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How does the Civil Engineering Major Respond to the Development of Undergraduate Vocational and Technical Universities

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Abstract: In the current undergraduate-level vocational and technical university development process, civil engineering majors should clarify their professional development positioning, formulate scientific and reasonable teaching and training programs in a timely manner, and introduce more industry development elements. At the same time, actively set up teaching plans and practice teaching content, integrate school-enterprise cooperation, and improve the quality and efficiency of related teaching work. This article briefly analyzes and discusses the current strategies of civil engineering in the development of undergraduate-level vocational and technical universities.

Keywords: Civil Engineering; Undergraduate Level; Vocational and Technical University

In the current process of teaching reform, different undergraduate colleges and universities also need to switch to different career development paths. The major of civil engineering is a relatively practical major, which has significant technical characteristics. In the corresponding teaching management work, the school should actively build a team of dual-qualified teachers, integrate the school-enterprise cooperation, and adopt the teaching management strategy of class certificate competition to ensure that the relevant teaching work is pertinent and focused.

1. Develop a teaching training plan and introduce more industry elements

In the current undergraduate-level vocational and technical university development process, the civil engineering major should explore a path that conforms to the development of this major. Specifically, civil engineering majors should actively formulate and improve existing talent training programs. At the same time, in the process of formulating talent training programs, introduce more industry content and set up professional teaching courses in a timely manner. And in the process of setting the teaching plan and the content of the teaching course, we extensively absorb the opinions of industry experts and related construction companies to ensure that the depth and breadth of civil engineering course teaching can be improved, and that relevant teaching work can achieve theoretical and practical teaching. The combined teaching methods provide targeted professional talents for the development of society.

Specifically, schools should appropriately increase the proportion of credits for civil engineering practice teaching and increase the number of teaching hours. Corresponding to the cutting-edge technology of the current era, set up corresponding teaching courses. For example, in recent years, the corresponding “Construction Engineering Quality Inspection” course has been set up for the teaching content of civil engineering for engineering quality control, which effectively compensates for the teaching defects of traditional civil engineering in terms of engineering quality. At the same time, it has also changed the situation of heavy curriculum theory and insufficient practical teaching in the past

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teaching management work, making the corresponding teaching management work more suitable for the nature of students' subsequent jobs.

2. Construct a reasonable practical teaching plan and teaching evaluation mechanism

In the current undergraduate level vocational and technical teaching work, the school should improve the practicality of relevant teaching courses for civil engineering and corresponding engineering majors. In the process of improving the practicality of courses, we should reasonably combine experimental courses, course design, course assessment and other related teaching work, improve the practical teaching management mechanism, broaden the depth and breadth of students' understanding of the industry, and ensure that students can manage related teaching. The mechanism and assessment mechanism are clearly controlled and understood.

Specifically, the corresponding experimental education content should comprehensively consider the skill requirements of relevant jobs on the market for talents, so as to realize the optimization and integration of existing teaching courses. At the same time, in the process of experimental teaching, the teaching strategy of dividing relevant professional groups is realized, and every student is required to participate in the learning link of the experiment. In addition to the need to strengthen the corresponding practical education work, relevant teachers and colleges also need to implement targeted teaching assessments for students.

In the teaching evaluation link, reasonable use of curriculum design and graduation design, a collaborative and integrated evaluation form, allows students to display the learning results of the building architecture course through a practical project or design project. At the same time, at the level of the corresponding concrete structure design, students are required to realize the planning and design of the floor and frame structure, and conduct in-depth analysis and explanation in the basic engineering design section and the related equipment design section. In short, combine scientific and reasonable graduation design to timely test students' learning achievements, integrate current targeted teaching management strategies, pay attention to students' gains and feelings in the process of graduation design, and provide objective and fair performance evaluation.

In addition, it is necessary to effectively cooperate and communicate with construction companies to provide students with a practical learning base, requiring students to complete basic civil engineering bidding assignments and preparations for materials and equipment within the corresponding practical learning time. A comprehensive understanding of the main body, decoration, doors and windows, basic projects involved in civil engineering, as well as related building construction processes, will shorten the adaption period of students to subsequent positions. After the students have completed the practical study in the enterprise, the teachers also need to conduct corresponding assessments, combined with the corresponding evaluation content such as the internship log, student defense, and internship defense to test the student's learning results.

3. Set up diversified assessment modes

Undergraduate-level vocational and technical universities need to use teaching results as a guide to reverse the corresponding teaching management and control items. In the process of evaluating teaching results, it is necessary to combine standardized, systematic, and standardized assessment management strategies, and at the same time introduce a brand-new assessment control model to break the past 60-point passing assessment concept. At the same time, more practical teaching courses are incorporated into the assessment process. For example, the drawing and recognition tasks involved in civil engineering majors, combined with the CAD drawing course and related teaching assessment content, are included in the final assessment test to test the students' ability to draw and recognize images. Secondly, the "Introduction to Civil Engineering" course carried out for the freshman semester can be combined with the corresponding civil engineering drawing and image recognition, integrating the assessment strategy of the competition form, and taking the student's competition score as the assessment result, and finally realize the goal of the student objective and comprehensive evaluation.

Secondly, schools and teachers also need to integrate the assessment system of class competitions, and secondly combine the certificate assessment work to clarify the basic assessment content. In the process of designing graduation assessment scores, teachers should effectively adjust the weight of graduation design scores and graduation exam scores, and set them in the form of 7:3 as much as possible. At the same time, the content of the registration vocational qualification certificate related testing is introduced in the assessment content to guide students to conduct targeted learning.

4. Build a professional talent training mechanism

In the targeted talent training mechanism, the civil engineering major should promptly update the old outdated teaching management concepts, and at the same time actively build and construct the current teacher team, integrate the double-qualified teacher team, and improve the quality and efficiency of practical teaching work. Secondly, integrate experimental teaching, carry out industry-university-research cooperation, and realize the teaching and training of students' professional spirit and professional ethics.

Secondly, in the process of building a teacher team, the school should actively build a double-qualified teacher team. In the process of constructing a double-qualified teacher team, combine school-enterprise cooperation and send teachers to the construction enterprise for in-depth learn and participate in architectural projects that mirror each other. At the same time, the school can also hire employees with rich work experience in construction companies to act as teachers and achieve targeted practical education and training for students.

Thirdly, combine industry-university-research cooperation to realize effective communication and communication between relevant teaching work and local industry associations and enterprises, timely clarify the teaching focus and direction of civil engineering majors, integrate the teaching management strategies of course certificate competition, and improve relevant teaching. The quality and efficiency of the work.

At the same time, schools and teachers also need to pay attention to the teaching and guidance of students' spiritual level, guide students to carry out corresponding work and study correctly, improve students' basic professional ethics, and cultivate students' professional ethics.

In addition, civil engineering majors also need to build a systematic laboratory to ensure that the experimental teaching work is carried out steadily and reliably. Specifically, in the process of in-depth cooperation between industry, university and research, civil engineering majors need to rationally integrate and optimize the internal resources of the laboratory, combine the secondary colleges and the top of the school, and rationally integrate and use the internal public experimental platform of the school. Under the premise of satisfying the development of the basic construction of disciplines, the construction of applied scientific research and teaching facilities shall be implemented in an all-round way. At the same time, more industry elements are introduced in the process of school management, making the vocational teaching work of colleges and universities more professional and characteristic, and promoting the virtuous circular development of the local economy.

In the process of building the laboratory, we should also break the traditional reserved thinking. The school should make a clear and objective understanding of the functions of the laboratory, cooperate with enterprises as much as possible, improve the knowledge points that deviate from the civil engineering industry in the experimental teaching, and realize the integration and optimization of the experimental content. Containing similar experimental content is merged to streamline laboratory equipment and instruments, and reduce laboratory funding.

5. Conclusion

Generally speaking, at the level of current teaching concepts, both students and teachers in civil engineering majors need to make a clear analysis of the basic development needs of current undergraduate-level vocational education, get rid of the ideological misunderstandings of vocational education in the past, and ensure the school's teaching management can face the transformation of professionalism and adjust the mentality of students and teachers in a timely manner.

References

1. Zhong B, Zhang L, Ren Y, et al. The orientation of training high-end technical skills-based undergraduate talents——Taking the training of civil engineering professionals as an example. Education Teaching Forum 2019; 397(03): 262- 264.
2. Chen Y, Li B. Exploration of undergraduate level vocational education for road and bridge engineering technology. Fujian Building Materials 2020; 235(11): 115-117.