

Exploring and Practicing the Cultivation of Mechanical Talents for Intelligent Manufacturing through Industry-Education Integration

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Abstract: Firstly, this article highlights the urgent demand for intelligent manufacturing machinery talents in the current manufacturing industry and the development trend of industry-education integration related teaching and education. Secondly, the article emphasizes how to carry out school-enterprise cooperation projects and establish internship bases based on the concept of "integration of knowledge and action" to promote the cultivation and practice of intelligent manufacturing mechanical talents. Finally, the article introduces innovative teaching modes to enhance the competitiveness of mechanical talents in intelligent manufacturing.

Keywords: integration of industry and education, education model, intelligent manufacturing, teaching method of integrating knowledge and action

Introduction

In recent years, the integration of industry and education has gained increasing attention and promotion in China. In 2019, the Ministry of Education and six other departments jointly released the National Pilot Plan for the Integration of Industry and Education, which marks a shift from theoretical discussions to practical implementations of industry and education integration. Intelligent manufacturing has become the core of the manufacturing industry. Through the integration of industry and education, we can establish new models of talent cultivation that emphasize the integration of theoretical knowledge and practical skills^[1].

1. Clarifying curriculum teaching objectives and transform educational concepts

1.1 To cultivate applied talents and connect with corresponding industries, it is necessary to achieve several objectives:

1. Changing the curriculum is not practical enough, too theoretical, and not very in line with actual production. Establish a mindset that emphasizes quality education, integrates imparting knowledge, cultivating abilities, and improving quality, coordinates development with each other, and comprehensively improves.

2. Pay attention to the integration of theory with practice, establish the idea of integrating theory with practice, strengthen practical education, and emphasize the application of engineering.

1.2 To achieve the above goals:

1. Strengthening the connection between education and actual production.

2. Improving the practical experience and industry background of teachers can better promote the development of industry education integration^[2], thereby meeting market demand.

2. Building a new curriculum-system

(1) Collaborative training and enterprise school collaboration are the highways for cultivating applied talents.

(2) The construction of the new curriculum system will blur the boundaries between various disciplines^[3].

In addition, combining with the "unity of knowledge and action" proposed by Wang Yangming, the culmination of the Ming Dynasty's Neo Confucianism, we aim to achieve "learning by doing" and "learning by doing". He pointed out in his "Answering the Book of Gu Dongqiao" that "without learning, one cannot be a practitioner, and cannot be a learner", indicating that learning a certain skill is an inseparable process from practice (practice)^[4]. The overall idea is shown in Figure 1:

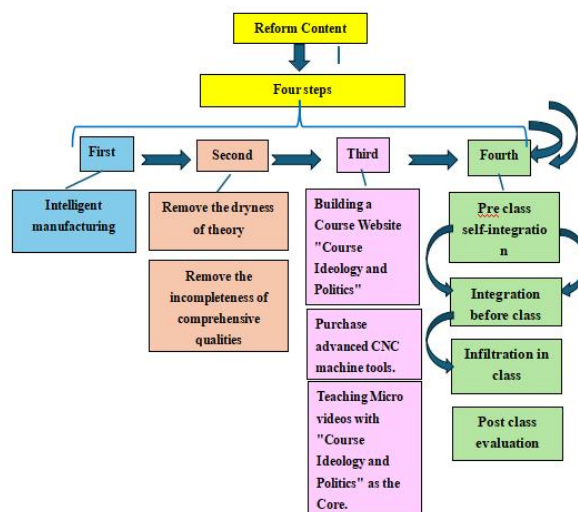


Figure 1 Overall process

3. "Three integrations" - curriculum integration, product integration, and skill integration

The goal of this project is to achieve "three integrations" - curriculum integration, product integration, and skill integration. Expand the teaching space of "intelligent manufacturing" in mechanical engineering, promote the in-depth development of "intelligent manufacturing" teaching, thereby further exploring the employment prospects of students and improving their employment rate^[5]. In the context of the continuous deepening of new engineering teaching concepts in the teaching of mechanical manufacturing and automation majors, constructive suggestions are provided for the construction of a flexible talent training model from "traditional mechanical manufacturing" to "intelligent manufacturing"^[6], and a reference plan is provided for the training model of mechanical skilled personnel in universities facing intelligent manufacturing.

Conflicts of interest

The author declares no conflicts of interest regarding the publication of this paper.

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