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Project-Oriented Reform Practice of Computer Two - Dimensional Design Course of Footwear

Wanrong Xie

Wenzhou Vocational and Technical College, Wenzhou 325000, China

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Abstract: The rise of “Feizhi Intelligent Manufacturing” has broadened the path for the development of intelligent footwear manufacturing, but the shortage of professional talents has seriously constrained its development process. Through close cooperation between schools and enterprises, real projects were introduced into the two-dimensional footwear computer design course, the training links were constructed with the standardized design process of enterprises, and the quality of the training was guaranteed with the multi-dimensional evaluation system. The connotation construction of the course was effectively improved, providing reference for the training of digital footwear technology talents.

1. Introduction

In the process of the transformation of international footwear industry to intelligent manufacturing and green manufacturing, “flying weaving”, a new footwear technology, has gradually emerged. As a new category, “flying weaving” has become a new profit growth point in the footwear industry market. From the perspective of the industry, it is the trend of The Times for the footwear industry to develop towards low-carbon intelligence and products to meet the public's functional and aesthetic needs more humanized. The characteristics of flying weaving technology exactly correspond to the development standards of the industry, and it is duty-bound to shoulder the historical responsibility of the industry development. From the perspective of education, it is a positive practice to adjust the talent training program timely and scientifically according to the change of industry and market demand, so as to cultivate the talents with stronger adaptability.

2. Reform Thoughts

In the course of two-dimensional computer design of shoes, the development experiment of integrating a new category -- flying knitting shoes is taken as the starting point of teaching reform. In accordance with the development direction of the industry, the width and depth of the course are effectively expanded. In addition to cultivating students' comprehensive application ability of design software (Photoshop and Illustrator), Enhance students' understanding of flying weaving technology and the design process of flying weaving shoes, provide talent reserve for independent research and development of brand flying weaving shoes, enable graduates to quickly fill such design gaps after entering brand enterprises, and provide new momentum for the transformation and upgrading of shoe production to intelligence.

2.1 Teaching Content Innovation

Innovate the teaching content in the direction of industry and market. On the basis of no change in the total class hours, the course is adjusted into two modules: basic module and application module. Among them, the application module has 20 class hours. In cooperation with Wenzhou Fangsuo Flying Weaving Technology Co., Ltd., the real enterprise flying weaving project is introduced into the course. According to the standard enterprise development process, the course content, target and node time limit of each class are reasonably set. After the adjustment, the curriculum content is more refined, the structure is clearer and more suitable for the market. Through the course, students can master the skills of expression, understand the market popularity and cultivate the market sensitivity.

2.2 Teaching Method Reform

Reforming teaching methods by school-enterprise cooperation and real project into curriculum. More and more footwear companies realize the importance of new generation talent pool, university seize the opportunity, actively interact with the high quality enterprise, the introduction of enterprise real project into the curriculum, closer to the teaching and the market, the distance teaching and industry, activate the students' interest in learning, enterprise can also through cooperation to looking for the excellent talents, and talent of enterprise adapting period prior to the school to complete, Finally, the school, enterprises and students will achieve a win-win situation.

Discuss fully with the cooperative enterprises, and establish the enterprise “fly weave” shoe development project as the comprehensive training content of the course. “Fly weave” shoes than the “leather” has many different design methods and process technique, especially the vamp fabric programming and production of parts for colleges and universities for the blind area at present, only rely on enterprise fly weaving technicians collaboration to actual verification of rendering, so the complete project training must rely on the fly “woven” footwear university-enterprise cooperation can be realized.

2.3 Reform of Teaching Means

To complement online teaching reform teaching means. Through the use of the online course reversal offline classroom teaching and learning, fully stimulate students drive, change passive learning into active learning, students' course information early preparation, new skills and practice, found the problem in advance, then take the passion into the classroom, to solve the problem as a result, learning more clear sense of purpose, learning efficiency also increase accordingly.

2.4 Evaluation System Innovation

The evaluation system is reformed by adding evaluation subject and evaluation index items. Both process evaluation and result evaluation are oriented, of great significance to both the project itself and the designer, and are the top priority of the closed-loop management of the course. In the past, teachers were the only subject of curriculum evaluation, and the setting of indexes and evaluation standards in the evaluation system was completed by teachers. Teachers' personal experience and preferences directly affected the rationality of the evaluation system. By adding enterprises as the main body of evaluation, and adding process evaluation, market evaluation and other indicators to perfect the evaluation system, it can reflect the project quality more objectively and reasonably.

The evaluation of catching process and result of “flying weave” shoe project are two parts. After each round of proposal submission in the course, teachers and business tutors will evaluate the works and record the scores in groups. The process evaluation can play an effective role in supervising the time node control and quality control of each group, and the quantification of process evaluation can also provide a reliable basis for enterprises to select talents. Enterprises from the design draft to select the best sample shoes trial production, excellent works continue by the order will carry out market evaluation, with the order quantity of points converted into the total score.

3. Reform Implementation

Taking the “Fei-Weaving” shoe project as an example,and disintegrating and analyzing its implementation plan.

3.1 Online Learning (2 Hours after Class)

Upload project-related materials and preliminary task lists in the resource database course before the start of the project practice training, and clarify the assessment requirements. Students online courses through self-study, preliminary unlock “fly weave” relevant knowledge, and by teachers of several major information website (Porter, POP, HBX, Farfetch) as well as the accumulation of personal resources platform to collect all kinds of weave information, such as: science and technology trends, fashion shoes, fashion editor, blogger, talent evaluation, etc., complete data classification summary.

3.2 Market Research (2 Hours after Class)

Offline of wenzhou shoe market research, online research international trends and wenzhou “fly weave” shoe market situation analysis comparison, focus on “flying weave” product style, style, color, IP design, fabric structure, process details, sole eight items, such as modelling, price and used as a framework for all the material, requirements analysis and insightful, The conclusion can provide reference for the later design and development.

3.3 Project Publicity (2 Hours after Class)

Invite the design supervisor of the cooperative company to complete the project launch in the form of a salon. The open discussion and interaction among designers, teachers and students fully stimulated students' enthusiasm for practice, set up a clear sense of goal and responsibility, and then were full of expectations for their future career development.

Teachers divide working groups into a balanced group of 5-6 students based on their learning situation and willingness. Each class is divided into 8 groups. The one with the best comprehensive ability is appointed as the group leader, who is responsible for group decision-making of the overall project and communication with enterprise mentors. Organize WeChat group working group and group leader. The company arranges designers and flying weaving technicians to join the group leader, and gives timely guidance and assistance to students.

At the same time, the development process and assessment catalogue of “Fei-knitted” shoes will be distributed, and teachers will explain the use methods and matters needing attention. The comprehensive training pays attention to the process management, and each node will be graded by the teacher and the enterprise tutor respectively. Students will understand the design process

according to the catalogue, and understand the corresponding tasks and requirements for all sub-items, so as to have a clear cognition of the project framework and establish a clear sense of goal.

After class, the group independently carried out the project theme discussion, and made the theme concept board according to the plan.

3.4 Preliminary Case Discussion (2 Periods in Class)

The team used the concept board (PPT) to present the project theme plan in turn.

After listening to the report, the enterprise designers commented on each group ' s plans in combination with market value, process operability and other issues - the group further interpreted the ambiguous part - the enterprise tutor proposed amendments for each group - the group continued to question the ambiguous part - and the enterprise tutor gave an answer. In this way, students can develop their thinking ability of commodities and make good preparation for employment connection.

Teachers make comments and summaries on the connotation of the theme, thoughts of the report, language expression and other issues. Students are encouraged to pay attention to the accumulation of materials, broaden the knowledge structure, and lay the foundation for the original design.

After perfecting the theme scheme, each member of the group drew two “flying weave” shoes drafts under the theme framework. The design of styles and details was required to effectively highlight the theme concept, and the two styles could be independent of each other.

3.5 Renderings (4 Periods)

The teacher reviews the design sketches in groups. At the same time, according to the theme setting of the group, the 10-12 sketches are integrated in a series, and the excellent plans are selected as the leading direction in each series, and the rest of the works in the series are optimized as close to them.

Students use AI (vector drawing) software to draw the first draft of the effect drawing, to clearly present the design intention and support future sole modeling with accurate data, so as to standardize the design and effectively avoid repeated work.

In the process of drawing the path of renderings, the teacher gives guidance to the students and requires them to make clear and reasonable segmentation of the outline structure. For the guidance of the process of centralized problems in a timely centralized explanation, individual questions individual guidance.

3.6 Evaluation and Modification of the First Draft of Renderings (4 Periods)

The teacher evaluates the first draft of the effect drawing, and gives guidance to the series of works in the group. Emphasize the grasp of series feeling, can choose to wait with characteristic of style, design, fabric, colour or craft to serve as the core of a series to design a dot, make this group of products already diversification is harmonious and unified. In addition, it reiterates the standard consciousness of strict drawing paths and reasonable planning of divided areas.

The uniform rendering style in the group can choose to use AI + PS to draw quasi-materialized style, or can choose to use AI to draw flat style. No matter what style is chosen, attention should be paid to ensuring the shaping of the elasticity, texture and other details of the flying fabric.

The color matching design needs to consider the theme, inspiration source, style and style, target groups, popular trends and other factors, requiring the overall color matching vivid coordination, rich connotation, can effectively highlight the design theme.

3.7 Evaluation and Improvement of Revised Renderings (4 Periods)

At this time, the design effect of each group has been formed, and it has been relatively clear whether each section has a good sense of series. When the enterprise tutors and teachers jointly evaluate the revised draft of the renderings, they will focus on how to improve the accuracy of the renderings and the overall sense of improvement. Check the parts of each side, including the processing of details such as fabrics, decorative buttons and patterns, adjust the edges evenly and smoothly. Strictly control of details can effectively improve the texture of the work.

The final review of the work, in order to design the proposal of the integrity of the principle, will not be a series, rough production, serious lack of highlights of the renderings will be eliminated.

3.8 Planning Proposal (4 Periods)

The proposal must include: theme description (concept version), series description, series design style drawing, series design effect drawing, detail description of five parts. Each group will discuss the layout of the proposal according to the requirements, and then make the proposal in an orderly way. It emphasizes that typesetting design is the bridge of expression, and the perfect form pursued must conform to the ideological content of the theme, which is the foundation of typesetting design. It is not successful to emphasize only the form of expression while ignoring the content, or to seek only the content without artistic expression. Students are required to control the design direction and details with the principles of formal beauty and popular aesthetics. During the process, students should pay attention to the rational use of the animation function of PPT, adjust the atmosphere appropriately, and avoid the appearance of boring or messy situation.

The teacher checks and reviews the completed draft of the planning proposal, and the students revise and perfect the deficiencies.

3.9 Project Summary (2 Periods)

After the report of the planning proposal is completed, the enterprise mentor comments on the works, professional ability, professional attitude, teamwork spirit and other contents of each group, and finally explains the follow-up development of the project.

The teacher made the final conclusion, thanked the enterprise cooperation for the vitality of the course, and looked forward to more and deeper cooperation in the future. Affirm the progress and promotion of students in all aspects; Point out the need to improve the inadequacies and give corrective, perfect suggestions.

4. Case Study

4.1 Case Summary

From the students' enthusiasm in learning the knowledge and skills of the new category of “flying weaving”, it can be seen that the following up of the teaching contents in the industry trend has greatly mobilized the students' subjective initiative in learning. The internal capacity and difficulty coefficient are properly controlled, and the vast majority of students can master the computer expression methods of flying weaving products. From the completion of students' works, the school-enterprise cooperation helps students to establish market awareness, and the participation of enterprise personnel in project guidance enables students to deeply understand the difference between design thinking and product thinking. In the survey, students reported that the learning of this course was substantial and orderly. Therefore, it can be seen that the interaction of online and

offline teaching, in-class and after-class teaching played a good effect. Students in the whole course had a clear awareness of learning objectives and a relatively perfect evaluation system, which greatly improved work efficiency. The enterprise gives a high evaluation to the students' overall professional attitude and professional ability.

4.2 Case Reflection

1). The objective evaluation of the industry and the market should be combined to guide the follow-up development of the teaching reform subject of “Fei-Weaving” shoes development project. The teaching and research team should make use of the opportunity of enterprise practice to carry out active market research and further discussion with experts.

2). The singularity of school-enterprise cooperative units exposes the problem of loose cooperation. Enterprises with large class sizes can provide limited human support, and a single enterprise cannot guarantee close cooperation in the process. In view of this problem, we actively negotiated with several high-quality shoe enterprises in Wenzhou and reached cooperation intention. In the future, we can synchronously connect with many enterprises in the real project teaching. Students and enterprises can choose to establish learning and cooperation relationship, and enterprises can also use this to find and reserve talent resources, so as to achieve a win-win situation for both sides.

3). The construction of online courses. In the process of using online courses, we realized that part of the old content should be boldly abandoned, otherwise it may cause interference to students' learning ideas, which is not conducive to the cultivation of fashion awareness and aesthetic appreciation. At the same time, notice boards can be used to update the content so as to ensure the timeliness of students' learning.

5. Epilogue

The training of high-applicability digital skills talents in shoes is a long way away. The thinking about curriculum reform should continue to push forward in depth, and inject a continuous stream of talent vitality and smart capital into the transformation and development of shoes intelligent manufacturing.

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