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Exploring Ancient Women's Textile Labor and Emotional Expression through Dream of the Red Chamber

Yanping Wang

Public Department, Hainan Vocational University of Science and Technology, Haikou 571126, Hainan, China
13518073234wang@sina.com

Article

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ABSTRACT

Dream of the Red Chamber, as a Chinese classical literature treasure, is highly praised for its literary value, and its delicate description of ancient women's textile labor and emotional expression can serve as a unique and valuable basis for modern academic research. In this study, 20 volunteers with a fabric-making foundation were carefully selected and divided into a control group and an observation group to participate in a unique fabric-making experiment. The control group was instructed to make simple plain fabrics, without a specific emotional orientation, and the observation group was instructed to find fabrics with a specific emotional color pattern in Dream of the Red Chamber, then learn how to make the pattern. Results showed that the volunteers in the observation group spent a considerable amount of time making their fabrics based on Dream of the Red Chamber, made numerous adjustments, and scored high in energy consumption, weaving difficulty, warp and weft yarn density, pattern and color richness, and emotional engagement. This study found that the textile work of and feelings expressed by the ancient women in Dream of the Red Chamber have certain reference significance in modern textile work. In ancient times, women infused fabrics with their emotions and made them a carrier of their thoughts and emotions. In modern fabric design and production, practitioners can learn from the deep integration of emotions and technology to make fabrics with not only practical value but also unique emotional and cultural connotations to meet people's growing spiritual and cultural needs.

KEYWORDS

dream of the Red Chamber, ancient women, textile labor, emotional expression

INTRODUCTION

Dream of the Red Chamber is known as the first of the four classical novels of China and occupies an extremely important position in Chinese classical literature. The novel describes the rise and fall of traditional Chinese feudal families [1]. As an important work of Chinese literature, *Dream of the Red*

Chamber covers traditional culture and etiquette, which are interwoven and affect each other [2]. Among the novel's many cultural elements, the women's fabric labor is described vividly. From the material, patterns, and colors of fabrics to their production process and usage, the novel contains rich cultural codes that must be explored and interpreted deeply. In ancient society, with strict feudal ethics, "men plowing and women weaving" was the typical social division of labor; thus, fabric labor became an important embodiment of the life and social role of ancient women. For aristocratic women, fabric making is not only an essential skill but also an important way to show their status and talents. Meanwhile, ordinary women can make a living and subsidize their family income through textile labor. As a carrier of emotions and culture, fabrics play a key role in women's social activities and emotional sustenance.

In recent years, with the rise of social history, gender history, and related research, academic circles have gradually paid considerable attention to the life and labor of ancient women and presented research results on fabric technology and clothing culture. Such studies can be divided into three types on the basis of different research themes. The first type is studies on ancient women's life and labor. For example, Luo [3] examined and analyzed traditional evaluation methods for fabric appearance, which rely mainly on subjective and manual operations that are inconsistent and time consuming, and proposed a self-developed three-dimensional (3D) reconstruction system and method based on photometric stereology to evaluate the appearance of fabrics objectively. Moreover, Li [4] observed that traditional fabric detection methods rely typically on manual visual inspection, which is inefficient and unable to meet specific requirements. The author innovatively integrated a Generative Adversarial Networks,GAN; a Cable News Network,CNN; a field-programmable gate array, and a multilevel image restoration algorithm based on a graphic neural network; fused high frequency and low frequency; and developed a new wearable fabric restoration recognition system by combining the aforementioned technology with wearable devices [4]. Meanwhile, Cho [5] investigated the embroidered back skirts of Huawu Village traditional skirts in Qianxi County, Guizhou Province, China, and pointed out the traditional stitching patterns of back skirts, which showcased the women's exquisite embroidery technology skills. The second type is research related to *Dream of the Red Chamber*. An increasing number of people have become interested in traditional culture and conducted a series of studies. As a classic, *Dream of the Red Chamber* can serve as a relevant research material. For instance, Yao [6] examined a translation of *Dream of the Red Chamber* from a linguistic perspective and introduced a new point of view for investigating the translation of "red" color words through corpus translatology. Based on an existing Chinese–English parallel corpus of *Dream of the*

Red Chamber, the author conducted a quantitative analysis of the word "red" in Hawkes and Minford's and Yang and Da Naidie's editions. The analysis discussed the translation methods and strategies for the word "red" in different contexts [6]. Yin [7] also analyzed a translation of *Dream of the Red Chamber* and argued that the subjectivity of translated content should be reconstructed from a cross-cultural perspective when ancient Chinese masterpieces are translated. The third type is studies on the images of female characters and their literary value [7]. Zhang [8] examined the different female characters in *Dream of the Red Chamber* and analyzed their symbolic significance, then determined the causes of their comic or tragic fate and the literary criticism value of the female images in the work [8]. Starting with *Dream of the Red Chamber,* Fu [9] analyzed three typical female characters from classic Chinese literature, namely, Lin Daiyu, Xue Baochai, and Jia Mu, and expounded on their characteristics and cultural value in family inheritance, vitality, wisdom, and family responsibilities. Moreover, the author probed into the characteristics and connotations of female characters in Chinese culture [9]. Research has provided multidimensional guidance for experimental design from three aspects: the labor and life of ancient women, content of *Dream of the Red Chamber*, and the portrayal and literary value of female characters [9]. Studies on the labor of ancient women offer methodological references for the restoration of technical tools and scenes. Research on *Dream of the Red Chamber* can inspire the experimental design of cross-cultural symbols and the translation of literary symbols. Meanwhile, studies on female images can help in defining emotional motivations and designing cultural intervention strategies. The findings can help improve the control of experimental variables, optimize experiment processes, and enhance the scientific rigor and innovation of related research.

In existing scholarly research on traditional textiles and *Dream of the Red Chamber*, most studies focused on the technical and historical evolution of textiles or analyzed the role of textile descriptions in character development and plot progression from a literary criticism perspective. However, such studies overlooked the integration of the two aspects to explore the intrinsic connection between textile labor and women's emotional expression. The examination of ancient women's textile labor and emotional expression in *Dream of the Red Chamber* has significant academic and practical value. Emotional expression refers to the subtle conveyance of the inner emotions, feelings, and spiritual needs of ancient women through material carriers, such as textile patterns, colors, and techniques, and practical activities, such as labor, gift giving, and creative endeavors [10]. Emotional expression encompasses the delicate expression of emotions, such as family love, romantic love, and friendship, and cognition and attitude toward fate, social norms, and

self-worth. On the one hand, as a classic literary work, *Dream of the Red Chamber* can serve as a rich and vivid research material by depicting the authenticity and artistry of textile labor to fill the gaps in the examination of ancient women's emotional history. On the other hand, analyses of the relationship between textile labor and emotional expression can deepen our understanding of ancient women's spiritual world and social status, provide a historical reference for contemporary women cultural studies and textile design innovation, and promote traditional culture inheritance and development in modern society.

EXPERIMENT

Materials and Methods

Materials

Screening criteria for volunteers

With regard to the selection criteria for the volunteers, they must have basic textile skills, including basic knitting skills and knowledge in at least three common embroidery stitches. Such skills were determined through a written test and a practical test. The written test covered basic knowledge in the textiles and fabrics in *Dream of the Red Chamber*, and the practical examination required the volunteers to complete a simple plain fabric sample within the specified time.

Sample grouping and randomization

To ensure the sample diversity, the 20 volunteers between the ages of 18 and 45 years, with different genders, occupations, and educational backgrounds, were randomly divided into a control group (10 members) and an observation group (10 members). The randomization process involved generating 20 random numbers by using a statistical software. After the numbers were sorted by value, the first 10 were assigned to the control group, and the last 10 were assigned to the observation group. No significant differences were observed in the baseline indicators between the two groups ($P > 0.05$).

Efficacy analysis of sample size

Power analysis is a crucial method for determining the sample size, which primarily involves four key parameters: the significance level (α), the test power ($1–\beta$), the effect size (effect size), and the test type. In this fabric production experiment, the following hypothesis was used for the calculation: Based on similar fabric technology studies, this study posits that the observation group and the control group will exhibit

moderate-to-significant differences in the key indicators, such as the penetration rate of the emotional symbols and the process complexity (e.g., Cohen's d = 0.6–0.8). In social science and psychological research, the effect size index commonly used to measure the difference between two groups is Cohen's d, and the calculation formula is ES = (m1-m2)/(s_{pooled}), where m1 and m2 are the mean of the two groups, and s_{pooled} is the pooled variance. For example, the expected penetration rate of the emotional symbols in the observation group was 70%, whereas that in the control group was 30%. The effect size was calculated as $\sqrt{0.7^2 + 0.3^2 - 2 \times 0.7 \times 0.3} = 0.4$. Based on the parameter settings, the calculation formula for the sample size for the independent samples t-test was n = 2 × [(Zα/2 + Zβ) × σ/δ]^2, where Zα/2 represents the percentile of the standard normal distribution that corresponds to the significance level, Zβ denotes the percentile of the standard normal distribution that corresponds to the test power, σ is the population standard deviation, and δ is the expected effect size. The minimum sample size required to meet the test power is approximately 9–11 participants per group. In consideration of potential sample attrition during the experiment (with a preset attrition rate of 10% from the withdrawal of participation owing to scheduling conflicts), the sample size was expanded to 10 participants per group, for a total of 20 people, to ensure the statistical power of the experiment.

Specifications and treatment of experiment materials

The materials used were mulberry silk, with a fiber length of over 1,200 m/g and purchased in Hangzhou, and cotton and linen made from natural organic cotton and flax fibers. No chemical dyeing was conducted, and no additives were added after the testing. The mineral dyes, namely, cinnabar and azurite, were obtained from professional mineral pigment suppliers, and their purity was tested. The plant dye was extracted from madder by using traditional fermentation methods, such as soaking and fermenting for 72 hours, to obtain the red dye [11]. All the materials were pretreated before use. Specifically, the silk was degummed, and the cotton and linen were softened to meet the requirements of the ancient fabric-making process. The mulberry silk used in the experiment was sourced from Hangzhou. Tests showed that the fiber length exceeded 1,200 m/g, and the silk had a degumming strength of 3.5–4.0 cN/dtex, an elongation at break of 25%–30%, and a moisture regain of approximately 11%, which meet the GB/T 17982-2008 standard for mulberry silk fabrics. The natural organic cotton and flax fibers were tested by SGS and found to be free from formaldehyde, azo dyes, and other chemical substances. The cotton fibers had a breaking strength of 2.5–5.0 cN/dtex, whereas the flax fibers had a breaking strength of 3.0–6.0 cN/dtex. After the softening treatment, the flax fibers flexural stiffness was ≤ 0.2 cN·cm²/cm. The mineral dyes, namely,

cinnabar, with a purity of ≥ 98%, and azurite, with a purity of ≥ 95%, were analyzed by X-ray fluorescence spectroscopy and found to be free of heavy metal exceedances. The plant dye, namely, madder, was extracted through a 72-hour soaking and fermentation process, which resulted in a dye solution with a pH value of 5.5–6.5, excellent washfastness (≥ 3 grades), and excellent lightfastness (≥ 4 grades).

Connection between ancient and modern textile technology

To address the differences in textile technology between ancient and modern times, the experiment team comprehensively examined ancient texts and archaeological artifacts, invited traditional textile artisans for guidance, and replicated ancient tools and processes. For technical details that could not be restored, modern material science and technology were used to make reasonable improvements, such as replacing lost tools with new textile equipment that matches the texture of those used in ancient times. The differences between ancient and modern processes were quantitatively recorded and analyzed to ensure that the experiment retained the traditional essence but was feasible and scientific for modern research.

High-definition image scanning and digital drawing technology was used for the high-precision reengraving of patterns such as “butterfly piercing flowers” and “hundred sons and thousands of grandchildren.” Experts in traditional pattern research and nongenetic inheritance were invited to review the replica patterns to ensure that the pattern shapes, proportions, and meanings conform to the fabric pattern characteristics of the Qing dynasty and the pattern templates, with different sizes, meet the needs of various fabrics [12].

Methods

Test site environment and production time control

The environmental conditions of the unified test site were controlled to reduce the influence of environmental factors on the fabric-making and material properties: indoor temperature 22 ± 2 ℃, relative humidity 50% ± 5%, and light intensity 500–800 lux. The same total production time (i.e., 72 hours) was set for the two groups of volunteers, and the stage time nodes were divided. The preparation of the materials, basic weaving/embroidery, decoration improvements, and other links must be completed within the specified time to ensure the consistent progress of the experiment.

Literature research and process feasibility verification

The original *Dream of the Red Chamber*, notes for novels from the Qing dynasty (e.g., *Notes of Yuewei Caotang*), and records of fabrics in local chronicles were examined to supplement the detailed information.

A fabric information database was established, a text analysis software was used for the word frequency statistics, semantic network analysis was conducted on the fabric descriptions, and the key features were extracted [13]. Textile processing experts were invited to verify the feasibility of the identified engraving process, and the process parameters, such as the stitch density of the embroidery and the coloring time of the dyes, were adjusted through small-scale trial operations to ensure that the engraving process is in line with the historical practice and suitable for experimental operations.

Arrangement of volunteer training and assessment

Before the experiment was conducted, a three-day intensive training was conducted. The training was arranged as follows: On the first day, theoretical teaching was conducted, including the interpretation of the fabric culture in *Dream of the Red Chamber* and an overview of textile processing in the Qing dynasty. On the second day, basic skills intensive training was provided, which focused on the relevant needling and knitting techniques needed by the different experiment groups. On the third day, simulation was conducted, and personalized guidance was given on the basis of the volunteers' performance. An assessment was performed after the training, and the assessment results were summarized.

Experiment process recording and data collection

Each volunteer was given an experiment manual to record every link in the production process, including the number and amount of materials used, the technical problems encountered and solutions, and emotional fluctuations. Daily inspections were conducted by the researchers, who videorecorded the production process and stored the process data.

Authenticity verification mechanism for questionnaire data

Periodic surveys were conducted during the production process 12 hours, 24 hours, and 48 hours after the start of the experiment, and a final questionnaire was distributed within 24 hours after the production. After the questionnaires were recovered, they were numbered and sorted to ensure the data integrity. A dual verification mechanism that combined video recording and questionnaire cross-verification was employed to ensure the authenticity of the questionnaire data. Specifically, stratified random sampling was performed to select 30% of the volunteers to produce videos for a frame-by-frame review. Periods with technical issues and parts of the questionnaire that exhibited significant emotional fluctuations were prioritized, and the video footages were compared with the questionnaire data (e.g., number and amount of materials used, details of needlework operations, and problem-solving processes). In addition, for the subjective emotional record in the questionnaire (e.g., "feeling anxious because of complex patterns"), the

duration of the volunteers' pauses during the process, facial expressions, and other nonverbal behaviors in the video were used as evidence. When discrepancies were found between the questionnaire data and the video footages, the researchers reviewed the original records and verified them with the volunteers to correct any data biases to construct a complete and reliable research database.

Evaluation index setting

Evaluation index: The total time of the fabric-making process was recorded, and the average total time of the two groups of volunteers to complete the fabric-making process was compared. For their energy consumption, the volunteers used a 10-point subjective scale to rate their feelings, such as fatigue, concentration, and mental tension, during the fabric-making process, and the higher the score, the more the energy consumed. For the number of modifications and adjustments, the total number of modifications and adjustments made by the two groups of volunteers in their fabric making was recorded. For the stitch difficulty score, a Chinese traditional embroidery stitch difficulty grading system was used. The characteristics of the fabric stitches mentioned in *Dream of the Red Chamber* were combined, the difficulty level of the stitches used in the fabrics was assigned, and the total score, which is based on the number and combination of stitches, was calculated. Specifically, 1–5 points were given to flat needle, winding needle, sleeve needle, seeding needle, and random needle stitches, and the total difficulty score of all the stitches was recorded. The total score ranged from 5 to 25 points, and the higher the score, the more difficult the stitches used. The warp and weft yarn density was measured with a fabric density mirror to the integer number of the warp and weft yarn per square centimeter of the fabric, and the final measurement value was taken as the average warp and weft yarn density [14]. The values were assigned points, that is, ≤ 20 × 20 /cm^2 = 1 point, 20.01 × 20.01–25 × 25 /cm^2 = 2 points, 25.01 × 25.01–30 × 30 /cm^2 = 3 points, 30.01 × 30.01–35 × 35 /cm^2 = 4 points, and 35 × 35 root/cm^2 = 5 points. The pattern and color richness, statistical color type, and average number of pattern elements. These visual feature indicators can not only quantitatively describe the aesthetic characteristics of the target object (such as traditional crafts, product designs, or natural textures), but also provide objective data support for subsequent style classification, design optimization, or cultural connotation analysis of the object. The emotional input score was determined with a self-made emotional input scale that contained 15 items and evaluated from the dimensions of production motivation (e.g., "Do you think of a specific object when making a fabric?"), emotional resonance (e.g., "Do you feel any special emotions when making a fabric?"), and concentration (e.g., "Do you ignore time because of the input?"). The items were measured on a five-point Likert scale

ranging from 1 (*complete nonconformity*) to 5 (*complete conformity*). The reliability coefficient (Cronbach's α) of the scale was 0.85 after the preexperiment test. The total score of the scale was between 15 and 75, which was directly proportional to the degree of emotional involvement.

RESULTS AND DISCUSSION

Total Production Time

Figure 1 shows the average time of the two groups of volunteers to finish their fabrics. From the figure, it can be seen that the average time of the observation group to finish the fabrics is longer than that of the control group. The fabrics made by the observation group exhibit specific emotional color patterns and will be given to an important person. Moreover, the technological complexity of the fabrics of the observation group far exceeds that of the simple plain fabrics of the control group. Complex embroidery stitches, multilevel pattern designs, and fine color matching require a considerable amount of time and energy. The experiment data are changed from "simple numerical differences" into a complete narrative of "behavior–motivation–cultural/psychological drive" to fill the gaps in the subjective logic behind the question of "Why do this?" for indicators such as the total production time. For example, the high emotional investment score of the observation group can be explained by the volunteers' motivation of "associating with the plot of *Dream of the Red Chamber*."

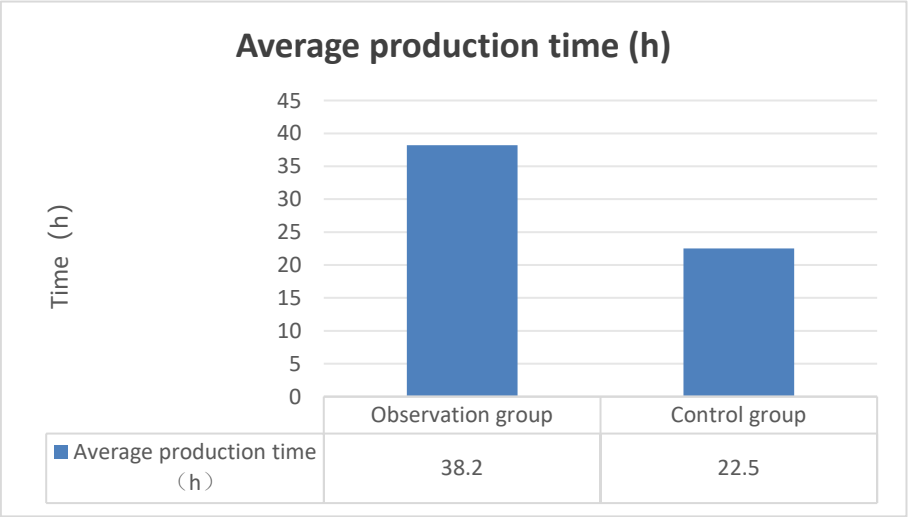


Figure 1. Comparison of total production time of two groups

Energy Consumption Score

Figure 2 shows the energy consumption score of the two groups of volunteers. The results reveal that the subjective energy consumption score of the observation group is significantly higher than that of the control group, which indicates that the fabrics based on *Dream of the Red Chamber* completed by the volunteers in the observation group are rich in specific emotional colors and required the expression of a variety of emotions. In *Dream of the Red Chamber*, fabrics are typically used as emotional carriers to convey complex emotions, such as thoughts and blessings [15].

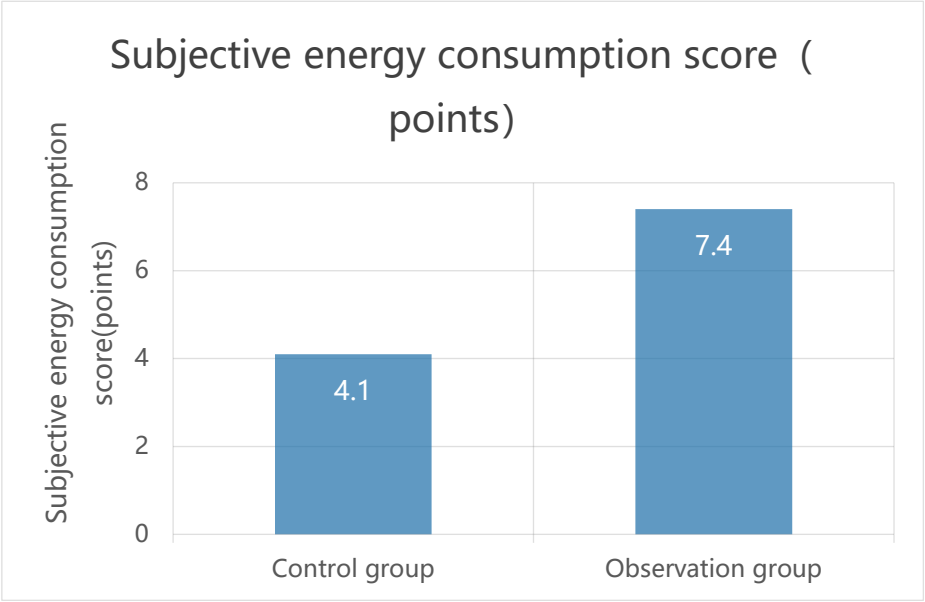


Figure 2. Comparison of energy consumption score of two groups

Number of Modifications and Adjustments

Figure 3 presents the total number of modifications and adjustments made by the two groups of volunteers in finishing their fabrics. The average number of modifications and adjustments made by the observation group is significantly higher than that of the control group, which is related to the emotional colors used by the observation group and the complexity of the fabrics.

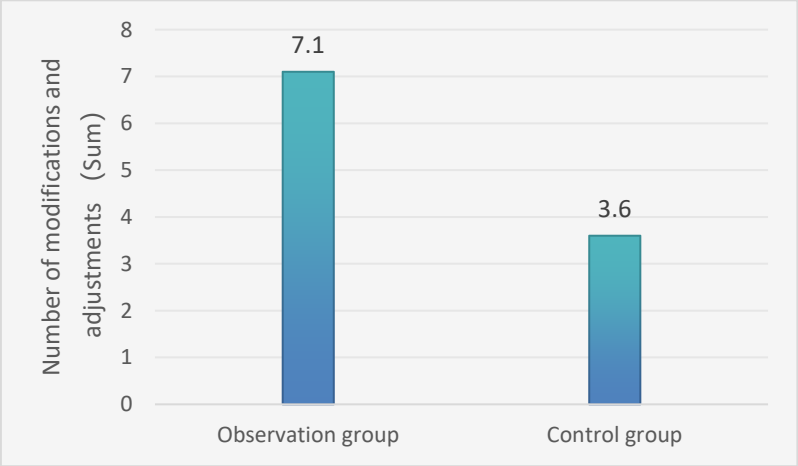


Figure 3. Comparison of number of modifications and adjustments of two groups

Stitch Difficulty Score

Figure 4 illustrates the difficulty score of the two groups of volunteers. The average stitch difficult score of the observation group is higher than that of the control group, which indicates that the difficulty of the stitches used by the observation group volunteers in making their fabrics, with emotional colors based on *Dream of the Red Chamber*, is higher than that of the stitches used by the control group volunteers in making their fabrics, without any emotional colors. The fabrics of the observation group will be given as a gift to an important person. Traditionally, such fabrics can show the creator's respect for others through their exquisite craftsmanship and design. At the same time, such fabrics can showcase the ability and mind of the producer. The simple fabrics made by the control group, without a specific emotional orientation, lack cultural and emotional motivations, and their technology and design are relatively simple.

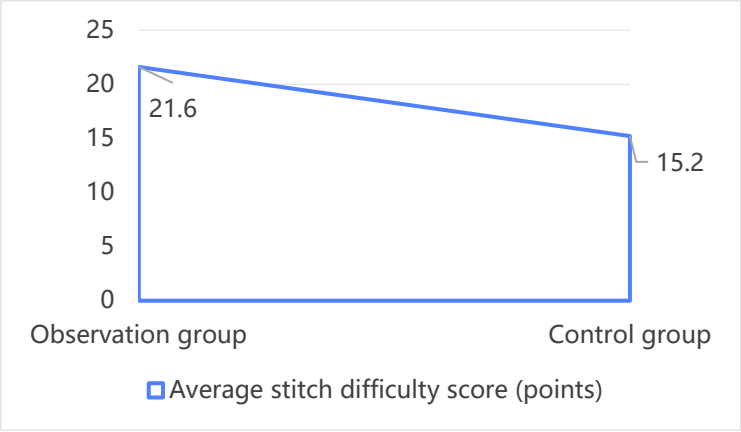
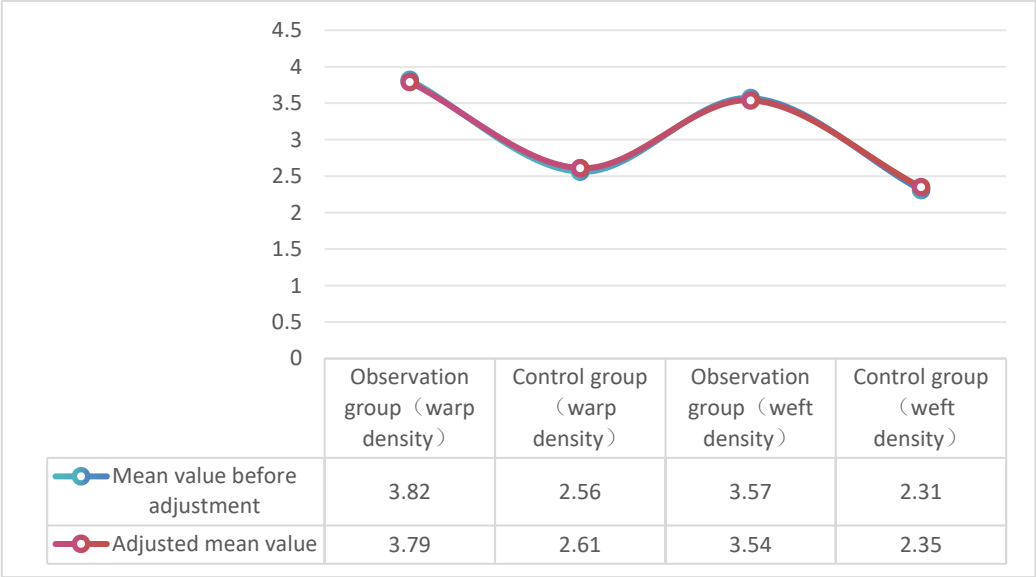


Figure 4. Comparison of stitch difficulty score of two groups

Warp and Weft Yarn Density Score

Covariance analysis is conducted to analyze the difference in the warp and weft yarn density scores of the two groups of volunteers to ensure the accuracy and reliability of the experiment results. Besides artistic training, other factors that may influence fabric production, such as textile experience, practical skills, and interest in textiles, are considered and included as covariates. Figure 5 exhibits a comparison of the warp and weft yarn density of the two groups before and after the adjustment of the covariates. The data indicate that, after the adjustment of the covariates, the indicators for the observation group became higher than those for the control group, which signifies a significant grouping effect.



	Observation group（warp density）	Control group（warp density）	Observation group（weft density）	Control group（weft density）
Mean value before adjustment	3.82	2.56	3.57	2.31
Adjusted mean value	3.79	2.61	3.54	2.35

Figure 5. Comparison of two sets of warp and weft yarn density scores

Pattern and Color Richness

Figure 6 shows the statistical results of the pattern and color richness of the fabrics made by the two groups of volunteers. The average number of colors and pattern elements used in the fabrics made by the volunteers in the observation group is higher than that used in the fabrics made by the volunteers in the control group. Observing the emotional colors used in a fabric will evoke emotions in the creator in the process of finishing their fabric, which will motivate them to spend a considerable amount of time and energy in designing patterns and choosing colors to express their inner feelings through their exquisite work [16].

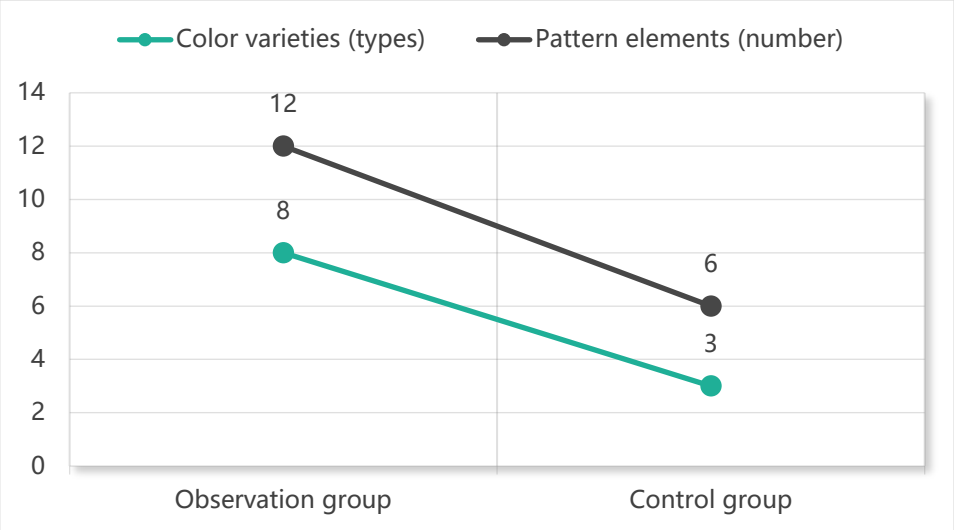


Figure 6. Comparison of pattern richness and color diversity of fabrics of two groups

Emotional Engagement Score

Figure 7 illustrates the emotional input score of the two groups of volunteers in the process of finishing their fabrics. From the figure, it can be seen that the average emotional input score of the volunteers in the observation group is significantly higher than that of the volunteers in the control group. Driven by emotional factors, the volunteers in the observation group chose exquisite colors, fine patterns, and difficult stitches, which is consistent with the traditional concept of showing respect for others through exquisite craftsmanship and design [17]. To meet such emotional demands, the volunteers in the observation group needed to devote a considerable amount of time and emotions.

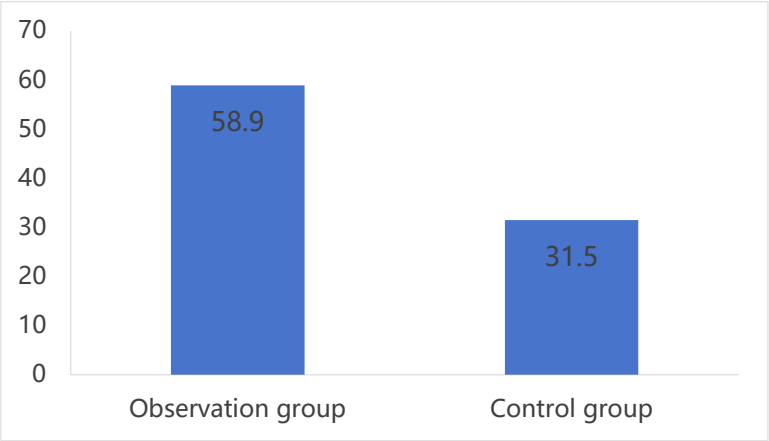


Figure 7. Comparison of emotional engagement score of two groups

Given the different types of emotions, the fabric results may vary. Therefore, the differences in love and family affection between the two groups are compared. The data show that 70% of the volunteers in the observation group incorporated romantic symbols into their fabrics, such as Bao and Dai reading *The Western Chamber*, whereas 10% of the volunteers in the control group used simple heart shapes in their fabrics. In terms of family affection, 80% of the volunteers in the observation group used elements such as Grandma Jia's gift of a golden fox fur coat, whereas 20% of the volunteers in the control group chose traditional lace borders.

CONCLUSION

In the field of women's emotional history, traditional research relied typically on written records, such as diaries and letters. However, such materials were often written from or filtered through the male perspective, which has led to the long-term concealment of women's genuine emotions. This study focuses on fabric making, which is a craft historically dominated by women, to provide new research dimensions. The intricate embroidery techniques and time-consuming production process of the observation group reveal how women use fabrics as a medium for emotional expression by encoding complex emotions, such as love, filial piety, and longing, into every stitch. From the perspective of material culture, previous studies focused primarily on how material objects can reflect social status and economic conditions. This study further reveals the deep emotional logic behind material production. Fabric making is no longer merely a technical activity and has become a dynamic medium for emotional expression. Influenced by cultural traditions, the volunteers consciously chose complex patterns and techniques and thus demonstrated that the form and function of material objects can be shaped by emotional motivations and cultural significance. In summary, the differences in the fabric production data between the observation group and the control group result from the combined action of various factors, such as process complexity, emotional motivations, cultural traditions, and psychological expectations. In terms of process complexity, the observation group adopted complex embroidery stitching methods and multilevel pattern designs. For example, for seed beating, the silk thread must be wound around the needle several times before the needle penetrates the fabric to form the granules, and each tiny pattern must be repeated many times, and the strength and angle requirements are extremely high. Compared with the simple plain knitting of the control group for their fabrics, the techniques of the observation group for their fabrics demonstrate high technical difficulty, which made each process longer to complete. With regard to emotional motivations,

such as incorporating different symbols with meaning in a fabric to give as a gift to an important person or to convey specific emotions, the volunteers in the observation group demonstrate high emotional resonance and a strong sense of responsibility. They infused the threads with their feelings and invested a considerable amount of time in perfecting the details to ensure that their fabric will accurately convey their feelings. In terms of cultural traditions, the volunteers in the observation group made their fabric for an important person. Under the influence of cultural traditions, the volunteers subconsciously espoused the concept of "showing gifts with things" and believed that exquisite craftsmanship and design can show respect for others and highlight the creator's self-cultivation. Therefore, they used difficult stitches, improved the warp and weft yarn density, and enriched the colors of their patterns. With regard to psychological expectations, after the volunteers in the observation group clarified the significance of fabric bearing, they set a high standard for their finished product, which raised their psychological expectations. Such expectations can be transformed into self-restraint, which can drive creators to pursue perfection in the production process.

However, this study has certain limitations. Primarily, it used only Chinese volunteers as the subject, which limits the cultural applicability of the findings. In traditional Chinese culture, fabrics showcase deep emotional symbols. For example, a thread in a mother's hand symbolizes familial affection, and red beans symbolize longing and romantic love. Moreover, gift-giving rituals convey emotions through objects [18]. Such cultural contexts can significantly influence the volunteers' production behavior. The research conclusions are applicable only to groups with similar cultural backgrounds and cannot be applied directly to Western cultures, which emphasize individualism; other East Asian cultures, which value collectivism; or cultural systems with unique textile traditions, such as African tribal textiles and Native American totemic embroidery. Future research should broaden the cross-cultural sample by including volunteers from East Asia (Japan and South Korea), the West (Europe and North and South America), Southeast Asia, and Africa and stratifying them on the basis of their cultural background and artistic training to compare the commonalities and differences in fabric emotional expression across cultures. For non-Chinese samples, the emotional elements from *Dream of the Red Chamber* should be replaced with local classic literary or artistic symbols (e.g., *Romeo and Juliet* in the West and *The Tale of Genji* in Japan) to ensure the cultural appropriateness of the experiment stimuli.

The findings can not only deepen our understanding of the relationship between ancient women's weaving labor and emotional expression in *Dream of the Red Chamber* but also offer valuable insights for modern

fabric design and production in four areas. First, fabric design should incorporate emotions. Designers can draw inspiration from how ancient women infused their emotions into fabrics, should deeply understand users' needs, and interpret the emotional stories behind fabrics to transform elements like love and longing into their design language [19]. Second, traditional techniques should be preserved. The intricate traditional embroidery used by the observation group showcases the exquisite craftsmanship of ancient textiles. In modern fabric production, the examination and preservation of traditional skills should be enhanced, and traditional weaving techniques should be integrated into contemporary design concepts [20]. Third, cultural significance should be explored. The cultural essence of traditional patterns, auspicious symbols, and historical stories should be explored in depth and integrated into fabric designs [21]. Fourth, user experience should be emphasized. For instance, the "Daiyu Buries Flowers" series of scarves, which is a collaboration between the Suzhou Museum and the Zhixi brand, uses 3D scanning technology to recreate the floral motifs from *Dream of the Red Chamber* illustrations and is crafted by using traditional *kesi* weaving techniques [22]. Such practices can not only transform literary classics into wearable art but also allow consumers to immerse themselves in traditional culture through the modern interpretation of intangible cultural heritage [23]. Furthermore, such practices align with the concept of "living inheritance" in intangible cultural heritage research by integrating traditional textile techniques into cultural heritage digital protection systems to sustain the vitality of such crafts and address modern users' emotional need for cultural consumption. This approach can offer an interdisciplinary solution to enhance user experience in textile design.

Author Contributions

Yanping Wang designed, collected and analyzed the data, and drafted the manuscript. Yanping Wang conducted the study, critically revised the manuscript for important intellectual content, and gave final approval of the version to be published. Yanping Wang participated fully in the work, take public responsibility for appropriate portions of the content, and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflicts of Interest

The author declares no conflict of interest.

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Ethics Approval and Consent to Participate

This survey was conducted in compliance with Ethics Committee of Hainan Vocational University of Science and Technology. Participants were informed of the study's purpose and data usage prior to participation, and responses were collected anonymously. No personally identifiable information was stored.

Availability of Data and Materials

The datasets used and/or analysed during the current study were available from the corresponding author on reasonable request.

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Not applicable.

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