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Improvement of Teaching Management Mechanism for Engineering Education Accreditation

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Abstract: In the context of engineering education accreditation, the teaching management mechanism should be student-centered and continuously improved. Therefore, the work of teaching secretaries and teaching supervisors also needs to be adjusted accordingly, in order to improve work efficiency and quality. This paper discusses the main contents and significance of engineering education accreditation, analyzes the relationship between teaching supervision, teaching secretary, and engineering education accreditation, applies the concept of engineering education accreditation to the work management of teaching secretary and teaching supervision, and proposes countermeasures to improve the work effect of teaching supervision and teaching secretary under the concept of engineering education accreditation.

Keywords: Engineering education accreditation; Teaching secretary; Teaching supervision

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1. Introduction

The Washington Agreement is one of the most influential international agreements for mutual recognition of engineering education degrees. China officially joined this agreement in June 2016. Since then, China's engineering education accreditation has entered a rapid development period [1,2].

1.1. Main contents of engineering education accreditation

The engineering education accreditation stipulates the basic requirements of the major in seven aspects: students, training objectives, graduation requirements, continuous improvement, curriculum system, teaching staff, and support conditions [3,4].

For example, continuous improvement includes three parts:

(1) Establishing a quality monitoring mechanism for the teaching process, with clear quality requirements for each major teaching segment, and regularly carrying out course system design course quality evaluation. Establishing an evaluation mechanism for the achievement of graduation requirements, and regularly conducting evaluations of the achievement of graduation requirements.

(2) Establishing a follow-up and feedback mechanism for graduates and a social evaluation mechanism with the participation of relevant parties outside the higher education system, and regularly analyzing

the achievement of training objectives.

(3) The confirmed evaluation results can be used for professional continuous improvement.

In addition, supplementary standards have been established for these majors, such as mechanical, computer, chemical and pharmaceutical, bioengineering and related majors, and water conservancy and environmental majors. These majors have set special requirements and supplements in terms of curriculum system, teaching staff, and support conditions [5].

1.2. Significance of engineering education accreditation

As an internationally recognized engineering education quality assurance system, engineering education accreditation has a positive promoting significance for universities, majors, and students.

Firstly, the engineering education accreditation majors help universities to standardize the management of education and teaching. At present, standards and concepts are widely recognized internationally, so higher education and teaching work must comply with this standard, which greatly standardizes the management work of universities and improves the quality of teaching in universities. At the same time, the more majors that universities have certified in engineering education, the stronger the universities' competitiveness, and the more the high-quality students that they can attract.

Secondly, engineering education accreditation majors help to promote the construction of professional connotation. In the past, professional construction had a certain degree of arbitrariness, and the curriculum and practical aspects were dependent on the professional background and preferences of teachers to some extent. Nowadays, the engineering education accreditation requires that each major must carry out professional connotation construction in accordance with international standards.

Lastly, engineering education accreditation helps the development of students. The engineering education accreditation majors are student-centered, and teaching work should aim to enable students to truly meet graduation requirements and skills, which helps to improve their employability. Due to the mutual recognition of majors certified in engineering education internationally, it is helpful for students to study or find employment abroad.

2. Integration of teaching supervision and engineering education accreditation

2.1. Current problems

Currently, most of the teaching supervision work revolves around teachers. The supervision mainly includes listening to the teacher's lectures, checking the teacher's preparation, explanation, teaching methods, and teaching attitude. Teaching supervisors pay less attention to these aspects, including teachers mobilizing students' learning enthusiasm, improving students' learning effectiveness and problem-solving skills. They are also less involved in indirectly helping to solve problems related to students' ideological progress, mental health, career planning, etc. in the process of explaining professional knowledge.

In addition, teaching supervisors also have several limitations. For example, there are differences in their professional knowledge, and supervision is a short-term action conducted based on class hours. Teaching supervisors often have little understanding of the training objectives and graduation requirements of the majors being attended. Therefore, teaching supervisors may pay insufficient attention to issues such as whether students have developed relevant scientific thinking skills, whether students have drawn reasonable and effective conclusions through experimental data analysis, whether students' performance evaluation in team cooperation is reasonable, and whether students have developed awareness of autonomous learning and lifelong learning through heuristic teaching methods, they may not be able to provide effective guidance.

The three major concepts of engineering education accreditation are student-centered, output oriented, and continuous improvement. Therefore, there is a certain deviation between the traditional teaching supervision work method and the certification concept of engineering education majors.

2.2. Improvement of teaching supervision work

In order to form an effective evaluation feedback improvement mechanism, the focus of teaching supervision needs to shift to student-centered work. To address the above issues, the following countermeasures are proposed:

(1) Strengthen the construction of teaching supervision system and diversify the methods of teaching supervision

The qualifications of supervisors should be regulated, and supervisors with significant professional differences should weaken their supervision work in engineering education accreditation. Each secondary college should also develop corresponding supervision work systems or methods to fully leverage the teaching supervision role of secondary colleges.

Diversified supervision methods should be adopted to reflect the complexity requirements of teaching work and effectively promote teacher development. There is a routine supervision that focuses on classroom teaching and discovers problems through listening. At the same time, there are also specialized supervision for key tasks or a certain teaching segment, such as the standardization of course assessment segments, the quality and standardization of graduation designs, and other special supervision. In addition, there is comprehensive supervision for multiple or all teaching tasks. By combining the three types of supervision organically according to the overall work arrangement of the school for engineering education accreditation, we can better promote teacher development and improve the quality of education and teaching.

(2) Implement an open and continuously improving mobility mechanism

Teaching supervisors should have deep professional knowledge in the subject, rich experience in teaching management, and strong teaching and research skills. They are experts in both teaching research and teaching management. Therefore, the school actively organizes supervision training and seminars, and supports supervisors to participate in them. High-quality talents suitable for teaching supervision work should be recruited into the teaching supervision team, to continuously enhance the vitality of the teaching supervision team. At the same time, the reasonable flow of supervisory personnel should be ensured and the teaching supervision work in universities should be continuously innovated.

(3) Clarify the supervision workflow of teaching supervisors

Before attending classes, the teaching supervisor should obtain information related to engineering education accreditation from the school's academic affairs office or relevant colleges, such as the teaching syllabus of relevant courses and student graduation requirements. Then corresponding research should be conducted. Supervisors can also access online teaching platforms such as Xuexitong and Wisdom Tree in advance. Then they can check if the teaching materials such as the syllabus, exam requirements, PowerPoint Presentations (PPTs), reference materials, audio and video materials, and homework have been uploaded.

During the listening stage, the supervision focus of the teaching supervisor should reflect the student-centered educational philosophy. A comprehensive evaluation from aspects such as teaching content, teaching process, teaching methods, and classroom teaching effectiveness should

be conducted. This is important in determining the size of educational output. The supervisor should supervise whether the teacher has achieved the following aspects: whether appropriate and effective teaching methods are used, whether problems are carefully designed, whether theory is integrated with practice, whether teaching has a certain level of interest, whether there is effective interaction between teachers and students, and whether the classroom atmosphere is active. Supervisors should focus on the following aspects of students: their initiative and enthusiasm to participate in discussions, the breadth, depth, and accuracy of answering teachers' questions, and the proportion of students submitting homework after class.

In the post-class stage, the teaching supervisor should communicate and provide feedback with teachers and students. After class, the supervisor should randomly select several ordinary students and class cadres, and communicate with the students through phone calls, online questionnaires, and other forms. The overall learning situation of students in the listening class should be understood, the highlights in teaching and learning should be identified, and the problems taught by the teacher and learned by the students should be identified. Supervisors should also promptly provide feedback to class counselors, homeroom teachers, and even students' parents on major common problems that students have.

3. Integration of teaching secretary work and engineering education accreditation

3.1. Current problems

The teaching secretary is the main staff member established in the secondary college to undertake teaching affairs, serving as a bridge and link between teachers and students, as well as between teachers and the school's academic affairs office. The teaching secretary is responsible for the daily management of various teaching tasks in the secondary college, and has a crucial impact on the operation of teaching management and the maintenance of teaching order in the entire secondary college.

Due to the fact that teaching secretary roles in universities are usually positioned as administrative personnel, there are usually no restrictions on majors during the recruitment process. Thus, teaching secretaries mostly come from non-related majors in our college. At the same time, the knowledge of management and secretarial studies is not rich enough, and there is a lack of professional and systematic training in practical work, and professional background, which is difficult to meet the business needs of the current position with professional background.

The concept of engineering education accreditation runs through activities such as talent cultivation, subject construction, professional evaluation, integration of industry and education, and teacher training in universities. The above teaching activities involve higher-level document policies, teaching management systems, professional training plans, faculty, and teaching environment. Teaching secretaries need to have a deep understanding and be familiar with them, and timely grasp the teaching situation.

The schedule of teaching activities in universities is usually scattered. The fragmented work content occupies the personal rest time of the teaching secretary. It is difficult to ensure the rest time of teaching secretaries, and there are relatively few opportunities for training and learning for grassroots affairs workers, which may lead to occupational fatigue for teaching secretaries. Their lack of enthusiasm for work is not conducive to improving work efficiency, forming a vicious cycle.

3.2. Improvement of teaching secretary work

The following measures can be adopted to improve the work of teaching secretary.

(1) A detailed job responsibilities and task manual for teaching secretaries should be developed to incorporate their functions into engineering education accreditation work. The job responsibilities of the teaching secretary should be refined and a work ledger should be established, these help the teaching secretary in summarizing complex work details, avoiding duplication or omissions, and achieving a refined work process.

(2) More systematic management theory teaching and practical training should be provided for teaching secretaries, the channels for improving and developing teaching secretaries should be established, to enhance their work ability and service awareness. Teaching secretaries should adjust their work methods under the guidance of scientifically sound theories, actively participate, continuously strengthen their understanding of the work content of teaching secretaries, gradually improve their work abilities, and perform well in teaching service management.

(3) The information level of teaching management should be promoted, information technology can be used to build a one-stop system for teaching management services, and the information, workflow, and simplification of teaching management should be implemented. Through the school website, WeChat official account, microblog, and other platforms, school teaching information can be released to teachers, students, parents, etc., publicity and reporting can be carried out, and the transparency of information and the efficiency of information transmission can be improved.

(4) The evaluation content of teaching secretary work should cover all aspects of the student training process. It involves various tasks in talent cultivation, including the construction of talent cultivation environment, teaching and educational management, and school-enterprise cooperation. The depth and breadth of student-centered service provided by teaching secretaries need to be expanded to guide and evaluate their work.

4. Retrospect and prospect

In order to improve the efficiency of engineering education accreditation and promote the orderly development of teaching management in the college, this article explored the work of teaching secretaries and teaching supervisors based on the concept of engineering education accreditation. We have found that there is a lack of corresponding institutional details in the work of teaching secretaries and teaching supervisors, and proposed optimization suggestions such as strengthening mechanism construction, establishing sound work processes, and improving the student-centered work management system. This paper hopes to improve the work level of both parties and promote the high-quality development of teaching secretary and teaching supervision work. It is significant for promoting the development of higher education and improving the comprehensive quality of students.

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References

[1] Wang W, Xiao J, Li D, et al., 2023, Exploration of Engineering Professional Construction in the Context of New Engineering and Engineering Certification. Education and Teaching Forum, 2023(2): 21–24.

[2] Liang J, 2022, Analysis of Improving the Efficiency of Teaching Secretarial Work in Universities in Teaching Management. Science and Technology Style, 2022(16): 43–45.

[3] Li Z, 2023, The Value and Dilemma of Teaching Secretarial Work in Universities: A Theoretical Reflection Based on Empirical Research. Journal of Hubei University of Economics (Humanities and Social Sciences Edition), 2023(1): 54–55.

[4] Tao J, 2020, A New Path to Enhance Teaching Supervision in Universities Under the Concept of 'Evaluating Teaching Through Learning' - An Empirical Analysis Based on Online Teaching During the Epidemic. Journal of the Management Cadre College of the National Forestry and Grassland Administration, 2020(4): 29–35.

[5] Dai H, 2021, Discussion on the Reform of Online Teaching Supervision in Local Undergraduate Universities - Thinking Based on the COVID-19. Journal of Ankang University, 2021(3): 61–65.