

Exploration on Online and Offline Mixed Teaching Reform of Metallography and Heat Treatment Course

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Abstract : With the continuous development of modern education and teaching, information technology also plays an important role in different disciplines. Metallography and Heat Treatment is a very important vocational basic course for the major of material forming and control technology. In order to learn this course well, teachers need to actively adopt diversified teaching methods and online and offline comprehensive counseling, so that students can achieve all-round improvement in learning through this teaching method, and cultivate their needs to achieve better education and teaching results.

Keywords : Metallography and Heat Treatment; Online and offline; Mixed Teaching; Curriculum Reform; Game Theory Exploration.

1. Introduction

For students to learn the course of Metallography and Heat Treatment, the key and difficult points involved are that the knowledge concept is abstract, the learning content is wide and complex, and the connection with the actual production practice is also very close. Therefore, it will cause some difficulties for students to learn this course. This requires teachers to adopt more diversified ways to stop your explanation and review repeatedly, so that students can continuously learn and consolidate the knowledge points involved in the course under the guidance of teachers. At this stage, teachers also need to be able to systematically explain knowledge, and make students learn more planned. The relevant knowledge is that the efficiency and quality of teaching can be improved to a certain extent.

2. Current teaching situation of Metallography and Heat Treatment

2.1 Few practical links

In the current teaching process of Metallography and Heat Treatment, the problem that needs to be solved most is that there are few practical and experimental links for students, so this teaching mode needs to reform the course content in time. Because for the majority of students, the guidance of interest is very important. Moreover, the learning content of this course is also complex and the teaching time is limited. In a short time, it is very difficult to make students accept more knowledge and fully understand these knowledge. To this extent, there are few practical links, which also leads to students' inability to fully understand knowledge learning from practical operation. Therefore, to this extent, it also leads to the low efficiency of teaching. This requires the teachers of this course to actively think and carry out relevant teaching practice links in time, so that students can really get a full understanding of classroom knowledge from teaching practice and experiments, so as to better master the knowledge and lay a foundation for future learning.

2.2 Boring classroom atmosphere

Because the contents involved in course are cumbersome and complex, teachers still use a traditional teaching mode to explain

knowledge due to the influence of traditional education and teaching concepts, which leads to the boring atmosphere of classroom learning and can not really stimulate students' interest in this course. As a result, they are unable to devote themselves to the learning process of the course. The improvement of the students' learning ability and comprehensive quality in the learning process of the course has caused some obstacles. Therefore, teachers need to actively adopt different teaching methods to improve the students themselves, and the interest in the learning of the course can be better invested in the process of classroom learning, so as to promote students' learning and absorption of knowledge and better improve the quality and level of classroom teaching.

3. The significance of promoting online and offline mixed teaching of Metalology and Heat Treatment

3.1 Consolidating students' memory of knowledge points

In the process of explaining the course of Metalology and Heat Treatment, we actively carry out online and offline mixed teaching, which is due to the students' learning and consolidation of knowledge points to a certain extent. Because in terms of the traditional education and teaching mode, teachers only explain the course content once in class, and the learning content of this course is more complex and cumbersome. Therefore, students need to study and review repeatedly in order to fully understand and master the knowledge. In this case, the active establishment of online course teaching can enable students to watch knowledge points or courses repeatedly in the process of online course teaching. Through such repeated watching, students can also enhance their understanding of knowledge, and when students encounter problems in the learning process or have unclear memory of knowledge points, we can also open the return visit of teachers' online courses at any time to learn knowledge, so this learning method is more conducive to students to consolidate the knowledge points they have learned and review them repeatedly, which is also very helpful for students to improve the learning quality of this course.

3.2 Breaking the constraints of space and time

In the process of solving the teaching of relevant courses, students can have more time to study by actively carrying out online and offline mixed teaching. Because compared with offline teaching, online teaching has no time and space requirements and can learn anytime and anywhere. In this regard, it breaks the constraints of learning time and space and makes it more convenient for students to learn the course. In addition, micro class teaching in online classroom can also provide unlimited playback and explanation of the course for students, enable students to repeatedly watch and learn the knowledge explained by teachers in class, in order to help them improve their learning and mastery of knowledge.

4. An effective strategy to effectively promote the online and offline mixed teaching of Metalology and Heat Treatment

4.1 Reasonable allocation of course time

In order to better promote the online and offline mixed teaching of Metalology and Heat Treatment, the classroom of the course needs to be able to reasonably allocate the course time and plan the explanation of online and offline courses. Moreover, in the process of explaining knowledge, we should also be able to repeatedly emphasize the key and difficult points and professional knowledge, so as to have a deeper learning impression on students.

For example, in the process of course allocation, we should be able to make an overall plan for the course and fully investigate the content of each course. In the process of course allocation, we should select some content suitable for online teaching for online teaching and other content for offline teaching. Only by accurately allocating and mastering the time and methods of all courses can we better promote the development of online and offline mixed teaching to a certain extent, and improve students' learning and understanding of the knowledge explained in this course through such an education and teaching mode.

4.2 Establishing relevant online teaching exchange platform

In order to make the online and offline mixed teaching more effective, teachers need to timely establish relevant teaching communication platforms in the process of online teaching, so that every student can actively communicate with teachers in a certain teaching platform and software. At the same time, teachers can also explain live classes in the platform. It is also convenient to communicate with students online. The establishment of relevant teaching communication platform can also carry out the explanation of course knowledge more planned and systematically, so as to promote students' learning of knowledge, make course learning more directional, and better improve the efficiency and quality of students' online learning.

For example, when explaining the course of Metalology and Heat Treatment, in order to better improve the quality of online teaching, teachers need to establish relevant online teaching and communication platforms in combination with the contents

explained by the school, so that every student can register and study in the platform under his real name. Such a learning mode is more conducive to the systematic implementation. The explanation of knowledge can also enable students to have a certain understanding of online teaching, more planned course learning, and promote teachers' understanding and mastery of students' learning level in the process of online teaching.

4.3 Building a perfect evaluation system

In order to better improve the quality of online and offline integrated teaching, teachers can also make corresponding evaluation under different teaching methods. Through evaluation, students' learning level and understanding of knowledge can be mastered to a certain extent, so as to better choose relevant solutions to explain knowledge, and better promote students' understanding and learning of knowledge in this aspect. And through the evaluation of each student, it can also make students more aware of their shortcomings in the learning process to a certain extent to find a better way to improve the knowledge content.

For example, to build a perfect evaluation system, teachers need to be able to evaluate students' learning achievements and knowledge mastery according to different online and offline teaching situations, and find out the difference between online and offline teaching through these evaluations, so that teachers can adopt better teaching methods to guide students in this process. It can also enable teachers to better promote the integration of online teaching and offline teaching, and develop education and teaching methods more suitable for students to receive knowledge, so as to better improve students' understanding and mastery of knowledge in the learning process of Metallography and Heat Treatment.

5. Conclusion

With the development of modern information technology and the continuous integration of education and teaching, carrying out diversified teaching ball mode is also an inevitable requirement for cultivating high-quality talents. Therefore, in the process of explaining the knowledge of Metallography and Heat Treatment, teachers need to constantly reform and innovate the teaching methods to explain knowledge in a way more suitable for students to accept knowledge. We should also adopt certain strategies to promote the integration of online teaching and offline teaching.

References

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