

Construction and Practice of an Excellent Grass-Roots Level Teaching Units in Colleges and Universities

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Abstract. It is of great significance to build an excellent grass-roots level teaching unit for improving a professional teaching quality and a course teaching level in colleges and universities. This paper discusses the requirements and evaluation standards for constructing an excellent grass-roots teaching units in colleges and universities from following aspects: rules and regulations construction, teaching team construction, teaching organization process, curriculum and textbook construction, teaching research, specialty construction, practical teaching, condition guarantee and talent cultivation ability. Combined with relevant standards, a practical process of building an excellent grass-roots teaching unit is discussed for the Department of Light Industry Machine, Zhengzhou University of Light Industry. Related works of constructing an excellent grass-roots teaching unit for the Department of Light Industry Machinery, Zhengzhou University of Light Industry, improves the specialty construction level and provides reference for the construction of peer units in colleges and universities.

Summary

In order to improve the teaching management system, strengthen the construction of grass-roots level teaching units and increase the ability of talent cultivation, the works of meeting targets and creating excellence for the grass-roots level teaching units have be carried out in colleges and universities[1].

In the construction of grass-roots level teaching units, take high moral values establishment and people cultivation as the fundamental task of education, improve the teaching quality as the core, normalize construction as the focus, innovate organization form, clear positioning function, improve the management system, perfect operating mechanism, fully mobilize the enthusiasm of teachers' education in colleges and universities, practical play an important role of grass-roots level teaching units in the cultivation of talents.

The Machine design, manufacturing and automatization specialty in Zhengzhou University of Light Industry is the only mechanical specialty which maintains the characteristics of light industry in the China. Around the orientation of school-running and development planning, three specialized directions, including machine design and automation, machine manufacture and automation, mechanical and electronic engineering, have been formed. Especially for the

specialty direction of machine design and automation, with the characteristic of design and manufacture of automatic machinery and packaging machinery, it has a certain influence in the industry.

Department of Light Industry Machine in School of Mechanical and Electrical Engineering, Zhengzhou University of Light Industry, is responsible for the teaching work of the specialty direction of machine design and automation. In order to build the an excellent grass-roots level teaching units, Department of Light Industry Machine has carried out fruitful exploration and practice for rules and regulations construction, teaching team construction, teaching organization process, curriculum and textbook construction, teaching research, specialty construction, practical teaching, condition guarantee and talent cultivation ability[2-5].

Construction Content and Evaluation Standards of an Excellent Grass-roots Level Teaching Units

The construction and evaluation of an excellent grass-roots level teaching units should conform to the following contents:

(1) Organizing teaching: teaching units should be able to organize and implement teaching tasks according to the requirements of talent training programs and teaching plans, carry out diversified teaching evaluation and teaching quality analysis, standardize classroom teaching, strictly enforce classroom discipline, improve classroom teaching level, and supervise and urge all teaching links

(2) Specialty construction: in specialty construction, teaching units can research and carry out the specialty construction plan, make the talent training scheme, promote industry enterprise organization to take part in the specialty construction with a variety of form, according to the development trend and talent demand of the related disciplines, the relevant industries and field. A grass-roots level teaching units shall play an important role in specialty assessment, professional certification, specialty construction.

(3) Curriculum and teaching materials construction: teaching units should establish a curriculum system in conformity with the development of specialty and academic disciplines, organize and standardize planning of the curriculum construction, syllabus and curriculum standard; update course contents, integrate the latest discipline front knowledge, industry development, scientific research achievements into classroom teaching; strengthen depth integration between the modern information technologies and education, promote the development and application of the micro class and online open courses; make various forms teaching resources construction.

(4) Practice teaching: teaching units should make scientific practical teaching plan, standardize setting practical teaching link, strengthening the construction of practical platform; strengthen the guidance including experiments, practical training and graduation design; impel education reform of innovation and entrepreneurship, guide students to carry out the discipline professional competition, and innovation and entrepreneurship practices; establish a stable off-campus practice teaching base, perfect the fusion between industry and education, the cooperation education mechanism between university and enterprise.

(5) Teaching research and reform: teaching units should organize teachers to conduct comprehensive research and practice of teaching reform, strengthen the application and popularization of teaching achievements; industriously undertake all kinds of projects for teaching research and teaching quality engineering; regularly carry out teaching seminars and

exchange activities, organize peers to mutually listen, watch teaching, make teaching competition, carry out peer review. All the teachers shall participate in teaching seminars at home and abroad, more timely understand the latest development in the field of teaching reform.

(6) Teacher development: teaching units should strengthen the construction of teachers' ethics and virtue, and enhance the sense of responsibility and mission of teachers; implement the basic system that professors give a class for undergraduates; strengthen the construction of teaching echelons, formulate teacher training plans, strictly gate process of new teachers' classes; give teaching guidance, promote the imparting, assistance and guidance of teaching work for young teachers. In the construction of teaching team, teachers should be arranged to go to domestic and foreign universities and relevant institutions for further training.

Practice of Building an Excellent Grass-roots Level Teaching Units in the Department of Light Industry Machine, Zhengzhou University of Light Industry

(1) The rules and regulations construction: the Department of Light Industry Machine earnestly learns and strictly implements the relevant management system, gives full play to the democratic decision-making role in the decision making; has enacted management systems associated with the teaching activities.

In order to guarantee the teaching order and teaching quality, improve the teaching and researching activities, normalize the appraisal of prelection for the teacher, strengthen the teaching quality evaluation, the Department of Light Industry Machine sets up "teaching quality control and management method". In order to promote the cultivation and strengthen the management of young teachers, we established the "13th five-year development plans".

(2) The teaching team construction: the team members adhere to taking high moral values establishment and people cultivation, consciously abide by Professional ethics of teachers. Principal of the team is a provincial excellent teachers, in charge of all specialty work of "machine design, manufacturing and automation" of the university, has rich experience of teaching management. The teaching team is core of the provincial excellent teaching team of "machine design and automation". Our teaching team consists of eleven teachers, forms a positive combination team with old aged, middle aged, and young people.

In the teaching team, the core members are academic representatives of the mechanical discipline and the members of teaching supervision group of the school of mechanical and electrical engineering, they regularly carry out the teaching level evaluation and teaching quality analysis meeting, to improve the teaching level of young teachers.

The Department of Light Industry Machine attaches importance to the cultivation of teachers' engineering ability and strengthens the construction of the teaching staff with bi-expertise.

First, encourage the in-service teachers to go to the enterprises, and the production lines. Second, strengthen the team construction of part-time teachers. Combined with specialty construction, increase the recruitment of influential experts, industry professionals and experienced front-line workers as part-time teachers for graduation design and production practice's guidance. Third, full-time teachers are encouraged to participate in various forms of continuing training and professional academic conferences to improve their education teaching ability. In Department of Light Industry Machine, the proportion of bi-expertise teachers accounts for 72%.

(3) Teaching organization: according to the talent training scheme and teaching plan, the Department of Light Industry Machine carefully organizes teaching tasks, carries on the thorough research and planning on curriculum construction target.

The our professional curriculum system has been optimized to build a applied talents knowledge system. In the course setting, we use the knowledge content and advanced technology for the core competency cultivation requirements as the goal.

For cultivating the students' professional knowledge, we have set the curriculum system according three core ability of light industry machine design, manufacture and control. All professors in our teaching unit have given classes for undergraduate students.

Department of Light Industry Machine has established the perfect teaching evaluation and feedback mechanism, include: one, student evaluation. The evaluation results will feedback to the teacher in time, the teaching effect tracking mechanism is established; two, mutual evaluation of classroom teaching. We arrange 2 or 3 teachers listening in-class for per course, and form evaluation for three aspects of classroom teaching content, teaching effect and teaching order, timely feedback to the lecturer; three, evaluation of teaching supervision. Teaching supervisions evaluate teacher's teaching situation in accordance with the university requirements. All above evaluation results are used for the continuous tracing and improvement of teaching quality.

Teachers of our department implement the system of mutual listening in classroom teaching, and timely feedback and exchange on classroom teaching. Teachers listen mutually with each other for 9 times in each academic year.

We regularly organize all teachers of the teaching unit to listen together, observe and comment on the teaching effect of one of the teachers, so as to improve teaching together

(4) Course construction: the Department of Light Industry Machine pays attention to the construction and update of curriculum system, on the basis of the latest development direction for light industry machine, formulate detailed course construction planning, syllabus and curriculum standard.

In building the professional course group system, we adopt a construction method with the "point, line, plane, body". First of all, according to the professional training objectives to determine the main knowledge points; Then, the main knowledge points are connected to form the backbone line (that is, the main courses); Once more, the main courses are used to form plane course group; Finally, the curriculum group system is constructed by the plane curriculum group. All teachers can update the curriculum content in time and integrate the latest scientific research achievements, subject forefront and industries development into classroom teaching.

In the process of teaching, strictly accordance with the engineering certification requirements, we refine knowledge and competency objectives from the course teaching content, teaching progress, teaching step, assessment method, grading system and curriculum ability achievement degree, which completely covers corresponding graduation requirement's index points. When finish the course, we analysis achievement degrees for the course objective and make continuous improvement.

(5) Teaching research: teachers in the Department of Light Industry Machine have carried out a lot of practice and research on teaching reform, and obtained a lot of teaching research results, which include 2 first prizes and 1second prize of provincial education achievement awards, and many grand prize, first prizes and second prize of university education

achievement awards. 87% of teachers in our department have participated in the research on teaching reform.

Teachers in the Department of Light Industry Machine actively engaged in researching on teaching, and in a timely published research papers, which produce greater influence in the field. In the past two years, teachers in our department published 11 research papers, each person published 0.5 teaching research papers every academic year.

The department regularly carries out teaching seminars and exchange activities every weeks, discusses new problems in teaching. The backbone teachers in our department participate in more than one off-campus teaching seminars average one year to timely understand the latest development in the field of teaching reform.

(6) Profession construction: according to the "13th five-year development plans" of Zhengzhou University of Light Industry, we established the "13th five-year development plans" for the professional construction. Based on the target requirements of talent cultivation, we have revised the "talent training scheme" once every two years. The new "talent training program" highlights the characteristics of talents cultivation, strengthens the breadth and depth of knowledge for the talents training level.

Based on the training scheme executed, the curriculum system of our specialty is in good correspondence with the graduation requirements index points decomposed, analyze and explain the supporting relationship of the core courses. Based on the graduation requirements index points decomposed, the syllabus of relevant courses was formulated and revised. In the syllabus, the target points of the course and graduation requirements were reasonably corresponded. The total credit requirements for graduation are stipulated, and a reasonable and complete teaching plans are given.

In the course system revision, enterprises or industry experts were invited to participate. In 2018, the specialty of machine design, manufacturing and automation passed the professional certification of China Engineering Education Professional Certification Association

(7) Practice teaching: in accordance with the teaching requirements, the Department of Light Industry Machine scientifically enacts practice teaching plan, sets practice teaching links such as course experiments, course designs, graduation designs, cognition practices, production internships. We carry out the in-class practice teachings and off-campus practice trainings with high quality. Our all specialized courses possess experiment.

In recent syllabus change, we further strengthen experimental classes in the proportion of total credit hours. The types of experiments are divided into verification experiments and comprehensive experiments. We increase the proportion of the comprehensive experiment and innovative experiment. The experiment teaching has the veto power for the course assessment. To strengthen the construction of the practice teaching base, more than ten stable off-campus practice teaching bases have been set up. We put forward credit requirements for students' innovation and entrepreneurship.

(8) Talent cultivation ability: the Department of Light Industry Machine attaches great importance to the teacher's teaching to raise the level. Teacher' teaching skills have been awarded many times in university-level and provincial-level competitions. In the student evaluation organized by the university, teachers get excellent ratio more than 40%.

Teachers in the Department of Light Industry Machine direct students' innovation and entrepreneurship activity, guide students to actively participate in the teachers' scientific research project, cultivating students' innovation consciousness, creative spirit and entrepreneurship ability. We encourage students to actively participate in the whole nation

competition, such as the students mechanical design innovation competition and students' engineering training comprehensive ability competition. We have guided students to participate in various scientific and technological innovation activities up to hundreds of person-times, the students have obtained more than 30 provincial and national awards.

Conclusion

Through the construction of an excellent grass-roots level teaching unit, teaching level of the teachers in the Department of Light Industry Machine, and running level for specialized subject have increased significantly.

The "mechanical design and theory" research direction is one of the support directions for research work of School of Mechanical and Electrical Engineering, Zhengzhou University of Light Industry, which was praised as excellent in 2017 evaluation for Henan province key discipline of mechanical engineering. The employment quality of graduates for our specialty maintains the leading in the Zhengzhou University of Light Industry. The students' graduation rate and degree awarding rate have kept a good state.

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