

The Longzhou Zhuang Brocade Weaving Technique: Talent Fault Crisis and Vocational Education

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Abstract

The Longzhou Zhuang brocade weaving technique occupies an important place in the local community and economy. It is facing a crisis due to the influence of modernization and foreign cultures. This study set two objectives: (1) to study the talent crisis faced by Longzhou Zhuang brocade weaving technique and its causes; (2) to study effective vocational education countermeasures. A qualitative research method was used, combining fieldwork instruments such as document analysis, field observation, in-depth interviews, and data collection with the help of tools such as interview outlines, observation record forms, document analysis forms, and non-scale questionnaires. The study sample consisted of 6 key informants, 12 practice informants and 20 general informants. The study used descriptive statistics and hypothesis testing for data analysis. The results of this study are as follows (1) The brocade weaving technique is facing a crisis of a significant decrease in the number of weavers, a general aging of key skill masters, and a generally low level of social recognition of weavers, and the main reasons for these crises include economic structural shifts, changes in family structure, and the complexity of the skill itself. (2) This study proposes countermeasures such as establishing relevant specialties in vocational colleges and universities, implementing the modern apprenticeship system, deepening school-enterprise cooperation, and strengthening education on cultural self-confidence and value identity. Compared with previous studies, this study is the first to explore the inheritance of Longzhou Zhuang brocade weaving from the perspective of vocational education. The results of this study have certain reference value for the inheritors of Longzhou Zhuang brocade weaving technique, related vocational colleges and universities, and local governments.

Keywords: Longzhou Zhuang brocade weaving technique; Talent fault crisis; Vocational education strategy; Technique inheritance; Social recognition

Introduction

This research topic focuses on the Longzhou Zhuang brocade weaving technique, an intangible cultural heritage that carries deep ethnic cultural heritage and historical memory. Longzhou is a county in Chongzuo City, Guangxi Zhuang Autonomous Region, People's Republic of China, located in the southwestern part of the Guangxi Zhuang Autonomous Region, the western part of Chongzuo City, the upper reaches of the Zuojiang River, south of the Tropic of Cancer, with a latitude of 22°8'49.35"-22°44'42.30" north and a longitude of 106°33'23.33"-107°12'42.56". Longzhou Zhuang brocade weaving is not only an important part of the local community and culture, but also vividly reflects the wisdom and creativity of the Zhuang people. As stated by Ma (2007), Zhuang brocade weaving, as a carrier of ethnic culture, has far-reaching and unique artistic value and aesthetic connotation. However, with the

acceleration of modernization and the impact of foreign cultures, this traditional skill is facing unprecedented challenges, especially the crisis of the talent gap, which puts the inheritance and development of the skill in a difficult situation.

The importance of the Longzhou Zhuang brocade weaving technique cannot be ignored. It is not only a unique form of cultural expression, but also carries the historical memory and identity of the Zhuang people. However, as Fan (2019) points out, the transmission of brocade weaving technique is facing many challenges as society changes. In the past, the brocade weaving technique occupied a pivotal position in the Zhuang community, but now it is gradually marginalized, with the number of weavers decreasing sharply and the masters of key skills aging seriously. If this phenomenon persists, it will not only lead to the loss of brocade weaving technique, but also the gradual disappearance of an important part of Zhuang culture.

So far, studies on the Longzhou Zhuang brocade weaving technique have mainly focused on the description of the technique, its historical origin and cultural value. For example, Lu (2019) provides a detailed compendium of the origin and evolution of Zhuang brocade weaving, while Wang (2022) explores the current status of its inheritance and development strategies. However, there is still a lack of research on the problem of talent faults in the inheritance of skills and the deep-rooted reasons behind them, as well as how to solve this problem through vocational education strategies.

To sum up, this study aims to deeply explore the phenomenon of talent fault in Longzhou Zhuang brocade weaving technique, analyze the deep-rooted reasons behind it by combining with the research results of the previous researchers, and put forward an effective strategy of vocational education. Through this study, we expect to provide new ideas and paths for the protection and inheritance of Longzhou Zhuang brocade weaving technique, and also contribute new theoretical perspectives and practical references for the inheritance and protection of intangible cultural heritage.

Research Objectives

1. To Study the talent crisis and reasons facing the Longzhou Zhuang brocade weaving technique.
2. To Study effective vocational education countermeasures.

Literature Review

Previous studies on brocade weaving technique have accumulated rich results, which not only reveal the historical origin and cultural connotation of brocade weaving technique, but also explore its value in contemporary society in depth. For example, Lu Qiong's dissertation emphasizes the importance of Zhuang brocade weaving as a carrier of national culture by combing through the developmental flux of Zhuang brocade weaving culture, and points out the potential of transforming and applying traditional elements in modern design (Lu, 2019). Wang Mei's study explores the historical origin, artistic characteristics, inheritance status and development strategies of Zhuang brocade weaving technique in Longzhou, Guangxi. By analyzing the inheritance mode and the dilemmas faced by Longzhou Zhuang brocade weaving technique, specific development paths such as combining modern science and technology, innovating the marketing mode, and strengthening the inheritor's responsibility for innovation are proposed, aiming to promote the sustainable development of Longzhou Zhuang brocade

weaving technique (Wang, 2022). Fan Zhidao's study comprehensively examined the historical development, loom structure, weaving process, cultural and artistic characteristics, and the current status of inheritance of Zhuang brocade weaving technique in Longzhou, Guangxi. Using a variety of research methods, combined with oral history interviews and field surveys, it systematically elaborates the uniqueness of Longzhou Zhuang brocade weaving technique, and proposes an innovative inheritance model of multi-party cooperation led by the government, organized by the association, and participated by the inheritors in response to the inheritance dilemma (Fan, 2019).

Regarding the role of vocational education in the inheritance of skills, last night's study by Qian Yihui and Huang pointed out that the cultivation of professionals in intangible cultural heritage requires the improvement of the education system, the reinforcement of governmental functions, and the promotion of vocationalization and multidisciplinary exchanges and collaboration (Qian & Huang, 2013). Gao Han et al. explored the problems faced by intergenerational inheritance of rural handicrafts, and took Tujia brocade weaving in western Hunan as an example, proposing vocational education countermeasures to promote the inheritance and development of rural handicrafts by establishing specialties, standardizing school curricula, carrying out school-based training, and building innovative platforms (Gao, Chen & Jiang, 2017). Taking Suzhou embroidery as an example, Ye Shengyan and Jia Limin analyzed the inheritance methods of traditional handicrafts and proposed innovative talent cultivation modes such as "order-type cultivation", "master studio system" and the intervention of modern education technology, aiming at enriching and expanding the cultivation of traditional handicrafts talent. The aim is to enrich and expand the path of traditional handicraft talents training (Ye & Jia, 2011). Sun Jiapeng et al. elaborated the necessity and logical starting point of diversified cultivation of traditional handicraft talents in vocational colleges and universities, constructed three cultivation modes: academic education, vocational training, and academic education + vocational training, and put forward promotion strategies such as strengthening the survey of student sources and establishing a modularized curriculum system (Sun, Shi & Wang, 2023).

Although many results have been achieved in brocade weaving technique, cultural inheritance and vocational education, there are still some gaps and deficiencies in the current research. Firstly, there are relatively few specialized studies on Longzhou Zhuang brocade weaving technique, especially the lack of in-depth studies on the crisis of talent fault and the response strategy of vocational education. Secondly, the existing studies mostly focus on the descriptive analysis of the skills themselves or the inheritance mechanism, but less on the specific role and implementation path of vocational education in the inheritance of the skills. Finally, there is a lack of systematic and comprehensive research that closely combines the inheritance of brocade weaving technique with the innovation of vocational education.

Research Methodology

1. Research methodology

This study adopted a mixed research methodology combining qualitative and quantitative research by collecting and analyzing quantitative data, including non-scaled questionnaires, and qualitative data, including interview transcripts and observation notes, in order to explore the research questions in a more comprehensive and multi-faceted way, and to integrate the strengths of the two research methods, so as to draw more comprehensive and accurate conclusions.

2. Population and sample group

The study involved a total of 38 respondents, all from Jinlong Town, the origin of Longzhou Zhuang brocade weaving. They were categorized as follows: 6 key informants, including heads of government departments and industry experts. 12 practical informants, who are actively involved in brocade weaving. 20 general respondents, individuals from the wider community with varying degrees of connection to the craft.

3. Research tools

Three research tools were used in this study to aid the investigation, first, the interview guide, a structured and semi-structured guide used to facilitate in-depth interviews. The second is the observation guide, which was used to systematically record data during field observations. The third was a focus group discussion guide, which was designed to guide discussions and ensure comprehensive coverage of relevant topics.

4. Data collection

The data for this study came from four sources. (1) Literature analysis, an extensive review of existing literature on traditional crafts, cultural heritage preservation and vocational education. (2) Field observation, directly observing brocade weaving practices and interacting with practitioners in the Longzhou area. (3) In-depth interviews with heads of governmental cultural and tourism departments, scholars, and practitioners of the Zhuang brocade weaving. They were categorized as follows: 6 key informants, including heads of government department industry. (4) Focus group discussions with different groups of people, including key respondents, practicing respondents and general respondents from different social backgrounds, in two different communities in Longzhou.

5. Data analysis

The thesis mainly adopts the data analysis method of descriptive statistics. Specifically, by organizing and analyzing the data collected in the fieldwork, the thesis presents several statistical tables to describe the current situation and problems of the inheritance of the Zhuang brocade weaving technique in Longzhou.

Research Conceptual framework

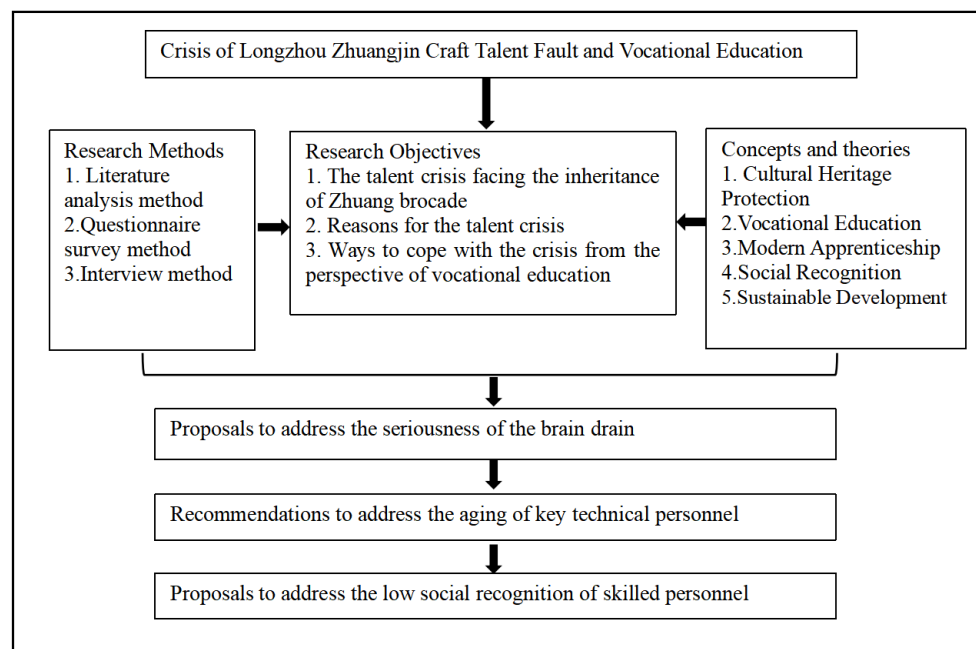


Figure 1: Research Conceptual Framework

Results

1. Talent crisis and reasons faced by Longzhou Zhuang brocade weaving technique

1.1 Talent crisis facing Longzhou Zhuang brocade weaving technique

1.1.1 Decrease in the number of weavers

In a survey of Longzhou Zhuang brocade weaving technique conducted in Banchi village and the Happy Home community in Longzhou County, the contrasting data reveals a significant decline in the number of weavers. Specifically, there are 798 people in Banchi village, distributed among 183 households, of which only 60 households have brocade weavers and 78 looms, but the number of actual weavers has plummeted to 23, which is only about one-third of the number of weavers. At the same time, there are 375 people working outside of Banchi village, accounting for nearly half of the total number of people, further emphasizing the loss of manpower for the inheritance of the skills. In terms of age structure, there are only 2 young artists under the age of 25, while there are as many as 41 old artists over the age of 60, reflecting the crisis of generation break in the inheritance of skills.

In contrast, although the total population of the Happy Home community reaches 2,382 people and the total number of households is 551, the number of households with someone who can weave brocade is only 43, which is an even lower percentage. The number of looms has even decreased dramatically to 12, showing the extreme shrinkage of brocade weaving activities. Although the number of active weavers is relatively high, at 46,

the proportion of those who weave is still unsatisfactory, and given the size of the community, this figure actually reflects a general weakening of skill transmission. In addition, the number of migrant workers in the Happy Home community is as high as 826, which also accounts for a significant proportion of the total number of workers, exacerbating the difficulties of skill transmission. In terms of age distribution, the two communities show a similar trend, with a scarcity of young artists and a high proportion of old artists. There are only three artists under the age of 25 and seven over the age of 60 in the Happiness Home community, which further confirms the urgency of the inheritance of the skills.

Table 1 Basic statistics of Zhuang brocade weaving technique in Longzhou county, 2024

Investigative project	Banchi village	Happy home community
Total number of people	798	2382
Total number of households	183	551
Who knows how to weave brocade	60	43
Number of looms	78	12
Number of participants	60	47
Number of weavers	23	46
Working outside the home	375	826
Nnder 25 years of age	2	3
Over 60 years of age	41	7

Data source: Yongteng Luo

1.1.2 Fewer and older weavers mastering key technique

Longzhou Zhuang brocade weaving, a handmade skill that carries a deep ethnic cultural heritage, has a superb process that includes nine complex steps such as splitting, spinning, drawing, pouring, dyeing, sizing, winding, warping, and loading (Fan, 2019, p. 54). Among them, the warp-drawing technique is particularly crucial, not only as the core link in transforming the design into a brocade template, but also to ensure the precise presentation of the brocade pattern.

However, the number of weavers who have mastered this skill is small and aging. In Banchi village and Happy Home, there are 60 and 47 weavers respectively, but only 3 and 1 are skillful in drawing warp, and all of them are over 50 years old, some of them are even over 70 years old. This shows the Longzhou Zhuang brocade weaving technique facing the crisis of talent fault, the inheritance of the warp-drawing skills is imminent.

Table 2 Basic statistics of Zhuang brocade weaving technique in Longzhou county, 2024

Investigative project	Banchi village	Happy home community
Total number of people	798	2382
Number of participants	60	47
Warp-drawing techniques	3	1
Nnder 25 years of age	0	0
Over 25-60 years of age	0	1
Over 60 years of age	3	0

Data source: Yongteng Luo

1.1.3 Low social recognition of organizers

In order to understand the social recognition of Zhuang brocade weavers, we interviewed 68 local weavers and residents in six areas: income, social reputation, media coverage, cultural heritage, educational support and employment prospects. The results showed that the social recognition of the weavers was generally low: 77.9% thought that the income of the weavers was low; 64.7% thought that their social reputation was average or low; 70.6% said that they seldom saw any reports about Zhuang brocade or the weavers; only 14.7% had a high willingness to pass on their heritage; 79.4% did not know that there were any schools or organizations that offered courses on Zhuang brocade; and 75.0% were not optimistic about the employment prospects of the weavers. These data show that the social recognition of Zhuang brocade weavers needs to be improved.

Table 3 Statistics on low social recognition of

Investigative project	Viewpoint	Quantity	Percentage (%)
Income level	Low or very low	53	77.9
	Conveniently situated	8	11.8
	High or very high	7	10.3
Social reputation	Fair or low	44	64.7
	High or very high	11	16.2
	Inconclusive	13	19.1
Media report	Rarely or never	48	70.6
	Non-recurrent	10	14.7
	Now and then	10	14.7
Agree to pass on to children	Low or very low	41	60.3
	General	17	25.0
	High	10	14.7
Educational support	Don't know or haven't heard.	54	79.4
	Knowing	7	10.3
	I've heard of it	7	10.3
Employment prospect	Very optimistic	51	75.0
	Optimistic	7	10.3
	Inconclusive	10	14.7

Data source: Yongteng Luo

1.2 Causes of the talent crisis

1.2.1 Reasons for the decrease in the number of weavers

The reasons for the decline of Zhuang brocade weavers in Longzhou are diverse and complex, involving many aspects. With the rapid development of modern industrialization, traditional handicrafts have been impacted, and the market demand for Zhuang brocade has gradually decreased, leading to a decline in economic benefits. This has forced many Zhuang brocade weavers to choose to go out to work in order to increase their income, which has directly caused a sharp decline in the number of weavers. In addition, changes in family structure have also affected the inheritance of skills. As the family model tends to become smaller, the younger generation is faced with more choices and tends to

prefer modernized occupations, with a significantly lower interest in and willingness to inherit the Zhuang brocade weaving technique. At the same time, the complexity and long learning cycle of the Zhuang brocade weaving technique have also increased the difficulty of inheritance, and many potential learners have been deterred. In addition, the modern education system does not provide enough training for traditional handicrafts, which makes the younger generation's understanding and recognition of Zhuangjin skills limited. To summarize, Longzhou Zhuang brocade weaving is facing a serious challenge of inheritance, which requires the joint efforts of all aspects of society to protect and inherit this valuable cultural heritage.

1.2.2 Reasons for the small number and age of weavers with key skills

As a valuable intangible cultural heritage of the Chinese nation, Longzhou Zhuang brocade weaving is facing many challenges in the inheritance and protection of its techniques, one of the most urgent problems is the scarcity and age of weavers who master the key techniques. The reasons for this phenomenon can be attributed to the following aspects. The learning process of brocade weaving is complex and time-consuming, especially the warp-drawing technique, which requires a high degree of precision and patience (Fan, 2019, p. 54). The fast-paced life of modern society makes young people more inclined to choose career paths with quick results rather than investing a lot of time and energy in learning this traditional skill. As a result, the number of young people who are willing to learn and master the brocade weaving technique in depth is gradually decreasing.

The inheritance of brocade weaving technique mainly relies on the family or master-apprentice system, and this mode of inheritance restricts the wide dissemination of the skills (Wang, 2022). In Longzhou, many weavers pass on their skills within their families, but this mode of transmission often makes it difficult for the skills to break through the limitations of geography and bloodline, which in turn restricts the popularization and development of the skills. In addition, due to the long and difficult learning cycle of brocade weaving technique, many young people find it difficult to find suitable masters for systematic learning even if they are interested.

1.2.3 Reasons for low social acceptance of weavers

The reasons for the low social recognition of Zhuang brocade weavers in Longzhou involve a number of aspects. First of all, the economic income of the weavers is generally low, which affects the social evaluation of the occupation. In modern society, economic income is often regarded as an important indicator of the value of an occupation, so the low income of Zhuang brocade weavers directly contributes to their lower social recognition.

Secondly, as a traditional handicraft, Zhuang brocade weaving faces the impact of the aesthetic and consumption concepts of modern society. With the acceleration of the modernization process, people's aesthetic and consumption habits have changed, and their attention to and demand for traditional handicrafts have gradually decreased, which also affects the social recognition of Zhuang brocade weaving.

In addition, there is relatively little publicity and coverage of Zhuang brocade weavers in the media, resulting in limited public understanding and awareness of this occupation. In the information age, media publicity and promotion are crucial to enhancing the social recognition of an occupation, and the lack of media exposure of Zhuang brocade weavers has undoubtedly exacerbated the problem of their low social recognition.

2. Effective vocational education responses

2.1 Promote Zhuang brocade weaving technique education in vocational colleges and universities and implement diversified enrollment

In order to cope with the shortage of weavers, vocational colleges and universities should actively set up majors related to the Zhuang brocade weaving technique. This specialization should be combined with the local cultural characteristics of Zhuang brocade, and build a curriculum system that integrates traditional techniques with modern design elements. In addition to enrolling students for general high schools, vocational colleges should also work closely with secondary vocational institutions to implement middle and high vocational articulation education and broaden enrollment channels. At the same time, special enrollment programs are provided for specific groups such as veterans and laid-off workers, and tailored teaching programs are developed according to their actual needs. In addition, strengthening school-enterprise cooperation is the key to give students the opportunity to personally participate in the actual production projects of enterprises, so as to deepen their understanding and application of Zhuang brocade weaving technique and enhance their practical ability and market adaptability.

2.2 Implement modern apprenticeships and emphasize skills re-education

In order to pass on the Zhuang brocade weaving technique more effectively, we should draw on the traditional master-apprentice system and combine it with the characteristics of modern vocational education to implement the "master-apprentice" and modern apprenticeship systems. This means inviting experienced old Zhuang brocade weavers to act as mentors and personally guide students to ensure that key skills are passed on. At the same time, for middle-aged and older weavers already in the industry, we should carry out skills upgrading and re-education programs. For example, through short-term intensive training, we should invite experts to teach new design concepts and craft techniques to help them adapt to the new demands of the market. It is also essential to set up a special fund to support the inheritance and innovation of skills, which will further stimulate the creativity and enthusiasm of Zhuang brocade practitioners.

2.3 Integration of education, information and economic incentives

To enhance the social recognition of Zhuang brocade weavers, we first need to strengthen education on cultural confidence and value identity. Incorporate Zhuang brocade weaving technique into the vocational education system, not only teaching the skills, but also spreading the cultural and historical values behind them. At the same time, strengthen cooperation with the government, cultural departments and the media, and utilize various publicity platforms, such as the Internet and social media, to promote Zhuang brocade technique and increase public understanding and interest. Economic incentives are also key. We need to develop an income-multiplication program aimed at increasing the economic income of weavers. By providing training courses on marketing and e-commerce operations, we can help weavers broaden their sales channels and enhance their market awareness. In addition, we should explore new modes of cooperation, such as "artisan + enterprise + market", in order to promote the large-scale production and marketization of the Zhuang brocade technique, and thus raise the weavers' income level and social status.

Discussion

It is found that there are problems in the inheritance of brocade weaving technique, such as the decrease in the number of weavers, the aging of key skill masters, and the low social recognition of brocade weaving technique. In view of these problems, this paper proposes a strategy to incorporate brocade weaving technique into the vocational education system, including the establishment of relevant specialties, the implementation of modern apprenticeship system, deepening the cooperation between schools and enterprises, strengthening the education of cultural self-confidence and value identity, as well as strengthening the publicity and promotion and economic incentives, etc., in order to enhance the level of the skills and social acceptance, to attract more young people to participate in the inheritance, and to achieve a win-win situation for the protection of the skills and the development of the economy.

The drastic reduction in the number of weavers, the aging of key skill masters, and the low social recognition of weavers are the current manifestations of the talent fault crisis in the Longzhou Zhuang brocade weaving technique. This result is both the same and different from the studies of Fan (2019) and Gao et al. (2017), in which they also pointed out that the Longzhou Zhuang brocade weaving technique has problems such as a decrease in the number of inheritors, the disinterest of young people, and the low social status of weavers. However, this study found a difference from them through specific data analysis, which is that the key skill masters are decreasing and aging severely, and this issue is a unique finding of this study.

Economic structural transformation has had a profound impact on the market demand for brocade weaving technique. With the acceleration of modern industrialization, mechanized production gradually replaced traditional handicrafts, leading to a decline in the economic benefits of brocade weaving, and many weavers chose to go out to work as a result, a finding that echoes Wang's (2022) analysis of the decline in the economic benefits of traditional handicrafts.

Changes in family structure likewise had a significant impact on skill transmission. The finding that the younger generation is more inclined to choose modernized, high-yield occupations and lacks interest in traditional crafts that are more time-consuming and less economically rewarding supports Gao, H., Chen, B., & Jiang, Y. (2017).

The population of weavers with key skills, such as "warp-drawing" (threading) techniques, is aging. Similar to Fan's (2019) emphasis on the aging population of skilled weavers and the decline in the number of young practitioners, this study finds that this consistency reinforces the notion that traditional crafts are struggling to attract and retain younger generations. The loss of skilled artisans is a common problem for many traditional crafts, and the complexity of the skill itself and the long learning cycle are not negligible factors. The brocade weaving technique requires a long period of learning and practicing, which undoubtedly increases the difficulty of transmission for young people in the modern fast-paced life. This finding echoes Qian and Huang's (2013) findings on the shortcomings in the ICH education system.

The low social recognition and support for weavers is similar to the observations of Lu (2019) and Wang (2022), who noted that social appreciation and economic incentives are crucial for the sustainability of traditional crafts. The low recognition and support in Longzhou highlights the need for targeted awareness campaigns and policy interventions to improve the status of brocade weavers.

This study proposes specific strategies for integrating brocade weaving into the vocational education system, including the establishment of relevant specialties, the implementation of the modern apprenticeship system, and the strengthening of school-enterprise cooperation. These strategies not only draw on previous research results, such as the "order-type training" and "master studio system" proposed by Ye and Jia (2011), but also combine the actual situation of Longzhou Zhuang brocade weaving technique to propose more innovative solutions. The solution is more innovative. The establishment of the relevant specialization aims to cultivate a new generation of inheritors through a systematic and structured curriculum, a strategy that not only helps to improve the professional skills of the weavers, but also strengthens their cultural identity and sense of pride in the brocade weaving technique.

The implementation of the modern apprenticeship system draws on the essence of the traditional master-apprentice system, combines the advantages of modern vocational education, and ensures the effective transmission of key skills by means of "master-apprentice". This model has been effective in the inheritance of Tujia brocade weaving technique in western Hunan (Gao et al., 2017), and this study further explores the potential of its application in Zhuang brocade weaving technique in Longzhou. Strengthening school-enterprise cooperation not only enhances students' practical skills and market adaptability, but also promotes the in-depth integration of the skills with the market, providing strong support for the industrialization of brocade weaving technique. The implementation of this strategy can help to break the geographical limitation of the inheritance of the skills and realize the wide dissemination and innovative development of the skills.

Vocational education and training, this study builds on Gao, Chen, & Jiang's (2017) research on the role of vocational education in preserving traditional crafts. The strategies proposed, such as integrating brocade weaving technique into vocational school curricula and promoting modern apprenticeship models, are consistent with the recommendations of these scholars. The findings suggest that vocational education can play a key role in bridging the talent gap, although implementation challenges remain.

In summary, from the point of view of the research concept, comparing with the predecessors, the predecessors have made many achievements in brocade weaving technique, cultural inheritance and vocational education, but there are relatively few specialized researches for this place of Longzhou, and even fewer researches from the aspect of the specific role of vocational education in the inheritance of the skills and the path of implementation, so their researches lack of systematicity and comprehensiveness, and they can't combine the inheritance of the brocade weaving technique and the innovation of vocational education. Therefore, their research lacks systematic and comprehensive, and cannot closely integrate the inheritance of brocade weaving technique with the innovation of vocational education.

The innovative nature of this study is targeted and comprehensive in the use of research concepts. This study is the first time that the concept of vocational education is used to study Longzhou Zhuang brocade weaving, which has strong regionality and relevance, and can provide specific guidance for local skills inheritance. It is also the first time that this study combines the concepts of talent crisis and vocational education to analyze and guide traditional skills inheritance, local economic development and vocational education innovation, which forms a systematic and comprehensive research paradigm and conceptual framework.

Limitations of this study, the sample size of this study, although diverse, is relatively small, which may limit the generalizability of the findings. In addition, our focus on the Longzhou Zhuang brocade weaving technique means that the findings may not be directly applicable to other traditional crafts. Future research should involve larger sample sizes and explore different cultural contexts to validate and extend these findings.

Recommendations

1. Theoretical recommendations

Using a multidisciplinary research method, combining the theories and perspectives of cultural anthropology, sociology, pedagogy, economics and other disciplines, we comprehensively scrutinize the inheritance and development of the Longzhou Zhuang brocade weaving technique. This interdisciplinary approach helps to explore the complex social, economic and cultural factors behind the inheritance of the skills, and provides theoretical support for the development of more scientific and reasonable protection strategies.

The concepts of conflict and negotiation can be used. Conflict, in the context of Longzhou Zhuang brocade weaving technique inheritance, mainly refers to the various obstacles and contradictions encountered in the process of skills inheritance. Negotiation refers to the process of seeking consensus and solutions in the midst of conflicts and disagreements. This process is particularly evident in the context of globalization.

2. Policy recommendations

Vocational education institutions should design and implement a comprehensive set of policies to support the integration of traditional crafts into vocational education curricula, including the establishment of specialized courses and disciplines focusing on traditional crafts in vocational institutions.

Governments should encourage young people to take up traditional craft-related occupations by providing financial incentives, such as grants and subsidies, as a means of alleviating the economic pressures faced by these occupations.

Vocational institutions should proactively seek opportunities for collaboration between schools and enterprises, and promote partnerships between educational institutions and industry stakeholders to increase opportunities for hands-on training and to ensure that vocational education programs are closely aligned with industry needs.

3. Practical recommendations

Vocational education institutions should develop specialized curricula and lesson plans, such as the "Tutorial on the Preparation of Zhuang Brocade", to teach the traditional craft in a comprehensive manner, thus providing students with an in-depth and comprehensive learning experience that will help preserve brocade weaving technique.

Modern apprenticeship systems can be implemented in both modern vocational institutions and enterprises, allowing experienced weavers to mentor young apprentices to ensure the smooth passing on of skills.

Brocade production workshops should utilize modern marketing techniques, such as social media and e-commerce platforms, to enhance the visibility and market competitiveness of traditional crafts and open up new economic opportunities for traditional artisans.

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