

Exploration and Practice of Multi-Party Collaborative Education Model for Environmental Engineering

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Abstract

Based on the analysis of the needs of environmental engineering professionals, this paper puts forward some ideas of establishing a multi-party cooperative education system for environmental engineering professionals, which is oriented by the needs of industry, so as to provide some references for the training of environmental engineering professionals.

Keywords

Environmental engineering; Multi-party; Collaboration; Education model.

1. INTRODUCTION

In recent years, our society has developed rapidly, and the material and cultural life of the people has been greatly enriched and satisfied [1]. But at the same time, air pollution, water pollution, urban garbage and industrial solid waste continue to increase, which to a certain extent also affects the further improvement of people's living standards and quality, and environmental issues have become a livelihood issue of great concern to the people. How to further improve the professional level of environmental engineering, so as to cultivate high-level, high-quality, and high-capacity environmental protection talents who not only have basic knowledge of environmental engineering, but also have professional knowledge in various industries, has become an important opportunity and challenge for higher education in environmental engineering.

Therefore, on the basis of in-depth analysis of undergraduate education status of environmental engineering major, it is an inevitable trend for environmental engineering specialty personnel training to meet both industrial and social needs to establish a multi-party collaborative education personnel training system based on new engineering ideas and oriented by industrial needs [2].

2. DISCUSSIONS

The establishment of a multi-party collaborative education and environmental engineering personnel training system oriented by industrial needs mainly includes the following aspects:

(1) On the basis of the current our country existing environment engineering characteristics and the feature of the talent training, according to the characteristics and school running orientation [3], adhere to the "systematic, applicability, times features", respectively from the study of general education, professional knowledge, professional skills to master, and evaluation of the capability of independent innovation determine the talents' cultivation standard of environmental engineering specialty, and combined with environmental engineering professional certification scheme, formulate environmental engineering professional training scheme.

(2) Deepen the building “to the learners as the center” of environmental engineering specialty cooperative education teaching mode, through the “tutorial system”, problem oriented courses, interdisciplinary seminar, flipped classroom, mobile classroom, engineering problem debate class, during class chemical enterprise real process simulation study and so on many kinds of ways, cultivate the students’ design thinking and engineering thinking, deepen the building “to the learners as the center” of environmental engineering education mode[4]. By advancing “practice classroom”, the “mobile classroom” model, strengthen students in chemical enterprise training, practice link of learning effect, at the same time set up schools, enterprises of all kinds of associated with environmental engineering laboratory or training room Shared mechanism, and achieve environmental engineering of multi-party cooperative education, cultivate students’ scientific way of thinking, innovation consciousness, project decision-making and problem solving skills.

(3) With the construction of educational informationization as the starting point, we will innovate teaching methods and carry out the pilot construction of MOOC and course case base, etc. [5], so as to provide quality teaching resources that can be promoted and used for reference for the cultivation of environmental engineering talents in our school.

3. SUMMARY

In conclusion, based on the idea of “building a major based on the industrial demand” advocated by the new engineering discipline and the joint mechanism of “educating people in a multi-party manner”, the exploration and practice of the teaching reform of “environmental engineering” are carried out. To “cultivate meet the demand of environmental protection industry practical ability of outstanding talented person” as the goal, on the basis of deeply analyze the existing teaching system and method, combined with environmental engineering professional certification requirements, reform the existing environmental engineering professional training scheme, restructuring and optimizing the course system, inductive concise teaching content, constructing innovative education practice teaching system, optimizing the environment engineering requirements and realization ways of the teachers troop, finally realizes the environmental engineering professional ability to further improve and develop with the social development that meet the needs of high-level personnel “win-win” goal.

ACKNOWLEDGEMENTS

This paper was supported by teaching reform program of JY-B201823.

REFERENCES

- [1] Hai-Feng H U , Ya-Min Z . The Current Situation, Problems and Countermeasures of Financial Development Concerning People's Livelihood in China[J]. Teaching and Research, vol. 78 (2013) No. 45, p. 66-69.
- [2] Li-Xin L I , Zhi-Wei S , You Z , et al. Exploration on New Practice Teaching Mode for Environmental Engineering Specialty[J]. Research and Exploration in Laboratory, vol. 29 (2016) No. 9, p. 48-50.
- [3] Jian L I , Xian-E X U , Xiao-Dong Y , et al. Orthopedic PBL teaching mode exploring under multidisciplinary collaborative teaching mode[J]. China Modern Medicine, vol. 12 (2015) No. 3, p. 34-36.
- [4] Chun-Yong Z , Chun-Zhi Z , Ying-Ping W . Reform and Exploration in Teaching the Principles of Chemical for Environmental Engineering Majors[J]. Journal of Jiangsu Teachers University of Technology, vol. 42 (2008) No. 45, p. 22-26.

- [5] Xia Z, Xueran J. The Discussion on the Principles of Environmental Engineering Teaching Methods[J]. Guangdong Chemical Industry, vol. 66 (2010) No. 45, p. 66-68.