiving high levels of attention. Additionally, "General Biochemistry" serves as a prerequisite for advanced courses such as "Molecular Biology" and "Molecular Genetics". Delving deeply into the content of "General Biochemistry" and ensuring the integration of moral education in teaching practices are of great value and significance in Sino-foreign cooperative education.

Taking the “General Biochemistry” course as an example, this work explores the integration of professional teaching and moral education under the “Internet +” environment.

The Process Implementation

Exploring Moral Education Elements in the Textbook

The textbook used for the “General Biochemistry” course, *Lehninger Principles of Biochemistry*, is a renowned scientific work elucidating the principles of biochemistry and ranks among the most popular English biochemistry textbooks internationally. To identify elements for moral education from the textbook, the team actively broadens disciplinary perspectives during the teaching process, enhances the awareness of moral education. Furthermore, the team, in conjunction with the course content, searches for and draws upon excellent online moral education resources. We utilize a case-based teaching method to promote the ideological and educational aspects of the “General Biochemistry” course. For example, by sharing the story of Dalton, who donated his eyes after death, a story spanning 150 years revealing the reasons why colorblind patients cannot correctly distinguish colors, students are informed that every scientific research achievement is hard-earned. It emphasizes the necessity of establishing firm and correct scientific beliefs and an unyielding scientific spirit to achieve ultimate success.

Improvement of Teaching Methods and Models

In Sino-foreign cooperative education classrooms, teaching is often conducted in English or in a bilingual mode. Due to variations in students’ English proficiency and learning abilities, instructors typically need to spend more time explaining basic concepts, making the already limited class hours even tighter and increasing the difficulty of ideological and educational work. Leveraging the “Superstar Learning Platform” provided by the Southwest University Academic Affairs Office, the teaching and research team implemented flipped classroom teaching reforms and practices in the “General Biochemistry” course. During the online learning phase, students familiarized themselves with English terminology and basic concepts, ensuring that classroom teaching was conducted in an orderly and efficient manner. This indirectly provided instructors with valuable time to subtly introduce ideological and educational elements into the curriculum.

Integration Traditional Culture Into Moral Education Within the Curriculum

The “General Biochemistry” course spans across the Teacher’s Day and Mid-Autumn Festival. In the instructional design, we integrate Chinese traditional culture, encouraging students to extend greetings to UWA teachers during the festivals, introduce the Chinese tradition of respecting teachers, and invite UWA teachers to celebrate the Mid-Autumn Festival together. As the instructional part of the “General Biochemistry” course at Westa College is jointly conducted by multiple UWA teachers, we also encourage students to send festival greetings to UWA teachers who are temporarily unable to visit campus for teaching, through the internet. These instructional designs enhance communication between Chinese students and foreign teachers, improve students’ English expression and communication abilities, enrich students’ cultural life after class, help students develop national self-esteem and pride, and also help UWA teachers understand and recognize Chinese excellent culture. Additionally, it enlivens the teaching and learning atmosphere to a certain extent. During the COVID-19 pandemic, when UWA teachers are unable to come to campus for face-to-face teaching, we encourage students to convey greetings through the internet, bridging the cultural exchange between both sides.

Establishing a Collaborative Relationship Between UWA and SWU Teachers

At Westa College, the “General Biochemistry” course is co-taught by teachers from both the UWA and

SWU. This collaboration maximizes the unique strengths of teachers from both institutions, facilitating complementary advantages. However, it also raises the bar for developing a collaborative and progressive curriculum that integrates moral education. During the collaborative teaching process with UWA colleagues, our team frequently observes that moral education elements seamlessly weave into the teaching. For instance, when discussing the formation mechanism of 4-Hydroxyproline, UWA teachers explain to students that a deficiency in vitamin C can hinder the synthesis of 4-Hydroxyproline, leading to the development of scurvy. This serves as a reminder for students to increase their intake of vegetables and fruits, participate in outdoor activities, and enhance their physical fitness.

Taking this opportunity, the team invited one of the UWA colleagues to hold an academic lecture titled “Academic Integrity”. The lecture focused on topics such as what constitutes academic integrity, what constitutes academic misconduct, the types of academic misconduct, how to identify academic misconduct, and the consequences of academic misconduct. Using a combination of case-based teaching and interactive questioning, UWA teachers guided students to understand and contemplate academic misconduct among university students from different perspectives. After the lecture, the team conducted interviews with students and concluded that the lecture successfully promoted the culture of honesty and integrity in academic pursuits.

Teachers’ Commitment to Excellence in Learning and Setting Examples

Teachers’ words and deeds play a decisive role in students’ learning and character development. Therefore, the team rigorously adheres to school requirements throughout the teaching process. The team meticulously prepare lessons, promptly grade assignments, patiently answer questions, and provide explanations, aiming to infect students with rigorous teaching styles, conscientious attitudes, a strong sense of responsibility, and excellent teaching abilities. Through these efforts, the team subtly influences students’ values and outlook on life, guiding them to become responsible, accountable, disciplined individuals who contribute positively to society and the nation.

Emphasis on Process-oriented Assessment to Eliminate “Easy Courses”

The course assessment and evaluation system adhere to a model that does not solely focus on exams but emphasizes the cultivation of students’ comprehensive abilities. It considers the process action and final exam of students, as well as their theoretical and practical performance (Table 1). This approach stimulates students’ enthusiasm and creativity in learning, guiding them to develop in terms of knowledge, skills, critical thinking, and personal qualities, thereby benefiting them for lifelong success. The design of the course assessment and evaluation scheme is as follows:

Table 1

The Course Assessment and Evaluation Scheme

Classroom learning assessment (30%)	Attendance (10%)	Using the Superstar Learning Platform’s sign-in feature for attendance check. Missing more than one-third of the total class hours will result in a failing grade for this course assessment.
	Class participation (20%)	Assessing students’ participation in classroom activities using functions of Superstar Learning Platform, such as voting and discussions activities.
Self-online learning activities (20%)		The team assesses students’ performance by reviewing their online platform viewing records, completion status of online assignments, and the summary submitted to the platform.
Final exam (50%)		The final exam paper consists of both objective and subjective questions, each accounting for 50% of the total. The questions are designed in line with the forefront of the discipline, current events, and hot topics in society. The main focus is on testing students’ ability to apply learned knowledge to analyze and solve problems, inspiring innovative thinking, and cultivating students’ innovation capabilities.

Conclusion

This teaching practice exemplifies the “Internet + Education” model through the “General Biochemistry” course, taught in English, within the framework of Sino-foreign cooperative education. It explores the pathways and effective mechanisms for moral education in Sino-foreign cooperative education program under diverse cultural backgrounds.

Through this teaching endeavor, we have observed that the “Internet + Education” model facilitates students’ pre-class independent learning, allowing more time for moral education during classroom sessions. Additionally, the abundance of network resources in the “Internet +” environment facilitates the exploration of moral education within the curriculum. Moreover, the “Internet +” teaching model enables moral education resources to be readily shared with students and society, thereby enhancing teaching effectiveness.

Throughout this teaching practice, the team have undergone significant growth in teaching philosophies and understanding of moral education. Besides, the team have also developed proficiency in the computer skills necessary for constructing online course platforms. Additionally, through the teaching practice, all team members have gained a deep understanding that the “Internet +” teaching model entails more than just online videos and in-class discussions; it demands close collaboration between teachers and students. Similarly, the multi-dimensional linkage for moral education in Sino-foreign cooperative courses requires feedback from both UWA and SWU teachers. The pathways and methods for moral education explored in this teaching research activity can serve as a reference for enhancing moral education in universities engaged in Sino-foreign cooperation.

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