New Research on Bilingual Teaching of Numerical Control Technology

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Abstract. With the rapid development of our national economy, China will rank among the top of the world as a powerful country, therefore, the higher education faces the modernization, the world and the future, which should be a necessary requirement. In particular, China's manufacturing industry has made a decisive position in the international, but the quality and quantity of the international numerical control talents have not made a breakthrough. In this paper, the bilingual teaching model of numerical control technology is described, which can be applied to train a large number of interdisciplinary talent on numerical control, and to meet the needs of the current society.

Introduction

With the internationalization of China's manufacturing industry, it is particularly scarce for the interdisciplinary talent who has the professional knowledge and foreign language of the numerical control. Through the bilingual teaching of numerical control technology and MOOC, cultivating a large number of compound numerical control talents, which not only solve the problem of employment of students, but also alleviate the needs of today's society for high-end talent [1].

The Necessity of Bilingual Teaching for Numerical Control Technology Course

The Significance of Bilingual Teaching

Bilingual teaching refers to use two kinds of language as a means of teaching, in particular, through the teaching of non-language courses, to help students to learn professional knowledge and improve the standard of English. And bilingual teaching is an effective way of promoting the standardization and internationalization of education, increase the students’ opportunities of international exchanges, and facilitate students to absorb the advanced technology and innovative ideas quickly and effectively.

The Market Demand of Compound Talents in Numerical Control Technology. Numerical control technology is the core technology which realizes the automation, flexibility, integration of the equipment manufacturing industry, improving the quality of product manufacturing, and improving the labor production efficiency; At the same time, the numerical control technology is an important guarantee for the modernization of national defense industry, and an important symbol of comprehensive national strength level.
After joining the WTO, China's economy is gradually merging with the world economy, and the manufacturing industry is gradually moving towards the world. With the injection of foreign manufacturing, China is gradually change to the "world manufacturing center", and manufacturing industry will become the pillar industry of our country. In the future, the demand of the numerical control talents is very large, especially the mould manufacturing enterprises and the automobile parts manufacturing enterprises.

**The Traditional Teaching Problems in Numerical Control Technology.** Traditional education focuses on training college students' professional knowledge, but a single numerical control technology cannot meet the needs of today's society. With the development trend of economic globalization, the gap of compound numerical control talents will become bigger. Based on the new market demand, bilingual teaching of numerical control technology should be put on the agenda as soon as possible, so that more college students should benefit from it as soon as possible.

**The Problems and Solutions of Bilingual Teaching in Numerical Control Technology**

**The Problems Existing in the Bilingual Teaching of Numerical Control Technology**

At present, the major colleges and universities have actively carried out the bilingual teaching in numerical control technology. However, the results obtained are uneven. Through the investigation, this course has a common problem: the students' enthusiasm is not high enough in the teaching. The main reasons are the following three points: (a) lacking proper implementation of the bilingual teaching in numerical control technology. (b) The contents of the textbooks are too complicated, even beyond the understanding of the students, which cannot effectively stimulate the students' desire for knowledge. (c) Teachers' teaching methods are too monotonous and rigid, cannot mobilize the enthusiasm of students. After investigation, the MOOC teaching platform, greatly mobilized the students' learning interest, effectively solve these problems, received a good effect, and achieved a positive recognition of the students.

**Setting Up the Correct View of Carrying Out the Bilingual Teaching in Numerical Control Technology.** First of all, the aim of bilingual teaching in numerical control technology is to cultivate the compound talents with international cooperation, international exchange and international competition ability for the national economic construction. Secondly, bilingual teaching in numerical control technology enables students to absorb the advanced numerical control technology in the world more quickly and more effectively, and to cultivate the students' ability of oral expression and communication. Finally, the school should actively encourage teachers to carry out bilingual teaching, give full affirmation to their teaching work through a higher reward and so on, to avoid hurting the enthusiasm of teachers for bilingual teaching [2].

**The Selection of Bilingual Teaching Materials for Numerical Control Technology.** MOOC The teaching material is the foundation of the teaching, especially for the bilingual teaching.

Related English teaching material is the key to bilingual teaching in mechanical engineering, however, the difference between the original English teaching materials and the teaching outline of our country is quite large, which is not suitable for our country's teaching situation.
In addition, most of the students in our school are not good enough to understand the system and contents of the original English textbooks. Therefore, our bilingual teaching material is Control Technology Numerical. The book describes the mature technology which has been widely used in current stage of the industry, and involved the latest research results in recent years; it is good to take into account the practicality and advanced nature. Its content is easy to understand, and the level of professional knowledge is moderate, which can help students to understand, and reduce the resistance. But there are also shortcomings in the textbook, due to the editor of the book is too concerned about the contents, parts of foreign advanced technology is ignored. Based on this, we modify the part on the basis of original teaching materials, concretely, an increase of foreign advanced technology, so as to guarantee the depth of teaching materials, enhance the students' desire for knowledge, and broaden knowledge and vision of students.

The New Method of Bilingual Teaching in Numerical Control Technology

The Bilingual Teaching Based on the MOOC

MOOC refers to large-scale network open course, specifically; it is an innovative way of learning through a network of open sharing of resources. Through the positive response to the call of the open educational resources movement (OER), realizing global sharing of high-quality education resources, setting off a new wave of a field of higher education. There are several representative of the MOOC platform: Coursera, edX, Udacity, and so on, the curriculum has the following characteristics: (1) Curriculum structure is complete. Different from the general courses, Mu class in addition to providing video resources, text material, but also for the learners provides various user community interactivity, pay attention to student's learning support service and students' learning experience. (2) Path is clear. The learning resources are distributed in the longitudinal demand of the learning process, and the course materials are published in the week. (3) Feeding back in a timely manner. Through the combination of MOOC and bilingual, it is not only conducive to the students' learning of bilingual and professional knowledge, but also conducive to the teacher's mastery of students' learning situation. MOOC will have a profound impact on higher education [3].

Training Excellent CNC Bilingual Teachers. One of the key factors that influence the effect of bilingual teaching in the course of numerical control technology is the problem of teachers. The teacher is very important as the leading person of the whole teaching activity. Therefore, the selection criteria of bilingual teachers in NC is strict.

NC professional knowledge of teachers need be excellent, foreign language skills need be solid, oral expression ability need be strong, and teaching experiences of teachers need to enrich, which can have a positive interaction in the teaching, and fully mobilize the enthusiasm of the students.

In order to strengthen the training of teachers, our school has set up a series of teacher training programs. To train the new teachers, by making full use of the advantages of the experience of the old teachers, and actively attract foreign students to the school to teach. Also, understand the latest developments in the domestic and foreign professional knowledge, to improve teachers' professional knowledge structure.

Adopting Flexible Teaching Methods to Optimize Teaching. There are many kinds of teaching methods, and each teacher's teaching methods are not the same. However, a good teaching method can improve the students' learning initiative, and can get a multiplier effect. Therefore, our requirement for teachers is not only a solid professional knowledge, but also a set of teaching methods to be praised by students.
First, we require teachers to prepare lessons before class seriously, achieving the teaching of professional knowledge using fluent oral English, at the same time, achieving the teaching with multimedia, so that students can make the students from the senses to strengthen the understanding of teaching content. Secondly, it is required that teachers should have sufficient interaction with students in the numerical control technology, and actively mobilizing the enthusiasm of the students, guiding students to think about their problems, and encouraging them to speak more and more in English. For example, in response to questions, teachers can give students the appropriate inspiration to guide them to analyze problems and solve problems, after the end of the students to be appropriate to encourage. Finally, teachers and students need to communicate regularly after class, to actively obtain the feedback of the classroom effect of students, and to improve the deficiencies in time.

The Teaching Effect of the Bilingual Mode in our school Numerical Control Technology Course. By means of questionnaire survey, the results show that 92.3% of the students are satisfied with the current bilingual teaching mode. Through bilingual teaching of numerical control technology, a large number of numerical control talents have been trained to meet the needs of the society. Bilingual teaching of numerical control technology can be recognized by students and society, which fully shows that our numerical control technology bilingual teaching is successful. However, we should also continue to explore the way forward, based on social needs, actively sum up experience, looking for deficiencies, and striving to do better in the bilingual teaching in CNC technology [4].

Summary
With the increasing internationalization of machinery manufacturing industry in China, the demand for complex numerical control technology talents is bound to become stronger. However, bilingual teaching of numerical control technology is a long-term and gradual work, which is not only the training of complex high-end numerical control talents. Therefore, we should base on social demand, through constant summing up teaching experience, looking for the lack of teaching, improving teaching methods and so on, to develop compound talents who is in line with the needs of the society.

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