

How to Keep Pace With the Times in the Teaching of Environmental Law for Engineering Majors

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ABSTRACT

Environmental law is a basic elective course for the environment and safety majors in colleges and universities. The main purpose of this paper is to discuss how to keep pace with the times in the teaching of environmental law for engineering majors. Taking the teaching of environmental law for safety engineering major of Jiangsu University as an example, this paper mainly discusses how to set up the teaching syllabus relevant to environmental law under the background of safety engineering major responding to the certification of engineering education major, and analyzes how to keep pace with the times in the teaching and examination methods of environmental law course.

Keywords: engineering major, environmental law, course teaching, keep pace with the times

1. INTRODUCTION

With the accelerating urbanization and rapid economic development, environmental problems have become increasingly prominent. How to protect human health and achieve sustainable development of environment and social economy has become a hot topic nowadays. The environmental law comes into being and develops under this background. Its ultimate goal is to protect human health and promote the sustainable development of environment and social economy. It needs to be based on a high level of environmental law education to promote the process of national environmental rule of law[1]. At present, majors which have environmental law courses in domestic colleges and universities involve a variety of disciplines, including law, science and engineering. For different majors, there are also significant differences in the course orientation of environmental law. For example, environmental science major which belongs to science category takes environmental law as a professional basic compulsory course, while environmental and safety major which belongs to engineering category takes it as a professional basic elective course. For another example, environmental law is positioned as a core course in law majors [2,3], while other majors generally take it as a non-core course. The degree of environmental legalization in various industries and fields involved in engineering majors, especially those engineering majors which focus on application and aim at cultivating the main force of industrial construction, mainly depends on how do professional and technical personnel trained by each major implement environmental laws and regulations in industrial production. Whether these technical personnel can understand, abide by and fulfill the corresponding responsibilities depends on the level of environmental law education offered by these majors. At present, engineering

majors in colleges and universities generally respond to the certification of engineering education majors. Under this background, how to reform the teaching of environmental law courses for different engineering majors is a problem worthy of profound discussion. This paper takes the safety engineering major of Jiangsu University which responds to the certification of engineering education as an example to profoundly discuss how to reform the environmental law course for this major and how to keep pace with the times.

2. THE TEACHING LIMITATION OF ENVIRONMENTAL LAW COURSES WHICH IGNORES THE CHARACTERISTICS OF ENGINEERING MAJORS

2.1. *The content of the course is incompatible with the class time*

For undergraduates majoring in engineering, such as safety engineering in Jiangsu University, environmental law is regarded as a basic elective course in their training program, which occupies a rather limited class time. If the teaching is based on the current textbooks, it is difficult for teachers to impart all knowledge in textbooks within the given period. In addition, it will be difficult to summarize the key knowledge and draw inferences about other examples from one example in time.

2.2. The interaction in classroom is limited and the teaching effect is poor

The mismatch between course content and class hours may easily result in the teachers being in a state of hurry for most of the teaching time, which further leads to the decrease of teacher-student interaction in class and the dull classroom atmosphere, thus it is difficult to arouse students' interest in learning this course [4]. In addition, as a course with rich theoretical knowledge, environmental law conveys a large amount of information. However, teachers in traditional classrooms are the main role in imparting knowledge, which makes it difficult for students to understand and digest the content in a short time, thus leading to poor teaching effect.

2.3. Students' subjective initiative in study is insufficient

The classroom with bored and inactive atmosphere as well as the difficult knowledge points will also make students lack of subjective initiative in learning environmental law. And in traditional teaching, its examination is conducted in a closed way, and its content of examination mainly focuses on the knowledge in textbooks. Furthermore, it is not difficult to do the examination. Thus, students generally recite those knowledge points before examinations and it is easy to pass such examinations and gain credits. Therefore, it makes students utilitarian in learning environmental law.

Thus it can be seen that, without considering the professional background, the disadvantages are very obvious in teaching environmental law by adopting traditional teaching method, which is dominated by theory teaching. It not only has poor teaching effect, but also is difficult to achieve the goal of course setting. Under the background of engineering major responding to its certification, it is clear that it is difficult for environmental law which is conducted in traditional theory teaching to be compatible with the development of engineering major which focuses on the engineering application (such as environmental engineering and safety engineering and other majors). It is imminent for engineering major to reform the teaching of environmental law.

3. IT SHOULD FULLY CONSIDER THE TEACHING OF ENVIRONMENTAL LAW WITH THE CHARACTERISTICS OF ENGINEERING MAJORS

3.1. It should set up the syllabus of environmental law that matches the engineering majors

In order to reform the teaching of environmental law, the first step is to make a relevant syllabus under the full condition of the specific characteristics of majors and graduation requirements [5,6]. Taking the safety engineering major of Jiangsu University as an example, the syllabus mainly includes the nature and objectives of the course, the content and teaching requirements of the course, the allocation of class hours and teaching methods, and the course assessment.

For the course nature and objectives, we have taken the opportunity of safety engineering major joining in the certification of engineering education to further clarify the specific corresponding relationship between course objectives and graduation requirements. Specifically, the adjusted course objectives include the following three aspects: first, it should master the basic concept of law, the composition of the socialist legal system with Chinese characteristics and the main content of China's environmental legal system; second, it should master the basic legal system of China's main environmental laws and administrative responsibility, civil responsibility and criminal responsibility, focus on the main content of the environmental pollution prevention and control law and understand the relevant requirements of sustainable development of the environment; third, it should understand and analyze the work requirements in the process of safe production and the practical problems related to the environment in the process of production from the legal perspective. The above course objectives can respectively provide support for the indexes of the following graduation requirements for safety engineering undergraduates: first, in the process of solving the safety engineering problems, we should comprehensively consider the social, health, safety, legal, cultural and environmental factors; second, we should correctly understand the possible impact of the practice of safety engineering on the sustainable development of the environment and society; third, we should understand and observe the law in the practice of safety engineering, abide by professional ethics and fulfill responsibilities.

Based on the indexes of course objectives and corresponding graduation requirements, we also adjusted the course content and teaching requirements. Taking the *Environmental Law* (Fourth Edition) edited by Jin Ruilin as the textbook, the course content after adjustment mainly includes the general environmental law focusing on theories (such as the concept, system, basic principles, basic legal system and legal responsibility of

environmental law) and special enactment of environmental protection with strong applied characteristics. In addition, considering that the safety engineering major has deeply applied in the fields of coal, petroleum, machinery and fire protection, the course content focuses on the introduction of mineral resources protection law and energy conservation and renewable resources law. After the reform, the teaching requirements and difficulties of each chapter are more suitable for the professional background of safety engineering. In terms of teaching methods, we mainly increase the group discussion of case analysis, while in terms of the allocation of credit hours, about 15% of the class hours are devoted to the group discussion of case analysis. The main forms of course assessment are class attendance, classroom performance, homework and closed-book examination. After the reform, we mainly increase the proportion of attendance in class, performance in class and homework and change the closed-book examination to open-book examination.

3.2 It should keep pace with the times for the course teaching of environmental law for engineering major

Taking the safety engineering major of Jiangsu University as an example, after the appropriate adjustment of the teaching content and structure, the difficult and important points of its teaching content is highlighted, and the matching degree between the teaching content and the safety engineering major is higher, so that sufficient explanation time is given to each important and difficult content in the limited class hours. For its explanation, it is appropriate to introduce new environmental protection events with high social attention or examples related to environmental law in daily life to assist the explanation, so as to not only enhance students' interest in the course, but also improve their concentration in the class. In addition, we should make full use of the increased discussion hours of case analysis to strengthen the relationship between environmental law and safety engineering, such as the selection of cases related to safety production and environmental protection. In addition to increase classroom interaction, it can not only strengthen the application of environmental law knowledge, but also can cultivate the students' ability in applying environmental laws and regulations in the solution of problems in safety engineering.

In order to further enhance the subjective initiative of students, we innovate teaching method through the establishment of online courses on the corresponding platform, which is also advocated currently. The mixing of online and offline courses is more helpful to improve the teaching effect. For example, in order to compensate the limited class discussion and make the environment law learning more interesting, we can search and gather videos about typical environmental law cases from the Internet embed links to online courses and ask questions related to

cases in advance. After watching such videos, students can discuss in groups by using communications tools such as WeChat or QQ, which can further increase the students' initiative and enthusiasm in learning environmental law and give full play to the guiding role of teachers. Another example is that online platforms allow teachers to upload recorded videos or courseware in advance, so that students can familiarize themselves with the content of the class in advance, which is more conducive to in-depth explanation of knowledge points in the offline class. It can be seen that online course is an important auxiliary teaching means of offline classroom.

In addition, the teaching content should be updated in real time in the process of environmental law teaching. Environmental laws and regulations are constantly undergoing the process of updating and improving. With the revision of laws and regulations and the release and implementation of new laws and regulations, it is natural that old laws and regulations will be invalidated and abolished. But the textbooks of environmental law is not in sync with the update and abolition of various specific environmental laws and regulations, which requires that teachers should pay close attention to the update and abolition of environmental laws and regulations in real-time, timely update teaching content and courseware and keep pace with the times in teaching content to make sure that knowledge of laws and regulations imparted to students are effective.

3.3 It should keep pace with the times for the examination method of environmental law for engineering majors

Taking the safety engineering major of Jiangsu University as an example, in the past, closed-book examination was the main examination method, which accounted for 80% of the final score, while class attendance, class performance and homework accounted for only 20% of the final score. In addition, the difficulty of the exam content is generally low and the examination of theoretical knowledge in textbooks accounts for 80% of the exam paper, which makes students cram knowledge into their heads before the exam to pass the exam. It is also one of the important reasons for the poor teaching effect.

At present, we take the opportunity of safety engineering major joining in the certification of engineering education to reform the assessment method of environmental law course. After the reform, the assessment is still conducted through homework, classroom discussion and written examination, but its proportion in the assessment has reached 40%, which increases significantly. Homework and class discussion are designed to test whether students grasp the basic and difficult knowledge points in the course through learning typical recent environmental cases. For example, students can collect recent environmental protection cases (such as cases of environmental administrative punishment and cases of environmental disputes, etc.) through homework, and

analyze the relevant knowledge points of environmental law involved in the cases, so as to test students' practical application ability of environmental law knowledge. In addition, the traditional closed-book exam has been replaced with an open-book exam, which accounts for 60% of the final grade. In the open-book exam, it is flexible in the assessment content. Students should connect current hot environmental events or cases to expound their own opinions. In terms of the assessment method, we attach great importance to examining students' ability in the application of knowledge of environmental laws and regulations in the environmental problems that may be involved in their major.

4. CONCLUSION

Whether professional and technical personnel in the field of industrial construction can implement environmental laws and regulations is an important part of promoting the process of environmental rule of law in China, which relies on the environmental law education level of corresponding engineering majors. In order to improve the teaching quality and effect of environmental law, we need to make the teaching syllabus suitable for the teaching of environmental law for engineering majors, determine the appropriate course content and objectives and clarify the corresponding relationship between the course objectives and the indexes of graduation requirements of specific engineering majors under the full consideration of the specific professional background. On this basis, we should optimize the proportion of theory teaching hours and case analysis hours, update the teaching courseware in real time according to the revision and abolition of laws and regulations and adopt innovative teaching means such as the mixed teaching of online and offline and diversified assessment method. Through the reform of course teaching, it can fully mobilize the subjective initiative of engineering students in learning environmental law,

increase their learning interest and also give full play to the guiding role of teachers in the teaching process, so as to effectively improve the teaching efficiency.

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