Application of action oriented teaching in electrical control teaching

Zhenlong Sun
Liaoning University of Science and Technology, Benxi, Liaoning 117004

Abstract: with the steady progress of education reform, the teaching concept has gradually changed from paying attention to theoretical knowledge to paying attention to practical teaching. This requires teachers to actively innovate the teaching mode of electrical control, so as to improve the overall quality of teaching. At this time, teachers can try to use action oriented teaching to carry out electrical control teaching, and arrange learning tasks according to the real production environment of the industry, which can organically combine practical teaching with theoretical teaching, and then enhance students' comprehensive quality. Based on this, this paper explores the application of action oriented teaching in electrical control teaching for reference.

Key words: action oriented; Electrical control; Teaching; application

With the continuous promotion of industry upgrading and transformation, the demand for applied talents is increasing. If colleges and universities want to keep pace with the development of the industry and cultivate the applied talents they need, they can use action oriented teaching to innovate the current education mode, especially in the teaching of electrical control, which requires high practical ability of students. In this way, through the application of action oriented teaching method in electrical control teaching, students can actively explore the teaching content, gradually realize the fun of learning electrical control related content, and their practical ability can also be significantly improved.

1. The main characteristics of action oriented teaching method

1.1 Highlight students' subjectivity

Highlighting students' subjectivity is one of the significant characteristics of behavior oriented teaching method, which can meet the requirements of education reform, and is also an effective way to achieve the expected goal of electrical control teaching. In behavior oriented teaching, highlighting students' subjectivity is mainly reflected in their participation in the whole process of teaching, such as information collection, learning task and plan formulation, goal implementation, practice result feedback and evaluation. Every link requires students' active participation, and teachers only need to give full play to their guiding role. At the same time, the teaching method requires students to complete learning tasks in groups, which can effectively enhance students' initiative, and their ability of unity and cooperation can be significantly improved.

1.2 Learning outcomes are diverse

In the process of behavior oriented teaching, teachers and students need to cooperate to complete the assigned learning tasks, but the learning results often vary from person to person. This is mainly because behavior oriented teaching focuses on enhancing students'

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comprehensive ability, rather than focusing on the results of learning tasks. Therefore, when using behavior oriented teaching, teachers need to pay enough attention to students' participation and knowledge accumulation. Therefore, when the task is completed, each student will gain a variety of results, which will significantly improve the students' learning ability and thinking flexibility.

1.3 Diversified teaching evaluation

Under the background of education reform, the diversification of evaluation is the teaching goal pursued by teachers. In the past teaching process, teachers usually focused on the evaluation of students' learning results, which is not conducive to students' development, but also restricts students' enthusiasm to participate in teaching. However, the behavior oriented teaching evaluation has multiple characteristics. In addition to evaluating students' learning results, it also pays attention to the evaluation of students' comprehensive abilities such as innovation ability, practical ability and cognitive ability. Therefore, the diversity of evaluation belongs to one of the important characteristics of behavior oriented teaching method.

2. The significance of action oriented teaching in electrical control teaching

2.1 It is conducive to the implementation of the idea of teaching students in accordance with their aptitude

In the teaching of electrical control, students not only need to have strong practical ability, but also have a more flexible way of thinking. The action oriented teaching method can provide a broad platform for students to show themselves, fully demonstrate their subjectivity in teaching, facilitate teachers to implement the idea of teaching students according to their aptitude, and fully stimulate students' potential. For example, students with strong learning ability are required to quickly detect or troubleshoot the problems existing in the electrical control system; For students with relatively weak learning ability, they can be required to draw the electrical control schematic diagram. Therefore, teachers can effectively implement the idea of teaching students according to their aptitude through the application of action teaching method, so as to ensure that each student can get the corresponding development.

2.2 Conducive to optimizing students' knowledge structure

Setting learning tasks according to teaching objectives is the most significant advantage of action teaching method. Moreover, students will explore learning tasks in groups, and promote them to continuously optimize their knowledge structure in task discussion, task analysis, task completion and other links. At the same time, teachers can adjust the teaching of electrical control according to the specific performance of students in each link. For example, for students' mistakes in the task completion process, guide students to develop a more scientific and comprehensive test plan, which can further improve students' knowledge structure.

2.3 Conducive to stimulating students' interest in learning

In action oriented teaching, students occupy a core position in the teaching of electrical control, and can organically combine practical teaching with theoretical teaching, so as to promote them to learn and use. In addition, the teaching method can concretize the abstract knowledge, make the teaching atmosphere more interesting, lead students to actively use the knowledge they have mastered to solve practical problems, and fully enhance their self-confidence in learning the teaching content of this section, so as to improve students' interest in learning the relevant content of electrical control, and ultimately improve the quality of electrical control teaching as a whole.

3. Specific application process of action oriented teaching in electrical control teaching

This section takes the positive and negative rotation PLC control of the motor as an example, and carries out teaching activities by means of cooperative exploration and task driving, so as to promote students' active participation in the whole process of electrical control teaching, so as to effectively improve the overall quality of electrical control teaching. In this regard, the specific application process of action oriented teaching in electrical control teaching will be elaborated from three aspects: pre class preview, in class teaching and after class teaching.

3.1 Pre class Preview

Before the teaching of electrical control, teachers need to upload the learning resources and task list to the designated platform in advance, and remind students to check the task in time. Students need to learn relevant resources independently, analyze the task list and find information in groups according to the relevant requirements of the task list. This will not only expand students' learning space, but also facilitate teachers to timely grasp students' preview, adjust the application process of action oriented teaching in electrical control teaching, and lay a solid foundation for the orderly development of follow-up teaching activities.

3.2 In class teaching

1.Task introduction

In action oriented teaching, teachers can release the assignment book to students with the help of learning link, and introduce real cases in the industry into the task, For example, "the teacher, as the project leader and the student, as the technician, designs the PLC control system of the manipulator, which requires the manipulator to carry the workpiece from working position 1 to working position 2, and can realize manual and automatic operation. Each action can be operated separately during manual operation, and the manipulator can work continuously for one cycle by pressing the start button at the origin during automatic operation." In this way, it is easier to enhance students' sense of identity through the introduction of real cases, and then lead them to establish a correct career outlook.

2.Task analysis

In the link of task analysis, teachers need to organically combine with students' pre class preparation and divide relatively complex learning tasks into several small tasks. It is not only convenient for students to formulate a practical scheme, but also the idea of completing

the task is clear. At the same time, they also set up the electrical control flow chart in the form of group cooperation, and discuss the problems encountered in the process of setting up the flow chart, so as to urge students to design the best task scheme.

3.Task implementation

In this link, all teams need to work together to complete the following parts: i/o address allocation, hardware wiring diagram design, programming, hardware debugging, etc. However, in the specific implementation process, teachers should guide students to reasonably divide the responsibilities of members, so as to ensure that all students can participate in it. Details are as follows:

First of all, according to the relevant requirements, the i/o address should be reasonably allocated, and the manipulator operation process should also be reasonably set. In order to ensure that students can accurately grasp the specific process, teachers can present the real work process of the micro video manipulator with the help of the micro video manipulator, and promote students' intuitive understanding of it. Or, relying on the virtual simulation software and taking human-computer interaction as the breakthrough point, the work process is gradually transformed into the sequence function diagram. Through this teaching form, students' professional skills can be significantly improved.

Secondly, the hardware connection diagram is designed reasonably. When students finish the design, they can be guided to use virtual simulation software to overlap the hardware. This can maximize the avoidance of students' disorderly wiring and direct wiring on the experimental box, and teachers can also monitor students' learning in real time, so as to improve the effectiveness of teaching.

Finally, to carry out comprehensive training activities, it is necessary to reasonably divide the contents of software programming, debugging and hardware wiring. Each group should coordinate the responsibilities of its members and effectively enhance their sense of unity and cooperation. In addition, in the actual process, teachers should teach students 5S operation specifications and precautions, so as to make professional quality permeate in electrical control teaching, and effectively improve the application effect of action oriented teaching.

4.Task presentation and summary

First, show the results. In this link, each group will send representatives to show the results to other students in the form of PPT, but pay attention to the highlights and innovations of the task, and also share how the group solves the problems encountered in the process of the task. Secondly, the task summary. In this link, teachers should reasonably summarize the points of attention and error prone points in this task, so that students can thoroughly understand the teaching content of this section. At the same time, after the completion of the task, students should arrange the training place in time and in strict accordance with the 5S standard.

5. Task Evaluation

Teachers need to evaluate students' performance before, during and after class, as follows: evaluate students' online preview before class; In the course, the evaluation is carried out from the aspects of project process, project operation, professional quality and so on; After class, students' performance in the task presentation needs to be evaluated. In addition, teachers also need to enrich the subject of evaluation. In addition to teachers' evaluation of students, students, counselors, enterprises and schools can also participate in it, so as to effectively improve the effectiveness of teaching evaluation.

6.Review and feedback

After the action oriented teaching, teachers should guide students to master and review the relevant theoretical knowledge, and review the contents involved in the action oriented teaching. Moreover, teachers should also guide students to carry out review activities in time according to the law of students' forgetting, so as to prompt them to discover their own shortcomings in review and feedback, so as to highlight the application value of action oriented teaching in electrical control teaching and effectively improve students' learning efficiency.

4. Application of action oriented teaching in electrical control teaching

4.1 Clarify teaching methods

Action oriented teaching method is not a single teaching method. Teachers need to carry out electrical control teaching in strict accordance with the teaching content, and select action oriented teaching method to promote the efficient combination of various teaching modes and further improve the effectiveness of electrical control teaching, such as situational teaching method, role-playing method and cooperative teaching, This can bring students a unique learning experience. In addition, due to the large number of teaching contents of electrical control, when applying the action oriented teaching method, we should also use the project teaching method or text guided method to truly reflect the innovation and creativity of electrical control teaching. In addition, to enhance the flexibility of students' thinking, we can choose brainstorming method, which not only fundamentally breaks the defects brought by the traditional teaching mode, but also further realizes the mutual integration of knowledge and skills, so as to effectively improve students' learning efficiency.

4.2 Pay attention to teaching students according to their aptitude

In the traditional electrical control teaching, however, due to the teachers' excessive pursuit of systematicness, they did not strictly follow the actual situation of students and failed to teach students according to their aptitude. Therefore, in the action oriented teaching, if teachers want to change this defect and deficiency, they should strengthen the analysis of the action oriented method, teach students according to their aptitude, reconstruct the teaching material system, and create a new education system model. In particular, educators need to do a good job of pre preparation, constantly broaden their cognitive scope, and take the curriculum objectives as the basis, Pay attention to ability and knowledge to further realize the comprehensiveness and systematicness of the course content. It is worth noting that when grouping, we need to fundamentally develop strengths and avoid weaknesses, not only to improve students' learning enthusiasm, but also to realize the integration of theory and practice, so as to promote the significant development of students' thinking.

4.3 Changing the roles of teachers and students

Restricted by the traditional education concept, teachers often ignore students' subjectivity, which is not conducive to mobilizing their enthusiasm. However, under the action oriented teaching, teachers should actively change their education concept, from the subject to the guide, fully highlight students' subjectivity in electrical control teaching, and promote real-time interaction between teachers and students in the teaching process. At the same time, through the role change, students can be given corresponding encouragement, guided to analyze, think and solve problems in time, and their professional skills can be significantly enhanced

Summary:

In a word, under the background of education reform, college teachers should actively optimize the current teaching mode based on the needs of social development. Therefore, in the actual teaching, teachers should use the action oriented method to carry out teaching activities, promote the students' comprehensive quality to be significantly improved, so as to ensure the students' employment competitiveness to be significantly enhanced, and then effectively improve the employment rate of colleges and universities, and inject inexhaustible power into the sustainable development of the industry.

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