

Exploration on the Patriot and Professional Ethics Education Offered by "Industrial Product Modeling Design" Course Teaching

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Abstract

Integrating patriot education into the professional curriculum "Industrial Product Modeling Design" course teaching, with professional knowledge. New curriculum scheme, which are combined with the knowledge backbone and the patriot and professional ethics flesh, is formed by the knowledge transfer and value-oriented mutual fusion teaching. The professional knowledge content and carrier of the course are seamlessly integrated through Chinese culture, national characteristics and craftsmanship, which constitute a two-sided curriculum teaching aspects, promoting the Chinese elements and the unity of students' professional knowledge and patriotic sentiment and professional ethics, which provides a useful reference for the patriot and professional ethics teaching of engineering-related courses.

Keywords

Professional Ethics Education; Knowledge Transfer; Value Oriented; Product Modeling Design; Patriot Sentiment Education.

1. Introduction

Since all the higher education institution in China are funded by the central or local governments, these institutions are undertaking the responsibility of both the professional knowledge and skills teaching and the patriot and professional ethics education during the young students studying in the college or university campus. The different governmental agency at various hierarchies emphasize that the patriot and professional ethics educational work should run through the whole process of education and teaching, and create a new situation in the development of higher education. The education agencies require all colleges and universities to play the role of patriot and professional ethics education, use the main channels of curriculum teaching, enhance the affinity and pertinence of patriot and professional ethics education, meet the needs and expectations of students' growth and development, and make the various courses and patriot and professional ethics theory courses the same functionality [1-3]. The reform of patriot and professional ethics education in professional courses starts from the essential requirements of "cultivating people" in higher education, establishes the core concept of "course professional ethics elements synthesis", and strengthens the professional education of 360-degree moral education. [4-5]. the classroom teaching process itself is the most important process of educating people, and it is also the most important channel to teach and educate people. Knowledge transfer and value oriented guidance are the basic forms of education and the most effective form of implementation. In education and teaching, attention must be paid to condense knowledge in the dissemination of value, but also paid to emphasize value oriented guidance in knowledge dissemination, highlighting the integration of explicit education and implicit education [6-8], and realizing from the "patriot and professional ethics course" creative transformation to "course professional ethics elements synthesis".

"Industrial Product Modeling Design" course is a professional extension course for mechanical related programs. It is included in "mechanical design and manufacturing", "mold design and manufacturing", "machinery manufacturing automation" and other professional personnel training programs in Wenzhou Vocational & Technical College. In the process of integrating the core elements of "patriot and professional ethics", it is not the mechanical addition of teaching elements, but seamlessly melting into the knowledge points, skill points and quality points of the curriculum during the curriculum teaching and reform, to achieve the objectives of the cultivated the talents personnel the with profession and good ethics.

2. Instructional Scheme with the Patriot and Professional Ethics Synthesis

The instructional scheme of "Industrial Product Modeling Design" focuses on the curriculum objectives of "combination of knowledge transfer and value oriented guidance", strengthens explicit patriot and professional ethics, refines implicit patriot and professional ethics, and builds a whole curriculum education mode. Specifically, the teaching content of this course is divided into two aspects: patriot and engineering ethics element education and professional knowledge education. The dominant patriot and professional ethics elements in the classroom are to educate college students on socialist core values, Chinese traditional culture education, national self-esteem and domestic pride education. The former plays an infiltration role in patriot and professional ethics education, pays attention to rooting ideals and beliefs in the process of cultivating people's comprehensive literacy; the latter plays a deepening and expanding role, and emphasizes mainstream value oriented guidance in knowledge transfer. By promoting the integration of the patriot and professional ethics elements of the curriculum and the simultaneous advancement of the application and application of professional knowledge, we can realize the two-legged walk, synchronize the patriot and professional ethics theory education with the professional education, and complement each other, truly realize the all-round, whole process in the main channel of classroom teaching.

In the instructional scheme, the whole course teaching is decomposed into 5 modules: introduction, product design perception, product performance technique, computer-aided innovation design, product development and ergonomics. In the teaching of each module, there are corresponding teaching contents and teaching requirements. The teaching content is the mandatory knowledge and skill contents that must be completed. These knowledge and skill points standardize the specific content and requirements of each module. It is a centralized summary of the teaching of teachers and the knowledge and skills that students must master. How teachers teach these knowledge is instructional design. In order to reflect the professional knowledge transfer and value oriented guidance, the scheme is divided into two aspects: engineering ethics and professional knowledge. The element of patriot and professional ethics lies in embodying the humanistic spirit, strengthening the national and national identity, and using the excellent seniors' works, Chinese traditional crafts and cultural characteristics as teaching carriers to teach and apply professional knowledge. The teaching content and requirements of each teaching module and the patriot and professional ethics elements and professional knowledge in the teaching design are described as follows:

(1) Introduction module: The teaching content is mainly the overall requirements of the course and the outstanding works of previous works. The excellent works of previous seniors are used to stimulate the students' curiosity and self-confidence. Students strongly believe that they are responsible product designer. The course requirements are results-oriented, telling students that the course must be complete after the completion of the course. At the same time, this position requires students to comprehensively review the knowledge of the prerequisite course, paying attention to the understanding and application of knowledge and skills.

(2) Product design perception module: The teaching content grasps the basic principles of product modeling, understands the natural shape design and aesthetic rules of product design, and can carry out reasonable color design for products. By demonstrating the design features and cultural traditions of traditional Chinese crafts and modern industrial products, the patriot and ethics elements such as Chinese graphics and Chinese colors are reflected and the national pride is enhanced. With the help of product design examples, the basic elements of industrial product modeling, design principles and the era of products are explained. Through the morphological analysis and emotional expression of products, the product's shape design, aesthetic design and color rules are explained clearly.

(3) Product representation techniques module: Teaching requires students to master the principles and characteristics of logo design, and can use common computer-aided software to design typical cases and master the basic forms of modeling performance. On the element of patriot and professional ethics, through the classic symbols such as Phoenix TV and China Unicom, the traditional Chinese culture of Phoenix, Chinese knot and Chinese brands will be performed, and the intellectual content such as the classification, characteristics and principles of industrial product design will be explained clearly. At the same time, the geometrical forms of the logo design and the artistic representation techniques are interacted and discussed in the course, which leads to the knowledge transfer of the performance techniques (effect maps, perspectives) that mark the specific examples.

(4) Computer-aided innovation design module: The main content of teaching is the modeling steps of industrial products. Students are required to apply computer-aided design software for innovative product design, and select Chinese well-known industrial products such as Huawei mobile phones, Lenovo computers and Gree air conditioners. Chinese manufacturing, Chinese quality and Chinese Patriot are seamlessly integrated and implemented, allowing students to learn and innovate in imitation design, to fall in love with made in China Products, to stimulate students' curiosity and creativity, and to design better Chinese products. Let Chinese products go to the world. In professional teaching, through the example design process, explain the design procedures and steps, from concept design to structural design to detailed design, let students master computer-aided design tools.

(5) Product development and ergonomics module: Teaching requires students to master the concept of ergonomics and the specific application of ergonomics in industrial products. Through China's technological breakthroughs in large-scale industrial products such as high-speed railway and C919 large aircraft in recent years, it is emphasized that products must conform to ergonomics, people-oriented, and offer better lifestyle for people. China's high-speed railway and China's big planes are typical and concentrated representatives of Chinese manufacturing. They not only show Chinese technology, but also pay more attention to Chinese craftsmen. In the design exercise, let students start from the daily life, ergonomics as the core, design industrial products that help the disabled, and put the ergonomics on specific cases to promote the application of knowledge and ability.

3. Instructional Carrier with the Patriot and Professional Ethics Synthesis

The instructional reform of patriot and professional ethics education originated from the sentiments of supporting domestic products and the expectation of the future of manufacturing. If the Chinese cultural tradition, which is integrated into the product model, is innovation, then the soul of the product manufacturing industry is the responsibility. These are two equally noble feelings, and their integration and sublimation may be perfect. Ma Yun's "five new" is worthy of careful consideration by all those who do manufacturing, and the craftsmanship spirit advocated by the manufacturing industry is also worthy of being immersed in the virtual economy to seriously understand. In this process of transformation and integration, students

are our future product designers, with their feelings, with an inclusive mind to design products, with feelings will eventually gain something, not only can create new products with technological flavor, Moreover, it can contain the national cultural characteristics of the sentiments of the home country and bring Chinese culture and Chinese products to the world. In the selection of instructional carriers, the course will seamlessly integrate the achievements of national industrial development and well-known products since China's reform and opening up, and closely combine the progress of Chinese industrial products with patriotic feelings. Chinese companies and Chinese products such as "China Unicom", "Lenovo", "Huawei" and "Gree" were selected as representatives to conduct patriot and professional ethics education. The logo of China Unicom is a Chinese knot image, which is full of affinity, and it has achieved harmony from appearance to spirit. Lenovo Computer acquired IBM computer, which is in the forefront of the global computer brand, and counterparts of computer giants such as Hewlett-Packard and Dell. As a typical representative of Chinese mobile phone brands, Huawei mobile phones are comparable to American Apple and South Korean Samsung mobile phones. Gree, which close embrace "Made in China 2025" policy, independent innovation to do the core technology leader, and promote the transformation and upgrading of China's manufacturing industry, has become the focus of China's business community. After people's quality of life reaches a certain height, the watch is no longer a single use of time. FIYTA connects itself with its identity with noble quality, so that people can feel more dignity after wearing the FIYTA watch. It is an extraordinary temperament and a unique experience that people enjoy. Such a typical teaching carrier not only organically integrates the teaching tasks of the basic knowledge, skills and quality requirements of the "Industrial Product Modeling Design", but also promotes Chinese products, Chinese manufacturing and Chinese brands, so that students can learn the knowledge of product design and at the same time of skills, it stimulates national pride and national self-esteem.

4. Professional Knowledge & Skills with the Patriot and Engineering Ethics Synthesis

In the course of professional knowledge and skill instruction, according to the knowledge and skill system, decompose them into the basic principles of modeling, product form design, product aesthetics and product color design and ergonomics design. Each part of the content constitutes the core of the course teaching. All knowledge transfer and skill training are centered on this. In the process of strengthening knowledge and skills, it integrates the innovative thinking of young college students, and under the guidance of teachers, it carries out innovative institutions, innovative appearance or innovative functions design to promote the transformation of traditional Chinese Manufacturing to China Creativity. In terms of cultural integration and emotional integration, the elements of patriot and professional ethics are decomposed into national characteristics, cultural traditions, cultural self-confidence and Chinese manufacturing and craftsmanship spirits. These five elements and expertise are equivalent to the palm of one hand and the back of the hand, because in the process of designing industrial products, the shape, aesthetics and color of the products must design ethnic characteristics and cultural connotations; in the process of product manufacturing or manufacturing-oriented process design, which inevitably involve the craftsman spirit. The professional knowledge classroom that incorporates patriot and professional ethics not only realizes the teaching of knowledge, but also reflects the value oriented guidance. At the same time, the hand with the palm of the hand and the back of the hand is the complete hand. The palm of the hand reflects the professional knowledge of the course, teaches Chinese wisdom, and integrates the back of the hand into the patriot and professional ethics sentiments, facing the Chinese brand. This complete hand constitutes the goal of the Industrial Product Modeling

Design course, designing 3D digital products, and training design craftsmen with strong patriot, engineering ethics and humanistic feelings temperature. The mutual fusion between the professional knowledge and the ideological elements can be illustrated as the figure 1.

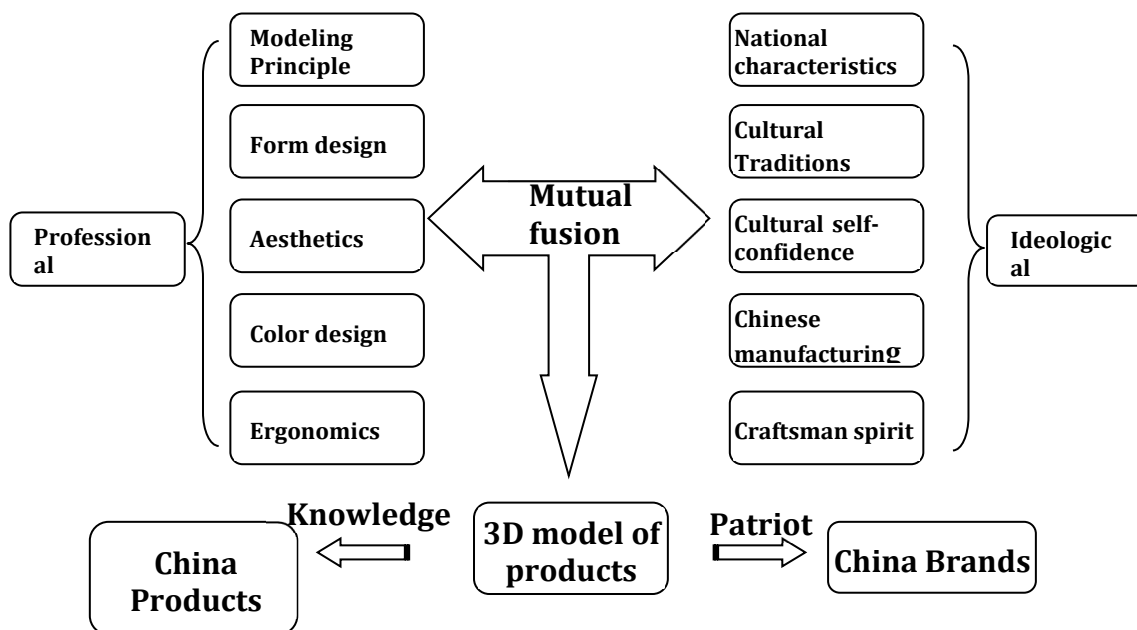


Figure 1. professional knowledge and ideological elements mutual fusion block diagram

Students not only learn superb skills in professional technology, but also improve their ideological quality and comprehensive ability. They reflect the implementation and landing of the party and the state's educational policies, and complete the organic unity of education and politics. In the course instruction, we firmly support the domestically produced and praised Chinese manufacturing. Being the propagandists and practitioners, who make domestic products to the world, and promoting Chinese products have greatly stimulated the combination of students' professional knowledge and Chinese elements, and stimulated students' skills learning and patriotic sentiments.

Of course, the education of "love Made in China products" is not limited to Chinese products and Chinese elements, and excludes foreign advanced knowledge, advanced culture and advanced products. China's reform and opening up is based on continuous integration into international advanced technology and management experience. In the field of industrial product design, advocating "love Made in China products" is to inspire national pride and national self-confidence. If the foreign products are indeed better than those "Made-in-China, we should correctly guide the curriculum, instill the concept of learning from the exotic technology and surpass them by Chinese style new design and manufacturing, absorbing the foreign advanced science and technologies, and continuously improve the quality of domestic production. Huawei's mobile phone has been continuously improved in recent years, and it is comparable to Apple's mobile phone, which is the best example.

5. Conclusion

The essence of "course professional ethics elements synthesis" is not to open a new course, nor to add an activity. Instead, it integrates the patriot and professional ethics education of colleges and universities into the professional course "Industrial Product Modeling Design", with the

knowledge of professional skills as the backbone of patriot and professional ethics as flesh. Combine professional knowledge and patriot and professional ethics emotion into a new curriculum system that constitutes knowledge transfer and value oriented guidance. Patriot and professional ethics education has strong persuasiveness and appeal, which maximizes the function of the main channel of the classroom, reverses the phenomenon of teaching in the professional curriculum, and which has the irreplaceable advantages of other educational methods. The teaching reform of "Industrial Product Modeling Design" course as the channel, which integrated Chinese traditional culture into the design of industrial products, under the conditions of China manufacturing 2025, from the Chinese manufacturing to the creation of China, the Chinese elements, will be carried forward and the students will be promoted. The fusion unity of knowledge and patriotism, in the process of imparting professional knowledge, will convey the thoughts of Patriot and Professional Ethics in a quiet and silent way, and provide distinctive industrial products for the cultivation of craftsmen of the new era with professional core skills and armed with patriotic sentiments.

Acknowledgements

This work was approved and funded by the Wenzhou Polytechnic under the project of "Mechanical and Electrical Products Modeling Design 'Love Made in China Products' Course Ideological Patriotic Sentiments Education Exploration", Project No. WZYKCSZ201801. The Author would like to express greatly gratitude for the supports from all the related organization, the relevant enterprise and the colleague and friends inside or outside the college.

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