

Research on the Integration of Handicrafts into the Teaching Practice of Textile and Garment Professional Courses in Higher Vocational Colleges: Take the Integration of Plant Dyeing into the Teaching of the “Application of Clothing Color” Course as an Example

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Abstract

To promote the integration of traditional handicraft culture with the teaching of textile and clothing majors in higher vocational colleges, this article takes the integration of plant dyeing into the teaching of the “Application of Clothing Color” course as an example. Through comparative analysis and integrated practice, it explores an effective teaching model for its integration into the courses of textile and clothing majors in higher vocational colleges. This research constructed and implemented a teaching model that emphasizes “systematic cognition–fundamental understanding and innovative exploration–equal emphasis on techniques and principles”. The results show that this model can effectively promote the inheritance and innovation of traditional handicrafts in professional teaching, provide a referenceable path for other higher vocational colleges to achieve the deep integration of traditional handicrafts and course teaching, and contribute to the innovation and sustainable development of vocational education while promoting traditional culture.

Keywords

Traditional handicrafts; Batik; Higher vocational textile and garment major; Course teaching practice

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1. Introduction

In 2021, the General Office of the Central Committee of the Communist Party of China and The General Office of the State Council issued the “Opinions on Further Strengthening the Protection of Intangible Cultural

Heritage”, explicitly stating that “relevant majors and courses on the protection of intangible cultural heritage should be set up in vocational schools”, emphasizing the indispensable and important position of colleges and universities in promoting the protection of intangible

cultural heritage^[1,2]. Against the backdrop of the deep penetration of information technology into modern textile and garment industrial production, the inheritance and development of traditional handicrafts are facing new challenges. Especially in the field of higher vocational education, how to inherit and develop traditional handicrafts and integrate them into the teaching of textile and garment professional courses has become an urgent problem to be solved in the cultivation of talents in the textile and garment major of higher vocational education. The author studies a vocational college in China, which shoulders the important mission of cultivating high-quality technical and skilled talents.

However, at present, the teaching of textile and garment-related majors in this college still mainly focuses on general skills training, failing to fully explore and integrate local traditional handicraft resources, and the integration of professional characteristics with regional culture is insufficient. Based on this, this article takes a certain vocational college in China as the research object, systematically analyzes the practical difficulties and achievements faced by integrating traditional handicraft plant dyeing into the teaching of textile and clothing major courses in this college in the past two years, with the aim of providing practical paths and theoretical basis with reference value for the teaching reform of textile and clothing major in other vocational colleges.

2. Overview of plant dyeing

Plant dyeing is not only a dyeing technique but also an important component of intangible cultural heritage (ICH)^[3]. Traditional plant dyeing techniques are traditional handicrafts that uses natural pigments from plant roots, stems, leaves, flowers or fruits as raw materials, extract them through physical or chemical means, and dye textiles with morphe-dyeing techniques. In essence, it is an ecological technology that connects nature and human life, and has formed a unique cultural symbol and technical system over thousands of years^[4].

The traditional plant dyeing and printing techniques mainly include two forms: tie-dyeing and batik, among which the tie-dyeing technique is the most widely used. This process uses natural plant dyes as raw materials and, through procedures such as binding, dyeing and drying,

forms unique colors and patterns on fabrics. It is often used for fabric modification and clothing decoration.

3. The current teaching situation and causes of the textile and garment major in a certain higher vocational college

To fully understand the integration of teaching and handicraft plant dyeing in a certain higher vocational textile and garment major, this study conducted in-depth research through methods such as questionnaire surveys, teacher interviews, and course analysis.

3.1. Current teaching situation

At present, the inheritance status of traditional plant dyeing and printing techniques in China is relatively good. Some handicraft workshops have begun to try to combine it with modern clothing design, but they still face the practical constraint of a shortage of professional textile and clothing design talents in terms of design and innovation. Since a certain vocational college began enrolling its first batch of vocational students in September 2023, after nearly three years of teaching practice and talent cultivation, it has now developed into four professional directions, namely, clothing design and technology, modern textile technology, knitting and knitted clothing, and digital dyeing and finishing. During the teaching process, the author found that students majoring in textile and clothing in a certain higher vocational college generally lack understanding of traditional handicraft plant dyeing. This problem directly restricts the all-round development of students' relevant professional qualities and the inheritance and implementation of traditional Chinese craft culture.

3.2. Cause analysis

Traditional handicraft content is missing in the curriculum system. At present, the courses are mainly divided into public basic courses, professional platform courses, professional core courses and practical courses. Professional courses mainly cover "Design and Implementation of Weaving Technology", "Clothing Display Design", "Design and Implementation of Spinning Technology", etc. No courses related to traditional handicrafts have been specifically set up. Only a few

teachers have incorporated small and short teaching units in their classes. For instance, in courses like “Application of Clothing Color” and “Specialized Clothing Design”, traditional handicrafts such as embroidery and tie-dyeing have been embedded, resulting in fragmented teaching content and a lack of systematicness.

The practical teaching conditions are disconnected from the demands of traditional craftsmanship. The practical teaching content of the course is still a simple imitation and blind following of the teaching of related professional courses in other domestic schools. Although the school is equipped with numerous training rooms such as spinning training rooms, VR training rooms, clothing display rooms, and draping, it has not separately set up dedicated equipment and training Spaces suitable for traditional hand dyeing and printing, which makes it impossible to effectively carry out the practical links of traditional craftsmanship.

The teaching staff’s ability to teach traditional craftsmanship is weak. Most of the teaching staff have a modern skills background. In the teaching of traditional handicraft plant dyeing, they still only focus on the mechanical process flow, but do not understand its process principles and process culture. At present, most teachers do not possess systematic traditional handicraft skills and teaching abilities. The teaching staff lacks enterprise work experience or handicraft inheritors, making it difficult to meet the demand for integrating traditional handicraft plant dyeing into teaching.

4. Research on the practical path of integrating plant dyeing into curriculum teaching

4.1. Course overview

4.1.1. Course overview and integration model

This course takes the research on the teaching practice path of integrating traditional handicraft plant dyeing into the “Clothing Color Application” course of a certain higher vocational college as an example. The traditional handicraft plant dyeing is mainly integrated into the teaching of the textile and garment major in a certain higher vocational college through a three-step approach of “systematicness, root understanding and innovative exploration, emphasizing craftsmanship and principles even more”^[5].

4.1.2. Teaching objectives and problem orientation

The teaching objectives of this course are divided into three levels as follows:

- (1) By integrating the “systematic” knowledge of manual plant dyeing into the teaching of the “Clothing Color Application” course in a certain higher vocational college, the problem of fragmented teaching content of traditional handicrafts in the curriculum system can be solved, and an attempt is made to construct a systematic knowledge system to deal with the current situation of scarce teaching materials, incomplete knowledge framework and unproficient dyeing skills;
- (2) Efforts should be made to cultivate students’ ability of “root understanding and innovative exploration” in hand-dyed plants, so as to change the current situation where practical teaching simply imitates and blindly follows the relevant courses of other domestic institutions;
- (3) Guide students to establish a learning awareness of “emphasizing both craftsmanship and principles”, in an attempt to address the tendency in teaching to focus more on mechanical process flows while neglecting process principles and cultural connotations, and enable students to innovate and expand on the basis of understanding process principles.

4.1.3. Teaching content and class hour arrangement

This course totals 32 class hours and consists of 5 chapters as listed:

- (1) Chapter One is titled “The ‘Theoretical Foundation’ of Integrating Plant Dyeing into Clothing Colors” (4 class hours), mainly teaching an overview of the integration of traditional plant dyeing into clothing colors. The content includes the concept and historical evolution of plant-dyed clothing, plant-dyed clothing from all over the world, as well as the dyeing principles and basic methods of plant-dyed clothing;
- (2) Chapter Two is titled “Theoretical Explanation and Practical Operation of Tie-dyeing in Clothing Color Application” (7 class hours). The “Theoretical Explanation” section mainly provides

detailed theoretical explanations on tie-dyeing, covering its brief history, concepts, principles, basic methods, learning, and thinking expansion. The “Practical Operation” section mainly offers detailed explanations, practical demonstrations, and guidance on tie-dyeing. Covering the tools, process flow and technology of tie-dyeing;

- (3) Chapter Three is titled “Theoretical Explanation and Practical Operation of Batik in Clothing Color Application” (7 class hours), and its theoretical and practical sections are similar in structure to Chapter Two;
- (4) Chapter Four is titled “Theoretical Explanation and Practical Operation of Tie-dye Dyeing in Clothing Color Application” (7 class hours), and its theoretical and practical sections are similar in structure to Chapter Two;
- (5) Chapter Five is titled “Theoretical Explanation and Practical Operation of Type Paste Dyeing in the Application of Clothing Color” (7 class hours), and its theoretical and practical sections are similar in structure to Chapter Two.

4.2. Systematic construction and integration of the curriculum

4.2.1. Systematic construction of the course knowledge system

To build a systematic course knowledge system, the original basic knowledge of clothing color in the “Application of Clothing Color” course is first sorted out and integrated, covering dimensions such as the culture and perception, science and cognition, technology and application of clothing color. Based on this, the first chapter focuses on systematically sorting out core knowledge points such as the concept and historical evolution of plant dyeing, plant dyeing around the world, the dyeing principles and basic methods of plant dyeing, and making multi-angle and horizontal connections with the aforementioned color knowledge.

4.2.2. Systematic teaching implementation of core process modules

Chapters Two to Five focus on the core of “indigo dyeing” and systematically teach common dyeing techniques such as tie-dyeing, batik, tie-dyeing, and

pattern paste dyeing. Each process module follows a path that combines “theoretical explanation” with “practical operation”. The teaching content systematically covers the origin and development, style characteristics, basic principles, technical elements, process boundaries, learning methodology (including deconstruction and reconstruction thinking) of the process, as well as specific production techniques and the complete process.

4.3. Principles and techniques of the course

In the course, students are guided to deeply study and understand the principle system of plant dyeing. Here, we take indigo dyeing as an example to illustrate, that is, the dyeing principle of indigo dyeing mainly consists of three parts: indigo production, dyeing and oxidation. Moreover, further refine the teaching through the production of indigo and indigo dyeing, enabling students to deepen their understanding of the fundamental principles and characteristics of indigo dyeing. Furthermore, by infusing the principles of indigo dyeing to redefine the course of clothing color, students can apply what they have learned, deepen their understanding of the principles of indigo dyeing, and better apply them to the course of clothing color. Finally, by grafting the principles of indigo dyeing onto specific dyeing techniques such as tie-dyeing and batik, students are encouraged to learn to draw inferences by analogy and engage in innovative exploration, thereby deeply understanding the principles of each dyeing handicraft and the characteristics of each dyeing technique.

Taking the integration of batik techniques into the teaching of the “Application of Clothing Color” course as an example, this paper further elaborates on the teaching practice paths of batik’s “principles”, “process flow, dyeing techniques” and “innovative exploration”. It mainly includes the following three parts.

The specific content of principle of batik is as listed:

- (1) The development history of batik, the basic attributes of batik anti-dyeing, and the technical elements of batik blocking;
- (2) The process flow of batik: Its specific contents: the preparatory work for wax painting, wax painting, batik and dyeing, and post-dyeing treatment;
- (3) The techniques and processes of batik: Its specific contents include single-color batik and multi-color batik, drop wax, painting wax, printing wax, halo

wax, and mixed superimposition techniques, etc.

From the above, it can be seen that whether introduced from the perspective of the principle of indigo dyeing or analyzed from the perspective of batik techniques, the two key points of “wax” and “dyeing” are indispensable. Starting from the principle of “using wax as a painting and a brush”, and applying the principle of “wax anti-staining”, the effect of “removing wax and showing flowers” is achieved.

4.4. Teaching effectiveness

In the “Application of Clothing Color” course, the limitations of traditional color teaching are broken through. This course focuses on three main lines: “systematic” knowledge, “fundamental understanding and innovative exploration”, and “emphasizing both craftsmanship and principles”, guiding students to master the internal logic of “color and technique”, and strengthening their perceptual cognition and rational application of color. For instance:

- (1) This course represents a teaching transformation from “instrumental teaching” to “competency-based cultivation”. Teachers integrate the “systematic” knowledge of batik into the “Application of Clothing Color” course, consolidating fragmented knowledge points into systematic knowledge transmission and placing the knowledge of clothing color application in a systematic knowledge system practice process. Students’ ability to understand and apply colors has been greatly enhanced. It has expanded from the methods of color selection through Pantone color cards or software to the application process of “plant screening, pigment extraction, control of dyeing media, wax anti-dyeing, oxidation color development, and post-fixation of colors”;
- (2) This course leads students to enhance their teaching from “surface imitation” to “understanding and mastering the principles” and understand the principle of “wax anti-staining”. For instance, by taking advantage of the water-repellent isolation principle of wax, students’ innovations are no longer confined to traditional pattern effects. The students began to explore and think: Could other water-repellent materials be used to replace wax

as water-repellent isolation materials? Can digital wax spraying technology be combined to achieve precise anti-staining? This exploration based on the principles of batik has given rise to innovative directions such as comprehensive batik and digital batik, achieving a leap from “craft inheritance” to “principle regeneration” in innovative exploration;

- (3) This course leads students to establish a thinking transformation from “how to do” to “why to do it”. Prevent teaching from falling into mere skill learning and ensure that every step of operation is supported by solid principles. For instance, when faced with a batik work that is not satisfactory, with murky colors and blurry patterns, can students systematically trace back and reflect to explore whether it is a problem with the concentration of the mordant? Is it due to insufficient dyeing time? Or is it that the wax seal is not tight enough? This ability to trace back and explore the techniques and principles of batik is the core point for solving any complex technical problems in the future.

Through teaching practices centered around the three main lines, the following specific achievements were ultimately transformed: leading students to learn to make the “Color Generation Log”, which comprehensively records the entire process and change process from plants to finished products, process parameters and effect analysis, presenting systematic knowledge. There is also a series of works derived from the principle of batik, as shown in **Figure 1**, which leads students to the process of making batik with pomegranate juice and delves into the different experimental effects of dyeing with pomegranate juice.

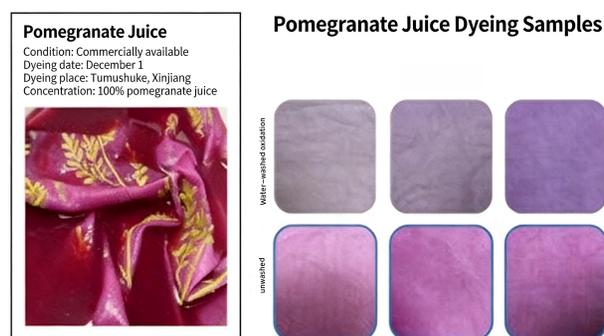


Figure 1. The process of making pomegranate juice batik and the experimental effect of pomegranate juice dyeing.

4. Conclusion

This paper, from the perspective of the curriculum system and teaching practice research of the research object, combines the teaching practice research of integrating traditional handicraft plant dyeing into the “Clothing Color Application” course of a certain higher vocational college, and constructs a “three-step” teaching model of integrating traditional handicrafts into the teaching practice research of higher vocational textile and clothing majors. Based on the cases of integrating traditional handicraft plant dyeing into the teaching of textile and garment majors in higher vocational colleges, it is found that they all share a common feature, which is to guide students to start from the understanding of principles and roots, to the integration and application transformation of techniques, and then to innovative output. From the learning and cognitive steps reflected in the case, it can be seen that guiding students to learn to explore the skills and connotations of local traditional handicrafts and apply them to textile and clothing design and product manufacturing attempts to enhance students’ learning thinking ability, that is, to transform

the thinking from “how to learn” to “why to learn in this way”. However, there is still some room for improvement in the verification and enhancement of the integration path between plant dyeing techniques and textile and clothing design courses. It is hoped that other domestic and foreign teaching and research institutions, enterprises, etc. can conduct arguments based on the integration path methods mentioned in this paper and expand on this basis. Meanwhile, it is hoped that other domestic and foreign teaching and research institutions can continue to deeply explore the theoretical and practical knowledge of integrating intangible cultural heritage traditional handicrafts into higher vocational professional teaching, continue to strengthen and improve the project-based teaching evaluation system, and optimize teaching theory and practical research in combination with specific actual needs. It is hereby noted that the research methods, concepts and issues involved in this article are all aimed at the specific courses and problems of the Textile and Clothing College of a certain higher vocational and technical college in China.

Disclosure statement

The author declares no conflict of interest.

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