



RESEARCH ON THE SUSTAINABILITY OF WUDING YI COSTUME CULTURE
THROUGH PARTICIPATORY DESIGN



By
Mrs. Yi SHI

A Thesis Submitted in Partial Fulfillment of the Requirements
for Doctor of Philosophy Culture - Based Design Arts
Silpakorn University
Academic Year 2025
Copyright of Silpakorn University



วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาคุุณบัณฑิต

สาขาวิชาศิลปะการออกแบบเชิงวัฒนธรรม แบบ 1.1

มหาวิทยาลัยศิลปากร

ปีการศึกษา 2568

ลิขสิทธิ์ของมหาวิทยาลัยศิลปากร

RESEARCH ON THE SUSTAINABILITY OF WUDING YI
COSTUME CULTURE THROUGH PARTICIPATORY DESIGN



A Thesis Submitted in Partial Fulfillment of the Requirements
for Doctor of Philosophy Culture - Based Design Arts
Academic Year 2025
Copyright of Silpakorn University

Title	RESEARCH ON THE SUSTAINABILITY OF WUDING YI COSTUME CULTURE THROUGH PARTICIPATORY DESIGN
By	Mrs. Yi SHI
Field of Study	Culture - Based Design Arts
Advisor	Assistant Professor Phuvanart Rattanaungsikul, Ph.D.

Faculty of Decorative Arts, Silpakorn University in Partial Fulfillment of the
Requirements for the Doctor of Philosophy

.....	Dean of Faculty of Decorative Arts
(Associate Professor Arwin Intrungsi)	

Approved by

.....	Chair person
(Associate Professor Thanongsak Sovajassatakul, Ph.D.)	

.....	Advisor
(Assistant Professor Phuvanart Rattanaungsikul, Ph.D.)	

.....	Committee
(Professor Police Captian Anucha Pangkesorn, Ph.D.)	

.....	Committee
(Assistant Professor Nawat Lertsawaengkit, Ph.D.)	

.....	Committee
(Assistant Professor Sarawuth Pintong, Ph.D.)	

650430034 : Major Culture - Based Design Arts

Keyword : YI COSTUME CULTURE, CULTURAL SUSTAINABILITY,
PARTICIPATORY DESIGN, CULTURAL INHERITANCE

Mrs. Yi SHI : RESEARCH ON THE SUSTAINABILITY OF WUDING YI
COSTUME CULTURE THROUGH PARTICIPATORY DESIGN Thesis advisor :
Assistant Professor Phuwanart Rattananarungsikul, Ph.D.

The Yi people of Chuxiong have a history spanning thousands of years and a rich cultural heritage, with Yi costume culture being particularly prominent. Yi costume integrates both tangible and intangible cultural elements, serving as a symbol and reflection of traditional Yi culture. Although Chuxiong has made some progress in the protection of Yi clothing culture over the past decade, the excessive focus on economic output has led to profits mainly benefiting investors while neglecting the transmission of cultural wisdom. This has failed to meet the cultural needs of the community, resulting in a crisis of cultural identity and weakened sustainability of Yi culture.

The objectives of this research include: 1) To study the tangible wisdom of traditional Yi clothing in Wuding County, such as its forms and craftsmanship, as well as the intangible wisdom, including its history, customs, beliefs, and values. 2) To analyze the cultural value and the current state of inheritance of Wuding Yi costume culture, and the role of community and social participation in cultural sustainability. 3) To design participatory design prototypes, including two-way education programs and educational materials, to propose alternative solutions for fostering the inheritance of Yi costume cultural wisdom.

The research integrates ethnology, semiotics, participatory design theory, and cultural sustainability theory, employing a mixed research method that combines qualitative and quantitative data to derive findings. Stakeholders involved in the study include local Yi community members, clothing culture inheritors, government officials, experts, students, clothing artisans, cultural product development companies, the local Yi embroidery association, and visitors.

Ultimately, this study uses participatory action research and participatory design methods to develop two-way education programs, and educational materials, contributing to the innovative inheritance of Yi costume culture and the sustainability of community culture.

ACKNOWLEDGEMENTS

I express my deepest gratitude to everyone who played a significant role in the completion of my doctoral research project. First and foremost, I would like to express my sincere thanks to my mentor and advisor, Assistant Prof. Dr. Phuvanart Rattananarungsikul, for his unwavering support and insightful advice, which have been the foundation of my doctoral journey. His academic expertise, constructive feedback, and enlightening criticism have been invaluable in shaping my research and improving the quality of my academic work.

I would also like to extend my special thanks to every mentor in the CULTURE- BASED DESIGN ART doctoral program guidance team at Silpakorn University's Faculty of Decorative Arts. Their leadership and dedication to the success of the program have been inspiring. I sincerely appreciate the faculty members and staff of the Faculty of Decorative Arts for their continuous support and assistance throughout this journey.

I wish to thank my fellow scholars for their invaluable help, support, and encouragement in this project. Their insights and feedback have played a crucial role in refining my ideas and enhancing the quality of my work.

I express my deepest love and gratitude to my family for their endless love, support, and understanding throughout this journey.

Lastly, my gratitude goes to all who contributed to the completion of my doctoral research project. This achievement was made possible by your steadfast support, guidance, and encouragement.

Yi SHI

TABLE OF CONTENTS

	Page
ABSTRACT.....	D
ACKNOWLEDGEMENTS.....	E
TABLE OF CONTENTS.....	F
LIST OF TABLES	M
LIST OF FIGURES	N
CHAPTER 1 INTRODUCTION.....	1
1.1 Significant of the Problems.....	1
1.1.1 Background	1
1.1.2 The Research Problems	3
1.1.3 Research Status.....	4
1.1.4 Necessity of the Research.....	6
1.1.5 Importance of the Research to Participants.....	7
1.2 Objectives of the Research.....	8
1.3 Hypothesis	8
1.4 Scope of the Research.....	9
1.4.1 Content Scope.....	9
1.4.2 Population Scope	9
1.4.3 Area Based Scope	9
1.4.4 Time Scope	10
1.5 Assumption framework.....	10
1.6 Definition of Terms	12

1.7 Expected Output - Outcome	13
1.7.1 Expected Output	13
1.7.2 Expected Outcome	14
CHAPTER 2 LITERATURE REVIEW	15
2.1 Overview of Area and History	15
2.1.1 Overview of Area.....	16
2.1.1.1 Living Environment of the Yi People	16
2.1.1.2 Branches of the Yi People	17
2.1.1.3 Language of the Yi People.....	19
2.1.2 Overview of History	20
2.2 Research of related literature	22
2.2.1 The Historical Evolution of Wuding Yi Costumes	22
2.2.2 Classification of Wuding Yi Costumes.....	24
2.2.3 Cultural Meaning of Wuding Yi Costumes.....	32
2.2.3.1 Overview of the Cultural Meaning of Yi Costumes	32
2.2.3.2 Meaning of Styles in Wuding Yi Costumes.....	33
2.2.3.3 Meaning of Materials and Craftsmanship in Wuding Yi Costumes	34
2.2.3.4 Meaning of Colors in Wuding Yi Costumes.....	37
2.2.3.5 Meaning of Embroidery Patterns in Wuding Yi Costumes	39
2.2.4 Comparative Study of Yi and Lisu Costumes Culture	42
2.2.4.1 Cultural Background Comparison.....	42
2.2.4.2 Comparative Study of Costume Cultures	43
2.3 Related Theories	45
2.3.1 Theories of Intangible Cultural Heritage Protection	45

2.3.2 Cultural Sustainability Theory	46
2.3.2.1 Theoretical Foundation.....	46
2.3.2.2 Cultural Heritage and Sustainable Development	47
2.3.2.3 Cultural Heritage Preservation Strategies	48
2.3.3 Cultural Anthropology Theory	49
2.3.4 Semiotics Theory	50
2.3.5 Participatory Design Theory.....	52
2.3.5.1 Theoretical Foundation: Participatory Action Research.....	52
The results of PAR are mainly reflected in three aspects: knowledge, action, and capacities. PAR establishes both local knowledge and conceptual knowledge. PAR projects can generate actions across a broad spectrum (from "small, local" to "large, structural") and on different time scales. Ideally, these actions lead to substantial changes in community power (Cornish & Breton, 2023).....	53
2.3.5.2 Models in Participatory Design Models	53
2.3.5.3 Methods in Participatory Design	54
2.4 Case Study	56
2.4.1 Qiang Costume Identity Revival : A PD Perspective.....	56
2.4.2 Ethnic Tourism Costume Development in Mae Hong Son: Lessons from PD Workshops	56
2.4.3 Living Heritage Conservation in Phuket, Thailand: PD Practical Insights	57
2.4.4 Revival of the Fashion Industry in Waltham Forest: Insights from Community Co-Creation	57
2.4.5 Uyghur Intangible Heritage Preservation: A PD Approach.....	58
2.4.6 Fostering Landscape Identity: Insights from Interdisciplinary Collaboration	59
2.4.7 Revitalizing Weaving Practices in Taiwanese Indigenous Communities: Insights for Localized Sustainable Community Development.....	59
2.5 Pilot research	60
2.5.1 Methods of Pilot Research	60

2.5.2 Fact Findings	61
2.5.3 Research Problems	62
2.6 Summary	62
CHAPTER 3 RESEARCH METHODOLOGY	64
3.1 Method of Research	64
3.1.1 The Philosophical Worldview of Mixed Methods.....	64
3.1.2 Mixed Methods Designs.....	65
3.1.3 Reasons for Choosing Mixed Methods	65
3.2 Sampling of Population.....	66
3.3 Collected Data.....	69
3.3.1 Qualitative Data Collection.....	69
3.3.2 Quantitative Data Collection.....	70
3.4 Data Analysis	70
3.5 Demonstration and Evaluation.....	71
3.6 Tools and Reliability (IOC).....	72
3.6.1 Qualitative Tools	72
3.6.2 Quantitative Tools	73
3.6.3 Item-Objective Congruence (IOC) Validation.....	73
3.7 Research Process	74
3.7.1 Data Collection.....	75
3.7.1.1 Fieldwork from a Cultural Anthropological Perspective	75
3.7.1.2 Data Collection from a Semiotic Perspective.....	75
3.7.1.3 Thick Description and Multi-Actor Verification	75
3.7.2 Data Analysis.....	76
3.7.2.1 Thematic and Content Analysis.....	76
3.7.2.2 Visual Analysis	76

3.7.2.3 Symbolic System Analysis	76
3.7.2.4 Quantitative Analysis Methods	76
3.7.3 Identification of Core Issues and Extraction of Cultural Knowledge	77
3.7.3.1 Identification of the Core Issues.....	77
3.7.3.2 Extraction of the Cultural Knowledge.....	78
(1) Tangible Wisdom: Cultural Encoding in Material Forms	78
(2) Intangible Wisdom: Beliefs, Customs, and Cultural Logic.....	87
3.7.4 Design and Validation.....	89
3.8 Summary.....	90
CHAPTER 4 RESEARCH RESULT	90
4.1 Findings	91
4.1.1 Outputs Related to Research Objective 1.....	91
4.1.2 Outputs Related to Research Objective 2.....	91
4.1.3 Outputs Related to Research Objective 3	91
4.2 Design Concept.....	92
4.2.1 Key Insights.....	92
4.2.2 Design Principles.....	93
4.2.3 Design Objectives.....	94
4.3 Problem solving Demonstration 1 and Evaluate	95
4.3.1 Development of the Educational Prototype.....	95
4.3.1.1 Field Studies Stage	96
4.3.1.2 Workshops Stage	96
4.3.1.3 Course Prototype Design.....	102
4.3.1.4 Application of the Curriculum System.....	116
4.3.2 Evaluation 1: Expert Review.....	118
4.3.2.1 Review Procedure.....	118
4.3.2.2 Expert Feedback and Material Revision	118
4.3.2.3 Review Results	119

4.3.3 Evaluation 2: Pilot Teaching in Yi Community.....	119
4.3.3.1 Overview of the Pilot Teaching.....	119
4.3.3.2 Data Collection.....	120
4.3.3.3 Data Analysis.....	121
4.3.3.4 Results	123
4.4 Development of Demonstration and evaluate.....	123
4.4.1 Evaluation 3: Embroidery Experience Activity.....	123
4.4.1.1 Overview of the Embroidery Experience Activity	123
4.4.1.2 Data Collection.....	125
4.4.1.3 Data Analysis.....	126
4.4.1.4 Results	127
4.4.2 Evaluation 4: Pilot Teaching in the University.....	128
4.4.2.1 Pilot Teaching Overview	128
4.4.2.2 Data Collection.....	129
4.4.2.3 Data Analysis.....	129
4.4.2.4 Results	131
4.4.3 Design Iteration	132
4.4.4 Summary	132
CHAPTER 5 CONCLUSION AND DISCUSSION.....	134
5.1 Finding following with Research objectives.....	134
5.2 Total of research results and evaluates.....	135
5.2.1 Overview of Key Research Outcomes	135
5.2.2 Validation and Evaluation Methods.....	136
5.2.3 Evaluation of Research Outcomes	137
5.3 Research results and how to solve the research problem.....	138
5.3.1 Overview of Problem Identification and Corresponding Strategies	138
5.3.2 The Role of Participatory Design in Problem Solving.....	139
5.3.3 Mechanism Analysis and Effectiveness	140

5.4 Research results and its Social Impact.....	141
5.4.1 Social Impacts of the Research	141
5.4.2 Research Limitations	145
5.5 Suggestions	145
REFERENCES	148
VITA	152



LIST OF TABLES

	Page
Table 1 Comparative Overview of Participatory Design Models	54
Table 2 Yi Community Application of Teaching Materials	117
Table 3 University Application of Teaching Materials.....	117
Table 4 Scoring Table for Before–After Embroidery Experience	126
Table 5 Scoring Table for Before–After Pilot Teaching.....	130



LIST OF FIGURES

	Page
Figure 1 Location of Chuxiong in Yunnan, China	1
Figure 2 Some of Chuxiong Yi ethnic costumes	2
Figure 3 Yi Costumes of Nasu, Naisu, and Mische Branches.....	2
Figure 4 Wuding Nasu Yi Costume (100 years old).....	9
Figure 5 Wuding County.....	10
Figure 6 Assumption framework	12
Figure 7 Mountainous Chuxiong Prefecture.....	17
Figure 8 Distribution & Population of 13 Yi Branches in Chuxiong	18
Figure 9 Yi ethnic Group Historical Timeline	21
Figure 10 Development of Yi Clothing in Chuxiong	22
Figure 11 Nasu Yi Clothing in Wuding (Qing Dynasty)	23
Figure 12 Nasu Yi Costumes by Age Group, Huanzhou Village (Wuding)	26
Figure 13 Nasu Yi Costume, Daxiyi Village (Wuding)	27
Figure 14 Nasu Yi Clothing, Maojie Town (Wuding).....	28
Figure 15 Luoluo Yi Costumes, Maojie Town (Wuding).....	29
Figure 16 Naluo Yi Costumes, Yichidan Village (Wuding).....	30
Figure 17 Sani Yi Costumes, Xialemei Village (Wuding)	31
Figure 18 Micha Yi Costume, Wuding.....	32
Figure 19 Nasu Rooster Hat, Wool Hat, Black Headscarf	33
Figure 20 “Tail Ornament” of Yi Clothing.....	34
Figure 21 Firegrass Shawl: Traditional Nasu Yi Symbol.....	35
Figure 22 Yi Embroidery Development Timeline	36
Figure 23 Nasu Yi Clothing: Black as Noble	38
Figure 24 Naisu Yi: Marked by Red Rhododendron	39
Figure 25 Nasu Yi: Clothing Colors by Life Stage.....	39
Figure 26 Rhododendron flowers in nature and the patterns in Yi costume	40

Figure 27 Rhododendron on Nasu Women's Hats	41
Figure 28 "Four Directions & Eight Tigers" Pattern	42
Figure 29 Lisu Clothing: Auspicious Bird Motif.....	44
Figure 30 Lisu clothing.....	45
Figure 31 Mapping the Conceptual Interface between CH and SD.....	48
Figure 32 A living heritage approach.....	49
Figure 33 Composition of Sign.....	51
Figure 34 Semiotic research methods.....	52
Figure 35 Participatory Design Process.....	55
Figure 36 Research Logic and Application.....	64
Figure 37 Stakeholder Analysis	69
Figure 38 Experts.....	72
Figure 39 research methods	74
Figure 40 Festive wear from Nasu branch	79
Figure 41 Festive wear from Naisu branch.....	80
Figure 42 Techniques Integrated in Wuding Yi Costumes.....	80
Figure 43 Ping Stitch Technique.....	81
Figure 44 Kou Stitch Technique	81
Figure 45 Tiao Stitch Technique.....	82
Figure 46 Tiebu Stitch Technique.....	82
Figure 47 Rhododendron Flower Patterns	82
Figure 48 Ram Horn Patterns	83
Figure 49 "寿"Character Patterns	83
Figure 50 Phoenix Flower Pattern	83
Figure 51 Peony Pattern.....	84
Figure 52 Human Dance Pattern.....	84
Figure 53 Four Directions Eight Tigers Pattern.....	85
Figure 54 Die jiao Pattern	85
Figure 55 Crab Pattern.....	85

Figure 56 Lian qing kou Pattern	86
Figure 57 Color of Women's Costumes in the Nasu and Naisu Branches	87
Figure 58 Design Concept	95
Figure 59 Design Participatory Design Activities and Mechanisms	96
Figure 60 Future Workshop Seminar.....	97
Figure 61 Cooperation Agreement Signed	97
Figure 62 The Wearing Experience Workshop	98
Figure 63 The Embroidery Experience Workshop	99
Figure 64 Lectures, Artifact Display and Discussion	100
Figure 65 Participant Insights	101
Figure 66 Focus Group Feedback Clusters	101
Figure 67 From Feedback to Curriculum Prototype Flow.....	102
Figure 68 Course 1 Yi Costume Art Appreciation	103
Figure 69 Chapter 1 Teaching Module Structure	103
Figure 70 The first pages of each section in Chapter 1.....	103
Figure 71 Chapter 2 Teaching Module Structure	104
Figure 72 The first pages of each section in Chapter 2.....	104
Figure 73 Chapter 3 Teaching Module Structure	105
Figure 74 The first pages of each section in Chapter 3.....	105
Figure 75 Chapter 4 Teaching Module Structure	106
Figure 76 The first pages of each section in Chapter 4.....	106
Figure 77 Chapter 5 Teaching Module Structure	107
Figure 78 The first pages of each section in Chapter 5.....	107
Figure 79 Course 2 Experience of Yi Embroidery Skills	108
Figure 80 Chapter 1 Teaching Module Structure	109
Figure 81 The first pages of each section in Chapter 1.....	109
Figure 82 Chapter 2 Teaching Module Structure	109
Figure 83 The first pages of each section in Chapter 2.....	110
Figure 84 The first pages of each section in Chapter 3.....	110

Figure 85 Chapter 3Teaching Module Structure	111
Figure 86 Embroidery Process and Tool Support.....	111
Figure 87 Embroidery Toolkit 1—Medium Level.....	112
Figure 88 Embroidery Toolkit 2—Beginner Level	113
Figure 89 Course Modules and Digital Handouts.....	114
Figure 90 Course Modules and Digital Handouts.....	115
Figure 91 Course Modules and Digital Handouts.....	116
Figure 92 Curriculum Functions and Stakeholder Support	118
Figure 93 University Educators Conduct Pilot Teaching	120
Figure 94 Focus Groups & Interviews After Pilot Teaching.....	121
Figure 95 Thematic Analysis of Feedback	121
Figure 96 Teaching Effectiveness Evaluation	123
Figure 97 Visitors Embroidery Experience	125
Figure 98 Before–After Changes from Embroidery Experience	127
Figure 99 Pilot Teaching in the University.....	129
Figure 100 Before-After Changes from Pilot Teaching	132
Figure 101 Participatory Design Model of the Yi Costume Education Prototype ...	134
Figure 102 Evaluation Methods.....	137
Figure 103 Model of Cultural Sustainability for Ethnic Traditional Culture	144

CHAPTER 1

INTRODUCTION

1.1 Significant of the Problems

1.1.1 Background

Chuxiong Yi Autonomous Prefecture is located in central Yunnan Province, China. It is one of the two Yi autonomous prefectures in China and comprises nine counties and one city, with a Yi population of 787,912 people (Chuxiong Yi Autonomous Prefecture Government, n.d.). Wuding County is situated in the eastern part of Chuxiong Yi Autonomous Prefecture, covering an area of 3,322 square kilometers. It is a region with a diverse ethnic population (Wuding County People's Government, 2022). According to data from 2021, the Yi population in Wuding County is 90,371 people ((Chuxiong Prefecture Statistics Bureau, 2024). (Figure 1)



Figure 1 Location of Chuxiong in Yunnan, China

Source: <https://www.tsemrinpoche.com/l/cn/dorje-shugden/two-holy-places-in-yunnan-china-chinese.html>; <http://www.onegreen.net/maps/HTML/62739.html>

The Yi people are one of the oldest ethnic groups in Chuxiong, with a cultural heritage spanning thousands of years. Yi clothing is a significant part of Yi traditional culture and serves as a cultural carrier, akin to a silent history book that records the ancient history and culture of the Yi people (Zhang & Peng, 2022). It is regarded as a microcosm and encyclopedia of Chuxiong Yi culture (Shao, 2016). Chuxiong is a primary settlement area for the central dialect group of the Yi language and a confluence of several dialects. Historically, Chuxiong was a region of frequent migration and cultural exchange for the Yi people, resulting in a rich and diverse array of Yi clothing styles (Yang & Qu, 1999). In 2014, Yi clothing was listed in the fourth batch of China's National Intangible Cultural Heritage Representative Projects.

The variety of clothing types and the intricate embroidery patterns are the most notable features of Yi clothing. Historically, Yi clothing varied significantly based on different clans, regions, ages, and occasions. There are also special types of clothing, such as wedding garments, funeral attire, bimo (shaman) robes, and tusi (chieftain)

costumes. The numerous embroidery patterns on the clothing not only serve decorative purposes but also record the history, cultural customs, religious beliefs, and philosophical thoughts of the Yi people (Fan, 2004). The creation and evolution of these patterns are influenced by practicality, religion, magic, mythology, aesthetics, totems, and external cultural impacts (Ba, 2013). (Figure 2)

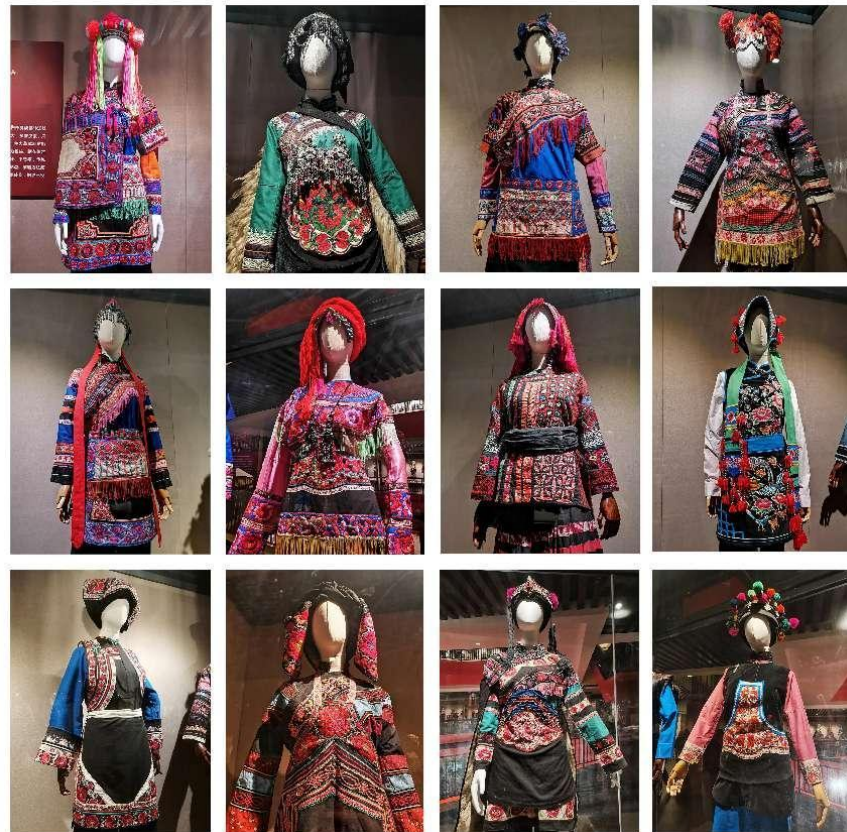


Figure 2 Some of Chuxiong Yi ethnic costumes

Source: Collected by Chuxiong Museum, photos taken by the author, 2023

As a county in Chuxiong Prefecture, Wuding County's Yi clothing is a significant part of the Yi clothing culture in Chuxiong. Wuding's Yi clothing culture integrates both tangible and intangible cultural elements, combining the arts of painting, paper cutting, and embroidery in its craftsmanship. In terms of cultural connotations, it reflects the history, traditional lifestyle, religious beliefs, and values of the Yi people, serving as a symbol of Yi culture. (Figure 3)



Figure 3 Yi Costumes of Nasu, Naisu, and Mieche Branches

Source: Shao , 2016

Wuding County's history is deeply rooted in the influences of several important historical periods, including the ancient Dian Kingdom culture from the Warring States to the Qin Dynasty, the Nanzhao culture of the Tang Dynasty, the flourishing Luowu culture from the Song Dynasty that thrived for over six hundred years, the Tusi culture from the Yuan to Ming Dynasties, and Han culture. These interwoven and integrated cultures have left their mark on Yi clothing, shaping a unique and distinctive clothing culture (Wuding County People's Government, 2022). Wuding is located at a key transportation route between Yunnan and Sichuan. Its unique geographical location and historical background, combined with the presence of six Yi sub-groups (Nasu, Naisu, Naluo, Luoluo, Miche, and Sani) within Wuding (A, 2017), have created a unique landscape of Wuding Yi clothing culture. This culture not only shares commonalities with the Yi clothing cultures of other regions in Chuxiong but also exhibits its own distinct characteristics.

1.1.2 The Research Problems

Similar to common phenomena, traditional Yi clothing culture has been impacted by modernization and urbanization. Although the basic characteristics of traditional Yi clothing in Wuding's mountainous regions have been preserved, the types of clothing have significantly decreased, and the craftsmanship, cultural connotations, and cultural identity have gradually been lost. Some clothing patterns are even on the verge of extinction and require increased attention and effective protection (Wang, 2016).

Since the Chinese government launched the intangible cultural heritage protection initiative in 2003, significant opportunities have arisen for the protection of Yi clothing culture. Starting from 2012, the Chuxiong Prefecture government further promoted the development of the Yi embroidery industry, bringing unprecedented attention to Yi embroidery and clothing culture.

Despite the significant efforts made towards the protection and revival of Chuxiong Yi clothing culture, notable achievements have been realized. For example, the Yi people of Chuxiong have rekindled their love for traditional clothing and actively wear traditional ethnic attire during festivals, celebrations, gatherings, and weddings. Additionally, the Chuxiong Prefecture government has supported and promoted the establishment and development of Yi embroidery and clothing enterprises, aiming to help Yi communities develop and utilize traditional clothing cultural resources, thus promoting the modern transmission and development of Yi clothing culture. As of December 2021, the annual output value of this industry in the prefecture has reached 200 million RMB (Li, 2022).

However, the modern development of Yi costume culture has been overly focused on economic output, with profits primarily benefiting investors, while insufficient attention has been paid to the inheritance of cultural wisdom. This has also resulted in the current development model failing to achieve shared benefits for the community.

(1) Neglect of Cultural Wisdom Transmission

In the pursuit of economic benefits, the transmission of traditional culture has not received enough attention. Yi clothing, as part of the cultural heritage, embodies the traditional wisdom of the Yi people, but its transmission has been marginalized in

modern development. With changing lifestyles, many young Yi people leave their hometowns to study after graduating from primary school, and about 50% of women under the age of 40 leave for work, resulting in a generational gap in the transmission of Yi clothing culture. The younger generation lacks understanding and interest in traditional clothing and its cultural significance.

(2) Crisis of Cultural Identity

The younger generation of Yi people is gradually distancing themselves from their own culture, leading to a weakening of cultural identity. Traditional clothing is not just attire but a cultural symbol that represents the history, beliefs, and way of life of the Yi people. As the symbolic meaning of these garments fades, cultural identity is also gradually being lost. In summary, the goals and methods for the conservation and transmission of Yi costume culture in Wuding County require new understanding, positioning, and approaches.

(3) Weakened sustainability of community culture

Despite the government's emphasis on protecting Yi clothing culture, the number of people with a comprehensive understanding of the cultural wisdom and mastery of the craftsmanship is decreasing. The number of government-recognized inheritors is limited, and they are aging rapidly. As of January 2024, of the original six Yi clothing culture inheritors in Wuding County, three have been unable to continue their work due to age or health issues, leaving only three with very limited transmission capacity.

The sustainable development of Yi clothing culture requires integration with modern lifestyles, promoting the innovation and transmission of traditional culture. The community should establish effective cultural education mechanisms, and through various cultural activities and social participation, enhance members' cultural identity, making clothing culture a part of community life.

In conclusion, the goals and methods for the conservation and transmission of Yi clothing culture in Wuding County require new understanding, positioning, and approaches.

1.1.3 Research Status

Regarding the research on Wuding Yi clothing culture, the researchers found only four related articles on CNKI, a Chinese authoritative academic website. Jin Yongfeng (2015) studied the Yi clothing depicted in local chronicles and Yi aristocratic stone carvings from the Qing Dynasty using the methods of iconography, history, local chronicles, and artifact studies. He analyzed and described the clothing characteristics of the Nasuo, Naluo, and Naisu subgroups of the Yi people in Wuding during the Qing Dynasty.

Guo Junjie and Zhao Ming (2021) focused their research on the clothing styles of the Nasuo subgroup in Wuding County. Through field research and literature review, they analyzed and compared the characteristics and structural changes of traditional and modern women's clothing of the Nasuo subgroup. They explored the historical changes in the clothing of the Nasuo subgroup in Wuding County and drew style and structural diagrams of traditional and modern Nasuo women's clothing based on measurements of physical objects.

Two other studies focused on individual elements of Wuding Yi clothing: one by

Liu Leyao and Wang Yi (2023) on the cultural connotations of the rooster hat in Nasuo clothing, and another on the "Four Tigers Pattern" embroidery in Wuding Yi clothing. These two studies analyzed the craftsmanship, cultural connotations, and aesthetic features of these two clothing elements.

The aforementioned studies are all qualitative and adopted a narrative approach. They primarily explored specific subgroups, historical periods, and elements of Wuding Yi clothing, summarizing and narrating the investigation results.

From a broader perspective, research on Chinese Yi clothing culture has been ongoing for nearly 40 years, yielding significant achievements in the classification of subgroups, forms, cultural connotations, aesthetics, and design development of clothing (Zhang & Hua, 2022). Existing research can be categorized into three main types:

The first type involves foundational theoretical research on the classification of Yi clothing subgroups, forms, historical evolution, cultural connotations, and clothing aesthetics. For instance, the illustrated book "Chinese Yi Clothing" (Zhong & Zhou, 2006) classifies Yi clothing into six major types based on region and subgroup distribution: Liangshan, Chuxiong, Honghe, Southeast Yunnan, Western Yunnan, and Wumeng Mountain. This classification method has laid the foundation for subsequent studies on Yi clothing styles. Yang Fuwang and Qu Kunyun (1999) studied Yi clothing as a whole, proposing that the cultural connotations of Yi clothing reflect concepts such as family hierarchy, cultural legends, and religious customs. Hao Yunhua (2008) suggested that Yi clothing is a combination of Yi aesthetics and cultural utilitarianism, as well as an expression of emotions and cultural implications.

The second type focuses on the design and development of Yi clothing culture. For example, Li Zhengzhou (2015) proposed development strategies for Chuxiong Yi clothing culture, based on contemporary design contexts and aesthetic trends. He suggested reconstructing patterns, colors, and shapes using modern composition theories and applying these strategies to modern clothing design. Ye Julan (2016) analyzed the artistic characteristics of Chuxiong Yi clothing patterns and proposed methods for applying these patterns to modern clothing and packaging design, thereby creating unique products that promote Chuxiong Yi clothing culture. Li Dichen and Wei Qing (2013) suggested reasonably incorporating traditional Yi clothing characteristics into packaging design to enhance the artistic value and cultural connotations of featured products. Zhang Li (2020) analyzed the cultural genes of Chuxiong clothing patterns from multiple dimensions such as elements, shapes, composition, and meanings, and explored their transformation in jewelry design in line with contemporary urban aesthetics.

The third type of research focuses on the protection and transmission of Yi clothing culture. For instance, Zhang Xiaoqiong and Peng Ximei (2022) proposed paths for protecting and transmitting Chuxiong Yi clothing: increasing the training of clothing culture inheritors, fostering government-business cooperation, using Yi embroidery development projects for poverty alleviation, promoting the marketization of Yi clothing, involving multiple stakeholders, and collecting and protecting exquisite Yi embroidered clothing. Li Zhengzhou's (2014) research, based on field investigations, identified ecological deficiencies in the transmission process of Yi clothing and analyzed the necessity of digital protection. He argued that digital protection helps serve the public in related fields and more effectively collects,

preserves, and disseminates Yi clothing cultural resources, proposing approaches and methods for digital protection.

A review of the literature reveals that, despite the past decade being a critical period for the protection of Yi clothing culture and the development of the Yi embroidery industry in Chuxiong Prefecture, research on Yi clothing culture still lacks systematic and applied aspects. After extensively reviewing related literature, the researchers have identified the following gaps:

(1) Gaps in content: There is a geographical imbalance in the research on Chinese Yi clothing culture, with richer studies in Sichuan's Liangshan area, while research in Yunnan is relatively scattered and lacks systematic approach (Zhang & Hua, 2022). Specifically, in Wuding County of Chuxiong Prefecture, there is insufficient research on the characteristics, connotations, and current state of its clothing culture, especially regarding the impact of Wuding County's unique historical background on Yi clothing culture. Furthermore, no studies have been found on the innovative inheritance of Wuding Yi costume wisdom.

(2) Methodological Gap: Existing research primarily focuses on an ethnographic perspective with a qualitative approach, contributing mainly to foundational theoretical knowledge. Even studies that discuss the protection and development of Yi clothing culture tend to focus on the application of clothing elements in specific types of design, lacking exploratory applied research based on participatory action research methodologies.

(3) Gap Related to Target Research Population: Most existing studies adopt the perspective of "conservation professionals," overlooking the role of the "core community" in cultural preservation and transmission, and failing to consider the perspectives of other social groups.

This research is based on the theory of participatory action research and adopts participatory design methods to explore alternative approaches for the innovative inheritance of Wuding Yi costume culture, aiming to ensure the living transmission of the culture.

1.1.4 Necessity of the Research

Based on the research problems, current research status, and identified literature gaps, the necessity of researching the alternative strategies for the inheritance of Wuding Yi clothing culture is summarized as follows:

(1) Inheriting Yi Clothing Culture as a Path to the Sustainability of Yi Community Culture

Sustainable development is the dominant development model of our time. Sustainability is currently seen as a delicate balance between the economic, environmental, and social health of a community, nation, or the entire planet (Haenn & Wilk, 2006). Numerous recent actions in the field of heritage conservation indicate that linking and integrating cultural heritage with sustainable development is a fundamental need and an overall trend (LouLanski, 2007).

Wuding Yi traditional clothing culture is a representative cultural landmark and heritage of the Yi people. Cultural heritage is a multivalent resource. From a systematic perspective, cultural heritage has a unique "bonding value" in the sustainability system, meaning that over time, cultural heritage allows an individual or system to maintain its identity, unique characteristics, autonomy, and self-regulation, thus maintaining a stable relationship between the parts of the system and the whole.

In terms of development, cultural heritage is a "development asset" that can be used to achieve a wide range of economic, environmental, social, and community development goals (LouLanski, 2007).

Therefore, researching alternative strategies for the revival of Wuding Yi clothing culture aims to explore how to maintain its multivalent attributes to achieve the sustainable development of the Wuding Yi community.

(2) "A Living Heritage Approach" as a Strategy for the Sustainability of Yi Clothing Culture

In the sustainability triangle model, the cultural dimension is often overlooked, thus the concept of cultural sustainability has been proposed (Meireis & Rippl, 2019). A living heritage approach can be seen as an example of strategic innovation in the field of heritage conservation: it proposes a different concept of heritage conservation (maintaining the connection between the community and cultural heritage), points out that different community groups are responsible for defining and protecting heritage (community-based), and introduces a different way of heritage conservation (empowering the community and placing heritage protection in continuity) (Poulios, 2014).

The researchers will adopt the methodological framework of Participatory Action Research (PAR) and use Mixed Methods Research as the research approach. By combining qualitative and quantitative research methods, they will explore sustainable development strategies for local community clothing culture through participatory design, contributing new literature to the research methods of this topic.

(3) Significant Role of Community and Social Participation in Yi Costume Inheritance

In living cultural heritage conservation strategies, community participation becomes particularly important. Ecological, economic, and social issues of sustainability can only be understood in the cultural context. Cultural sustainability focuses on the importance of cultural diversity, indigenous cultures, local characteristics, and the role of creativity in community development (Meireis & Rippl, 2019). Sustainability also involves the immaterial aspects of life—intuition, emotion, creativity, and spirituality. Therefore, the sustainability of the culture is not only an issue within the Yi community but also a broader societal concern.

This research will employ participatory design methods to explore approaches for the inheritance of Yi costume culture, aiming to preserve local indigenous culture, regional characteristics, and cultural diversity. This not only helps maintain the continuity of cultural heritage but also promotes economic, ecological, and social sustainability. By involving the local community and other social groups in the research process, it supports the cultural sustainability of the Yi community.

1.1.5 Importance of the Research to Participants

This research will be based on the theoretical framework of Participatory Action Research (PAR) to study the inheritance strategies for Wuding Yi clothing culture. PAR is a scholar-activist research method that brings together community members, activists, and scholars to co-create knowledge and drive social change (Kendon, Pain, & Kesby, 2007). Expert-led heritage conservation practices have evolved; academia, together with local communities, owners, government, business entities, developers, tourists, and other stakeholders, is now seen as one of the heritage stakeholders.

Through collaborative efforts, significant contributions can be made (LouLanski, 2007).

The stakeholders in this study include the local Yi community, clothing culture inheritors, government officials, experts, students, artisans who make and sell clothing, the local Yi embroidery association, and visitors.

Among them, the "community members" in the study include the local Yi people, clothing culture inheritors, artisans, and the local Yi embroidery association. A living heritage approach is a community-based cultural heritage conservation method, where the core stakeholders are the "core community." They create and maintain their clothing culture, which is a vital part of their contemporary identity, pride, self-esteem, and well-being (Poulios, 2014). Therefore, they should play a major role in the preservation and transmission of costume culture. They not only participate in the research process but are also actively empowered to make significant contributions to the transmission and revival of clothing culture.

Secondly, the "experts" in this study include Yi culture specialists and relevant university scholars, whose role is to provide academic support and guidance to the core community. In addition, local government officials and the Yi Embroidery Association primarily coordinate the participation of various stakeholders and provide support for the implementation of the programs.

Additionally, the "visitors" in the study, as experiencers and promoters of Yi clothing culture, through participatory design-related activities, will enhance their understanding, recognition, and dissemination of Yi clothing culture.

1.2 Objectives of the Research

(1) To study the tangible wisdom of traditional Yi costume in Wuding, including its forms, craftsmanship, and techniques, as well as the intangible wisdom such as its history, customs, beliefs, and values.

(2) To analyze the cultural value of Wuding Yi costume, the factors contributing to its decline, and the current status of its inheritance, as well as the role of community and societal participation in ensuring the sustainability of this cultural heritage."

(3) To apply participatory design to develop prototypes—including participatory activities, the Two-way Education Program, and supporting educational materials—to propose alternative approaches for promoting the inheritance of Yi costume cultural wisdom.

1.3 Hypothesis

(1) If community and university participation contributes to establishing new cultural transmission channels, that will enable a modern model for the inheritance of Yi costume culture.

(2) If Yi costume wisdom is integrated into educational programs, that will create new and sustainable pathways for cultural inheritance.

1.4 Scope of the Research

This research defines its scope in terms of content, population, area, and time, providing a structured framework for investigating the sustainability and living inheritance of Yi costume culture in Wuding County.

1.4.1 Content Scope



Figure 4 Wuding Nasu Yi Costume (100 years old)
Source: Collected by Zhang Xuefang; photos taken by the author

This research focuses on the Yi costume culture of Wuding County, exploring its tangible and intangible wisdom as well as modes of transmission. Special attention is given to the challenges and opportunities related to the sustainability of this culture. The research emphasizes female costumes, which retain rich ethnic characteristics and intricate designs (Bai, 2014), aiming to explore innovative approaches for their modern, living inheritance.(Figure 4)

1.4.2 Population Scope

Wuding County has a total Yi population of approximately 90,371(Chuxiong Prefecture Statistics Bureau, 2024), including three officially recognized cultural inheritors and 407 local officials. The main stakeholders involved in this study include Yi community members, recognized cultural inheritors, costume craftsmen, government officials, 11 experts (cultural and educational), 50 university students engaged in design and cultural research, and visitors. By interacting with these groups, the research explores community-based approaches for the living inheritance of Yi costume culture.

1.4.3 Area Based Scope

This research focuses on Wuding County in Chuxiong Yi Autonomous Prefecture, Yunnan Province, China, as the research area. Wuding County, located in the north-central part of Yunnan Province, covers a total area of 3,322 km², with mountainous terrain accounting for 97% of its land area (Wuding County People's

Government, 2025). The field investigation is confined to four representative Yi villages within the county, selected based on their cultural integrity and continuity in costume inheritance: Huanzhou Village (21.67 km²), Maojie Village (37.88 km²), Bailu Village (24.62 km²), and Fawo Village (32.8 km²). The selection of these villages was informed by a combination of literature review, expert consultation, and preliminary field surveys to ensure the typicality and representativeness of the research sites. (Figure5)



Figure 5 Wuding County

Source: <http://www.ynwd.gov.cn/info/1005/17288.htm>

1.4.4 Time Scope

The research focuses on the evolution of Yi costume culture over the past century (1919–present), a period defined in Chinese historiography as the “modern” era. This era represents a critical stage in the formation and transformation of Yi costume in Chuxiong, as well as a period of profound cultural and aesthetic change. Particularly since the 1980s, the accelerated influence of external cultures and rapid socio-economic development have led to significant changes in the styles, materials, and contexts of Yi costumes (Zhang & Hua, 2022). However, systematic research on the evolution of Yi costume during this modern period remains limited. At the same time, existing literature, visual records, and material artifacts, which mainly focus on the past century, provide an important foundation for scholarly research.

The study spans from July 2022 to December 2025, covering four main stages: field investigation, participatory design, pilot implementation, and evaluation.

1.5 Assumption framework

The research is built upon two core variables: the independent variable—Wuding Yi costume culture—and the dependent variable—participatory design. The relationship between these variables forms the logical foundation of the research: the characteristics of Yi costume culture provide the content and context for participatory

design, while participatory design serves as an activating mechanism that facilitates the revitalization, reinterpretation, and sustainable development of this culture.

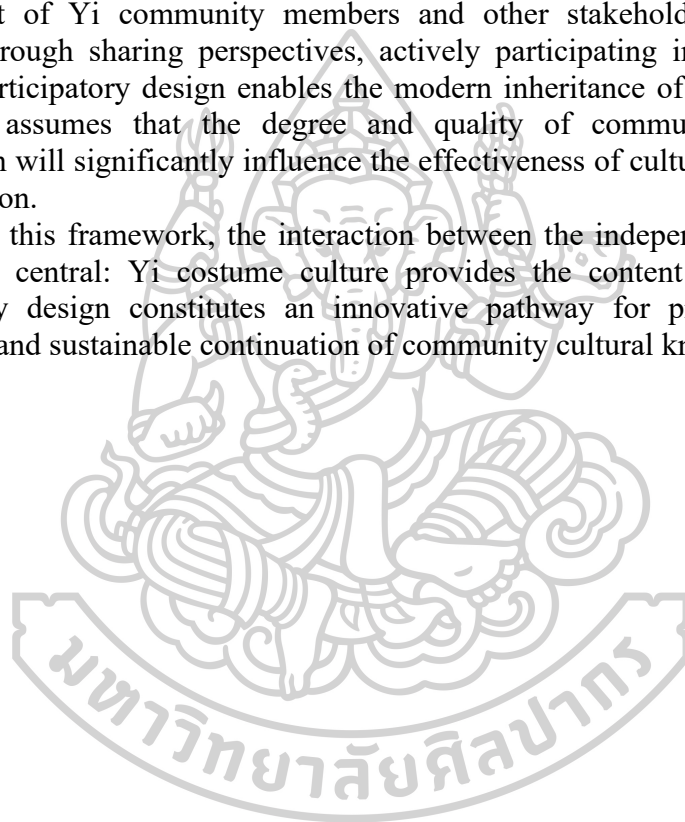
(1) Independent Variable: Wuding Yi Costume Culture

As the independent variable, Wuding Yi costume culture encompasses both tangible wisdom (e.g., forms, craftsmanship, and techniques) and intangible wisdom (e.g., history, customs, beliefs, and values). This variable represents the cultural heritage and collective knowledge of the Yi community. The study assumes that Yi costume culture provides the foundational content and inspiration for design innovations and guides the participatory design process.

(2) Dependent Variable: Participatory Design

Participatory design, as the dependent variable, refers to the collaborative involvement of Yi community members and other stakeholders in the research process. Through sharing perspectives, actively participating in activities, and co-creating, participatory design enables the modern inheritance of Yi costume culture. The study assumes that the degree and quality of community and university participation will significantly influence the effectiveness of cultural transmission and modernization.

Within this framework, the interaction between the independent and dependent variables is central: Yi costume culture provides the content and context, while participatory design constitutes an innovative pathway for promoting the living inheritance and sustainable continuation of community cultural knowledge. (Figure6)



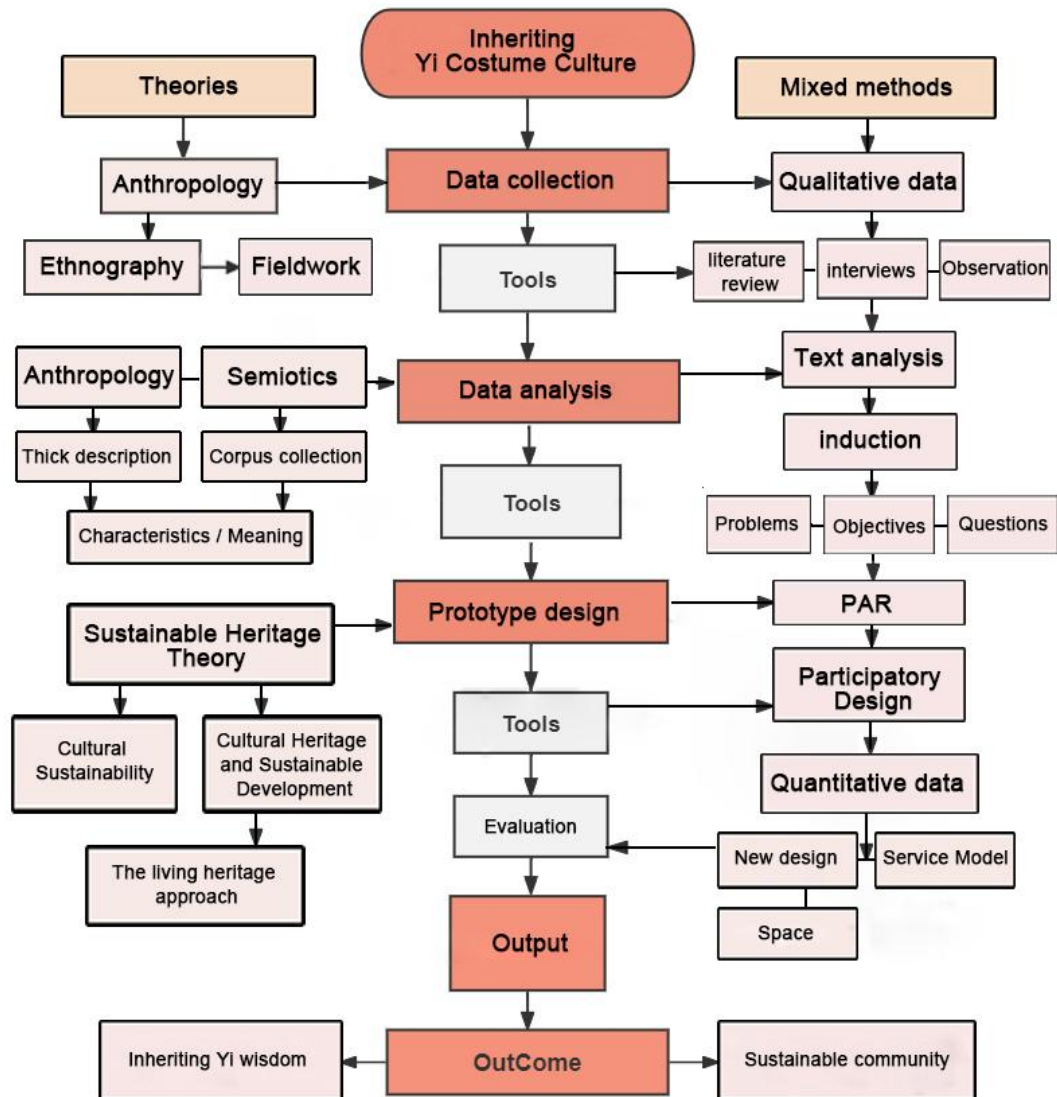


Figure 6 Assumption framework

Source: by the author

1.6 Definition of Terms

(1) Chuxiong Yi Clothing Culture: The Yi clothing of Chuxiong is not only an essential component of Yi culture but also a microcosm and encyclopedia of this culture (Shao, 2016). Yi clothing has a history spanning thousands of years and is unparalleled in variety among single ethnic groups worldwide. These garments are closely tied to the Yi people's history, religion, marriage customs, funerary practices, agriculture, and festival celebrations (Zhong & Zhou, 2006).

(2) Participatory Design: Participatory design is a research approach characterized by the emphasis on user participation. Its methodology originates from participatory action research, incorporating various research methods such as ethnographic observation, interviews, and artifact analysis to construct and interpret research outcomes co-created by designer-researchers and participants (Spinuzzi,

2005). Participatory design is not only a method for creating technologies that meet user needs but also a way to change practices and enable people to voice their opinions in technological development (Iversen & Dindler, 2014).

(3) Cultural Heritage: From a long-term perspective, cultural heritage is defined as cultural capital, existing in both tangible forms (such as buildings, sites, artifacts, and artworks) and intangible forms (such as ideas, practices, beliefs, values, and artistic forms like music and literature). Cultural heritage is a resource of multivalent value, serving as cultural, political, and economic resources. In the development field, cultural heritage is further defined as a "development asset," which has been and can be used to achieve a wide range of economic, environmental, social, and community development goals (LouLanski, 2007).

(4) Cultural Sustainability: Refers to the ability of culture to endure in the present and future through the protection, transmission, and innovation of cultural practices in the context of globalization. Cultural sustainability emphasizes cultural diversity, community cultural identity, the continuity of traditions, and the culture's ability to renew itself, ensuring that culture is not eroded by globalization and modernization. Cultural sustainability focuses on the importance of cultural diversity, locality, and creativity for community development, while also considering the role of culture in sustainable development (Meireis & Rippl, 2019). The core of cultural sustainability lies in balancing traditional and modern needs, protecting and transmitting cultural heritage, and making it a key component of community and societal development (LouLanski, 2007).

(5) Two-way Education Program: Refers to an educational framework developed through participatory design to promote the sustainable inheritance of Wuding Yi costume culture. The program is based on collaborative teaching resources and teams, integrating traditional cultural knowledge with contemporary design and educational concepts to establish a two-way learning mechanism between the university and the community. It consists of two parts: the Yi Cultural Training Plan, in which university educators collaborate with Yi artisans and official inheritors to conduct community-based training, and the University Education Plan, which offers elective courses that enable the dissemination and reinterpretation of Yi culture within academia. Through the interaction of these two educational contexts, the program forms a co-creative and collaborative model that supports the continuation and innovation of traditional knowledge in the contemporary context.

1.7 Expected Output - Outcome

The expected outcomes of the research are primarily reflected in the design art-related outputs of participatory design and cultural heritage practice, aiming to promote the living inheritance of Wuding Yi costume culture.

1.7.1 Expected Output

(1) Education Program

Establish a cross-stakeholder learning model between Yi communities and universities, enabling joint learning and co-creation among community members, university experts, and students. This educational model can be validated in experimental settings, providing a feasibility basis for future scaling.

(2) Educational Materials and Curriculum Design

Develop systematic teaching resources for Yi communities, universities, and

cultural enthusiasts, including course syllabi, textbooks, and operational guides. These outputs can be applied and refined in experimental and pilot teaching, supporting knowledge acquisition and sharing.

(3) Participatory Service Design Model

Based on a co-created cultural service model between universities and communities, develop actionable service prototypes for cultural heritage activities, community education, and experiential learning. This model can be further validated and adjusted during pilot implementation, offering sustainable and innovative pathways for cultural inheritance.

Overall, the research not only produces educational and design resources but also provides operational design prototypes and service models, delivering sustainable and scalable alternatives for the modern living inheritance of Wuding Yi costume culture.

1.7.2 Expected Outcome

The research, through the implementation of participatory design and the two-way education program, is expected to generate impacts across social, environmental, and governance dimensions:

(1) Social Dimension

The research aims to achieve the sustainable inheritance and living continuity of Yi costume culture. Through the two-way education program, university and community members collaboratively design courses and educational materials, integrating cultural knowledge, traditional craftsmanship, art design, and modern educational methods. Participants gain in-depth understanding of the history, craftsmanship, and values of Yi costumes during co-creation, enhancing cultural identity. Additionally, the educational resources and curriculum design provide learning opportunities for broader social groups, fostering a cross-stakeholder, sustainable model of cultural transmission.

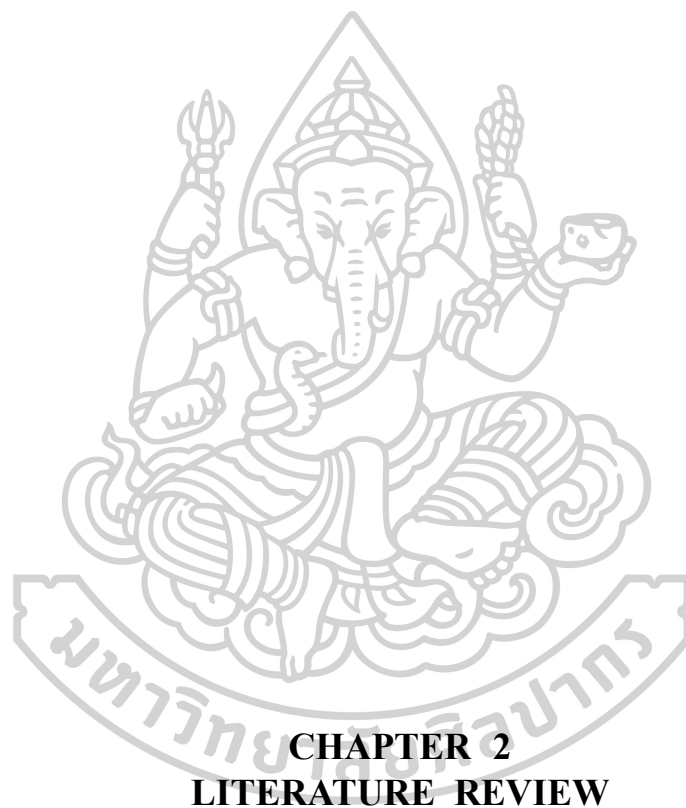
(2) Environmental Dimension

At the environmental level, the research promotes harmony between humans and nature by preserving the core value of respect for nature embedded in Yi traditional culture. The design integrates the Yi belief in reverence for nature with ecological sustainability principles, embedding the concept of human–nature harmony into the educational program. This approach ensures that cultural transmission and ecological protection advance together, enhancing the environmental benefits of cultural practices.

(3) Governance Dimension

In terms of governance, the research empowers the community through participatory design, enhancing its capacity for cultural inheritance and autonomous development. By establishing long-term collaborative networks between the community and universities, the research promotes co-creation and shared governance in education. Community members acquire knowledge and skills through participation in practice and courses, strengthening cultural management capabilities and achieving dual empowerment in cultural preservation and community development.

Overall, through participatory design and the two-way education program, the research is expected to produce positive impacts across social, environmental, and governance dimensions.



2.1 Overview of Area and History

The Yi costume culture of Wuding is characterized by a long history and vibrant diversity. It shares commonalities with Yi costume cultures in other regions while exhibiting unique features shaped by Wuding's historical, geographical, and social context. However, in the context of rapid urbanization and modernization, the continuity of Wuding Yi costume culture faces significant challenges.

To explore innovative and sustainable pathways for the living inheritance of this cultural heritage in the contemporary era, this chapter conducts a comprehensive literature review. By analyzing existing research and theoretical frameworks, the chapter aims to clarify the current state of scholarship, identify research gaps, and establish a solid foundation for subsequent empirical and design studies in this research.

This chapter is organized into six sections: (1) Overview of Area and History, (2) Research of Related Literature, (3) Related Principles and Theories, (4) Case Studies, (5) Pilot Research, and (6) Summary. Together, these sections provide a systematic basis for understanding the context, theoretical underpinnings, and practical references that inform the research.

2.1.1 Overview of Area

2.1.1.1 Living Environment of the Yi People

Wuding County is located in the north-central part of Yunnan Province and the eastern part of the Chuxiong Yi Autonomous Prefecture, with a total land area of 3,322 square kilometers (Wuding County People's Government, 2025). Chuxiong Yi Autonomous Prefecture is located in the central area of the Yi-inhabited regions across Yunnan, Sichuan, and Guizhou provinces, covering a total area of 28,400 square kilometers. It is the most densely populated Yi area in China. Wuding County, one of the nine counties under the jurisdiction of Chuxiong, is located in the northeastern part of the prefecture.

Chuxiong Prefecture is situated in central Yunnan Province and has a complex terrain. Major mountain ranges include the Wumeng Mountains, Ailao Mountains, and Baicaoling Mountains. The Jinsha River and Yuan River flow through this region. The Yi people in Chuxiong mainly reside in mountainous and semi-mountainous areas, with the Yi people in Wuding and Yuanmou counties primarily concentrated in the mountainous regions south of the Jinsha River (Yang, 2017). (Figure 7)

The terrain of Chuxiong Prefecture slopes from the northwest to the southeast and is primarily mountainous, with altitudes generally ranging from 1,000 to 1,900 meters. Mountains cover over 90% of the prefecture's total area. This terrain creates a saddle-shaped topography, with higher elevations at the northern and southern ends and relatively lower elevations in the central region. Consequently, the population density is highest in the central areas and relatively lower at the northern and southern ends. Specifically, apart from Chuxiong City and Lufeng County, Wuding County also has a relatively high population density (Cui, 2012).

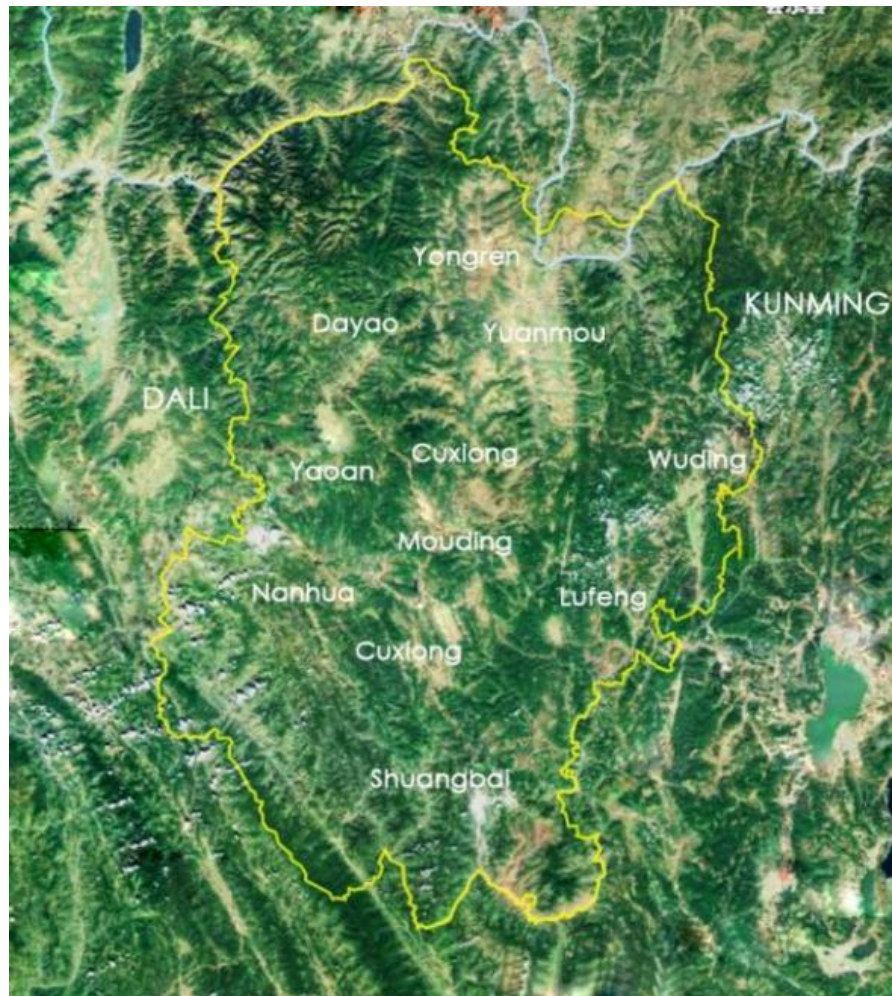


Figure 7 Mountainous Chuxiong Prefecture

Source: <https://ft.wocha.cn/ditu/?dx=481>

Wuding County is predominantly mountainous, with mountainous areas accounting for 97% of its total area. The elevation ranges from a maximum of 2,956 meters to a minimum of 862 meters (Wuding County People's Government, 2025). Most of the Yi people live in mountainous and semi-mountainous areas, except for the smaller populations of the Luoluo, Micie, and Sani branches, who reside in the basins.

Due to the Yi people's primary residence in mountainous areas, the climate is characterized by a "vertical climate" where there can be four seasons on one mountain and different weather over ten miles. Combined with the remote and inaccessible nature of the mountainous regions, this geographical isolation provides a natural foundation for the diversity of Yi culture and traditional clothing.

2.1.1.2 Branches of the Yi People

Due to different geographical environments, natural conditions, regional dialects, and uneven social development, various branches and names of the Yi people have formed (Bai, 2014).

Yang Fuwang and Yang Yang (2016) studied and elaborated on the historical evolution of the Yi branches in Chuxiong in their article "The Origins and Development of Yi Culture in Chuxiong": During the Nanzhao period, the Chuxiong

area was the heartland of the Nanzhao Kingdom. The rulers of Nanzhao divided and relocated some ethnic groups to weaken their power. This long-term policy resulted in continuous large-scale migrations of the Yi people, migrating as entire tribes or groups from specific regions, forming new subgroups in new areas. This laid the foundation for the formation of later Yi branches, such as the close relationship between the Micie people of present-day Wuding County and the Yi people of Weishan in Dali.

After the Yuan Dynasty, the internal sense of identity and cohesion among the Yi people strengthened, and their economy and culture rapidly developed. Their distribution area expanded, making the Yi the most populous ethnic minority in Yunnan. At the same time, due to geographical isolation and historical reasons, the Yi people in Chuxiong gradually formed numerous branches. The economic, social, and cultural development of each branch and region also showed diversity (Yang, 2017).

"According to statistics from the ethnic survey conducted by the Chuxiong Prefecture Ethnic Work Group in 1957, there were more than 40 self-names and exonyms for the Yi people in present-day Chuxiong Prefecture. In 1958, before the establishment of Chuxiong Yi Autonomous Prefecture, based on historical, linguistic, economic, customs, and cultural identity investigations, the Yi people in Chuxiong Prefecture were classified into 13 branches." (Yang & Yang, 2016) (Figure8)

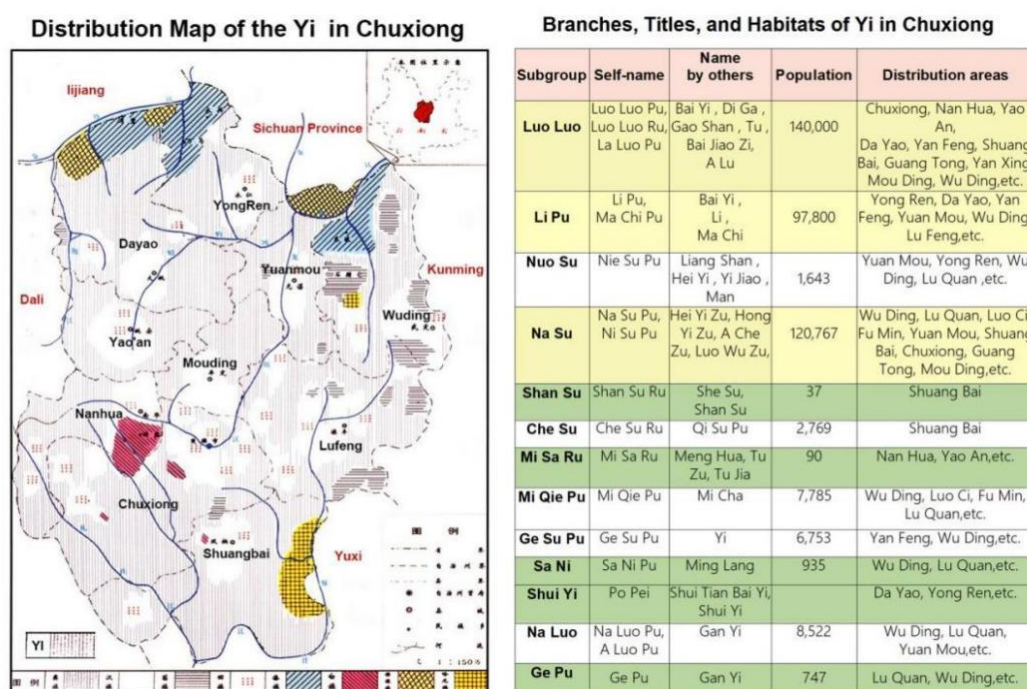


Figure 8 Distribution & Population of 13 Yi Branches in Chuxiong

Source: Shao, 2016

Among the 13 Yi branches in Chuxiong Prefecture, the Yi people in Wuding County are divided into six branches:

(1) Nasu: Self-named "Nasupo," called "Black Yi" by the Han. Some family genealogies record them as "Luowupo." They mostly live in mountainous areas at altitudes of 1,500 to 2,000 meters.

(2) Naluo: Self-named "Naluopo," called "Ganyi" by the Han. They are

distributed in the mid-mountain regions along the river valleys of Jiyi, Dongpo, Tianxin, Wande, and Bailu towns.

(3) Naisu: Self-named "Naisupo," called "Red Yi" by the Han. They are distributed in the mountainous areas around Maojie and Bailu at an altitude of about 2,200 meters.

(4) Micie: Self-named "Miciepo," also called "Micha." They are distributed in the near-city areas, Jiuchang, Chadian, and other basin areas and mid-mountains.

(5) Luoluo: Self-named "Luoluopo," called "White Yi" by the Han. They are distributed in the basin areas of Maojie Town and the mountainous areas of Gaoqiao and Nigagu.

(6) Sani: Self-named "Sanipo," also called "Minglang." They live in the village of Xiale Mei in Chadian Township and the village of Laotao in Gaoqiao Town (Li, Li, Fu & Yang, 2022).

Geographical, linguistic, and cultural identities are the main reasons for the formation of different Yi branches. The Nasu branch in Wuding is considered the ancient Yi aristocracy and ruling class, with relatively more records in language and writing, and its traditional culture is better preserved. According to field surveys, Nasu is currently the most populous of the six branches, with about 60,000 people. The Luoluo, Micie, and Sani branches only have spoken languages without written scripts, relying primarily on oral transmission for cultural heritage. Currently, they have smaller populations, with the Micie branch having several thousand people and the Sani branch only about 400 people.

2.1.1.3 Language of the Yi People

The Yi language belongs to the Yi branch of the Tibeto-Burman language family, which is part of the Sino-Tibetan language family. It was historically referred to as "Luoluo language." The Yi language has many dialects and sub-dialects. Based on differences in language, vocabulary, and grammar, and considering the social and historical contexts of different regions, the Yi language can be divided into six major dialects with a total of 25 sub-dialects. These six major dialects are: Northern dialect, Eastern dialect, Southern dialect, Western dialect, Southeastern dialect, and Central dialect (Bai, 2014).

The Northern dialect is further divided into the Northern sub-dialect and the Southern sub-dialect. The Northern sub-dialect includes three sub-dialects; the Southern sub-dialect includes two sub-dialects. Most Yi people who speak the Northern dialect call themselves "Nuosu," with a population of about 1.7 million, mainly distributed in Sichuan and Yunnan provinces.

The Eastern dialect is divided into the Dian-Qian sub-dialect and the Northeast Dian sub-dialect. The Dian-Qian sub-dialect includes four sub-dialects; the Northeast Dian sub-dialect includes five sub-dialects. Yi people who speak the Eastern dialect call themselves "Nasu," "Nisu," etc., with a population of about 1.2 million, distributed in Guizhou, Yunnan, Sichuan, and Guangxi provinces.

The Southern dialect includes three sub-dialects. Yi people who speak the Southern dialect call themselves "Niesu," "Nasu," with a population of about 950,000, mainly distributed in southern Yunnan province.

The Western dialect can be divided into two sub-dialects. Yi people who speak the Western dialect call themselves "Lalu," "Misha," with a population of about 720,000, mainly distributed in western Yunnan province.

The Southeastern dialect is divided into four sub-dialects. Yi people who speak the Southeastern dialect call themselves "Axi," "Azhe," "Awu," "Pula," "Sani," with a population of about 550,000, mainly distributed in southeastern Yunnan province.

The Central dialect includes two sub-dialects. Yi people who speak the Central dialect call themselves "Luoluo," "Lipo," with a population of about 450,000, distributed in central Yunnan province (Bai, 2014).

Chuxiong Prefecture is located at the center of the three main Yi-inhabited areas in China: Yunnan, Sichuan, and Guizhou. It brings together various Yi dialects. In Wuding County, the Nasu, Naluo, and Naisu branches of the Yi people speak the Northeast Dian sub-dialect of the Eastern Yi dialect. The Micie and Luoluo branches speak the Luoluo sub-dialect of the Central Yi dialect, while the Sani branch speaks the Kunming Axi sub-dialect of the Southeastern Yi dialect (Li, Li, Fu & Yang, 2022).

2.1.2 Overview of History

Wuding County has a long history, and over the course of its development, the Yi culture in Wuding reflects the historical heritage of some of the most representative cultures in Wuding's history, including the ancient Dian Kingdom culture, Nanzhao culture, Luowu culture, and Tusi culture. Additionally, it embodies the diverse elements of ethnic migration and integration.

The formation of Yi culture is closely related to ancient civilizations such as the ancient Qiang, Shu, Dian, and Nanzhao cultures. Throughout the successive migrations of the Yi ancestors, Yi culture has also integrated cultural elements from various ethnic groups, including the Han.

In his book "The History of the Yi People in Chuxiong" (2017), Yang Fuwang traces the origins and historical evolution of the Yi people in Chuxiong Prefecture: the Yi and Han peoples originally share the same roots, only beginning to differentiate around 2600 BCE.

During the Shang and Zhou dynasties (1559 BCE–256 BCE), ancient Qiang people from the Gansu-Qinghai Plateau in northwest China migrated south into the Jinsha River region and integrated with the indigenous Yi and other ethnic groups. Some of the ancient Qiang people settled and intermarried with the resident Yi in what is now Chuxiong, resulting in the incorporation of Qiang culture into the local culture.

In the Spring and Autumn and Warring States periods (770 BCE–221 BCE), the ancestors of the Yi people in Chuxiong created a bronze culture. Archaeologists have uncovered 1002 bronze artifacts from the ancient tombs at Wanjia Dam in Chuxiong, with many scholars believing the tomb owners were "Kunming" people, a group formed through extensive migration and cultural integration, and one of the primary sources of the Yi people in Chuxiong.

During the Qin and Han dynasties (221 BCE–220 CE), numerous tribes inhabited southwest China, collectively known as the "Southwestern Barbarians," with the "Kunming" tribe being the most widespread and powerful. Around the 5th century BCE, the "Kunming" people established the ancient Dian Kingdom, with most of present-day Chuxiong Prefecture falling within its territory.

From the Wei-Jin period to the early Tang Dynasty (265 CE–618 CE), the Cuan

clan rose to prominence, dominating the region with the help of the Sou people (one of the Yi ancestors), forming two culturally and linguistically distinct groups: the "Black Man" and "White Man." The "Black Man" is most closely related to today's Yi people.

During the Tang and Song dynasties (618 CE–1279 CE), the Black Man in the northern Ailao Mountains and Erhai region formed six tribal alliances through continuous tribal wars, historically known as the "Six Zhao." In 738 CE, the southern Mengshe Zhao, supported by the Tang Dynasty, established the Nanzhao Kingdom, which ruled the area now known as Chuxiong.

The Yuan Dynasty (1271 CE–1368 CE) was a crucial period for the final definition and formation of the Yi people. The Yuan rulers established the Yunnan Province, referring to the Yi as "Luoluo," which strengthened the internal identity and cohesion of the Yi people. From the Yuan Dynasty onwards, large numbers of Han people migrated into Chuxiong, further influencing and integrating Han culture into Yi culture. Over time, due to geographic and historical factors, the Yi people in Chuxiong developed numerous sub-groups. (Figure 9)

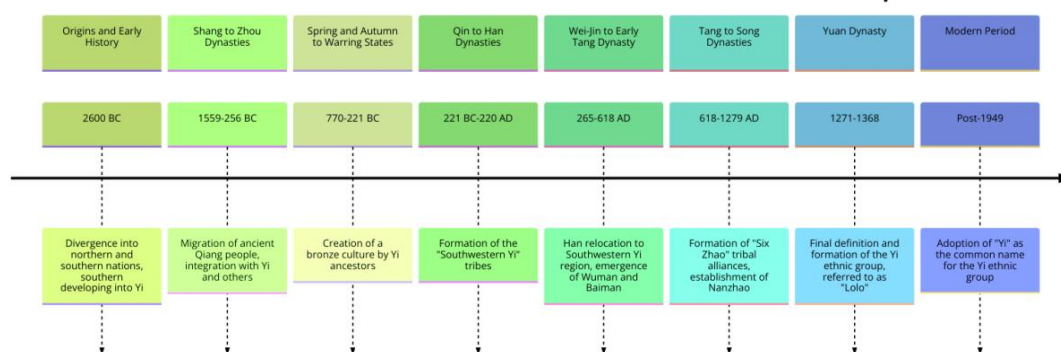


Figure 9 Yi ethnic Group Historical Timeline

Source: created by the author, 2023

After the founding of the People's Republic of China, and following extensive research and consultation with the Yi people, it was decided to use "Yi" as the general term for the Yi ethnic group, fulfilling a millennium-old aspiration for unity. The term "Yi" is not only dignified and ancient in meaning but also represents a transliteration of the self-designation used by the majority of the Yi people.

In summary, the diversity of Yi culture in Chuxiong has gradually formed over a long period of historical development and is a significant source of the charm of Yi culture in Chuxiong.

During the Qin Dynasty to the early Han Dynasty, the Wuding County area was part of the ancient Dian Kingdom. In the early Tang Dynasty, the Luowu tribe was one of the 37 tribes under the Nanzhao Kingdom. By the Song Dynasty during the Dali Kingdom period, the Luowu tribe had developed into the most powerful of the 37 tribes. From the Yuan to the Ming Dynasties, the Luowu tribe submitted to the central dynasties and established the Tusi system, with Yi tribal leaders granted fiefdoms to govern Wuding (Wuding County Local Chronicles Compilation Committee Office, 2016).

The name of Wuding County itself reflects the deep-rooted Yi cultural foundation. The term "Luowu" originates from the name of a Yi tribal chieftain who lived in the present-day Fawo area of Wuding County and Yunlong area of Luquan

County. Known for his effective governance, he strengthened the tribe significantly. After his death, his descendants named the tribe "Luowu" in his honor (Wuding County Local Chronicles Compilation Committee Office, 2016). "Wuding" is derived from Yi language: "Wu" is a phonetic variation of the tribal name "Wu" (Luowu), and "Ding" evolved from the Yi word "Dian." In Yi language, "Dian" refers to a basin, so "Wuding" means "the basin where the Luowu Yi tribe resides." The Yi people distributed in the ancient Luowu region (present-day Wuding and Luquan counties) are referred to as "Luowu Yi people" (Li, Li, Fu & Yang, 2022).

2.2 Research of related literature

2.2.1 The Historical Evolution of Wuding Yi Costumes

In the book "Chinese Yi Clothing," edited by Zhong Shimin and Zhou Wenlin (2006), we are provided with an initial understanding of the development and evolution of Yi clothing. This study is primarily based on over a thousand sets of Yi clothing collected by the Chuxiong Prefecture Museum over a decade, adhering to ethnographic fieldwork and cultural relic collection standards.

The research reveals that the evolution of Yi costume can be traced back thousands of years, with some ancient features still widely prevalent today. Yi costume has undergone a transformation from garments made of leaves, grass, animal hides, and fireweed, to those crafted from wool felt and linen, and later to clothing made of cotton, silk, and blended fabrics. This evolution reflects not only innovations in materials but also the continuous enrichment of cultural connotations and the increasing refinement of craftsmanship (Figure 10).



Figure 10 Development of Yi Clothing in Chuxiong
Source: Shao, 2016

The study further reveals, through archaeological evidence and the analysis of ancient texts, that Yi costumes have exhibited distinct characteristics across different historical periods since the Qin and Han dynasties. From the Warring States period to the Jin dynasty, Yi clothing primarily featured wool felt wraps and tunic-style garments. During the Tang and Song dynasties, when the Yi became the dominant ethnic group in Yunnan, their costumes began to show clear regional variations and social stratification. Garments of the upper classes often used cloth and brocade, embellished with embroidery to signify identity and status.

In the early periods, Yi costumes in the Chuxiong region were relatively simple and primarily functional for warmth. Local chronicles describe two prominent features of the region's traditional attire: first, the use of sheepskin coats paired with hemp garments; and second, the cultural preference for black, often chosen as the base color to create a calm and elegant overall style.

From the Ming to the Qing dynasties, as Yi society transitioned from a semi-

agricultural and semi-hunting economy to a settled agricultural society, their costumes developed more complex regional and subgroup variations. Large-scale development by the central Ming government and the migration of significant numbers of Han people into the Chuxiong region—particularly from the Jiangnan area—deepened cultural exchange. Studies indicate that in the early Ming period, Han migrants accounted for about 70% of Yunnan’s population, while the proportion of the indigenous population decreased to around 30% (Yang, 2017).

Under the influence of Han culture, Yi costumes in Chuxiong during the Ming and Qing dynasties underwent significant changes in color, style, and decoration, particularly influenced by the fashion of women’s attire from the Jiangnan region. The use of green and blue dyes became widespread, and the aesthetic and decorative qualities of the garments were notably enhanced. Entering the Republican period, the colors of Yi costumes in Chuxiong grew increasingly vibrant and ornate, gradually forming the contemporary system of Chuxiong Yi costumes (Yang, 2017) (Figure 11).



Figure 11 Nasu Yi Clothing in Wuding (Qing Dynasty)

Source: Shao, 2016

In the context of Chinese historiography, the term “modern” generally refers to the socio-historical period from 1840 to 1919, while “contemporary” denotes the period from 1919 to the present. These two terms not only reflect the profound transformations in Chinese society over the past two centuries but also provide a historical framework for analyzing the development of Yi costume within modern and contemporary contexts.

Yang Fuwang (2017), in his book *A Historical Account of the Yi in Chuxiong*, summarized the formative characteristics of modern Yi costume in Chuxiong as “incorporating Han cultural elements while retaining regional ethnic distinctiveness.”

Since the founding of the People’s Republic of China (1949), contemporary Yi clothing in Chuxiong has been more influenced by Han culture. Especially for men’s clothing, which has become largely Han-ified, retaining only the traditional sheepskin

jacket and firegrass vest, while women's clothing largely retains ethnic characteristics (Bai, 2014). Since the 1980s, the Chinese government has begun developing minority areas, leading to a significant impact of foreign cultures on local clothing, resulting in many changes in Yi clothing. However, systematic research on the evolution of Yi clothing during this period is still lacking (Zhang & Hua, 2022).

Overall, the traditional clothing styles of the Yi people had formed as early as the Han and Wei-Jin periods. By the Tang and Song dynasties, while maintaining traditional characteristics, clothing styles began to become more diverse and complex. This change became more pronounced during the Qing Dynasty. The current styles of Yi clothing in Chuxiong mainly derive from the period between the Qing Dynasty and the Republic of China, formed through the integration of Yi, Manchu, Han, and other ethnic groups' clothing styles (Shao, 2016).

The evolution of Yi clothing in Wuding follows the development pattern of Yi clothing in Chuxiong Prefecture, but due to Wuding County's unique cultural and historical background, the clothing culture of the Yi people in Wuding differs in certain aspects from that of other regions in Chuxiong Prefecture. Specifically, the 600-year-old Luowu culture (Mi, 2002), the Buddhist culture that began in the Yuan Dynasty (1311 CE) (Mi, 2002), the imperial culture of the Ming Dynasty, and the peony culture are all reflected in the clothing of the Yi people in Wuding.

2.2.2 Classification of Wuding Yi Costumes

Language is one of the important bases for the classification of clothing. As previously mentioned, the Yi language belongs to the Yi branch of the Tibeto-Burman languages within the Sino-Tibetan language family. The Yi language in China can be divided into six major dialects: Northern, Eastern, Southern, Western, Southeastern, and Central (Bai, 2014).

In their book "The Yi People of Yunnan, China," Li Yangxi and Tong Chengqing (2011) combine linguistic and geographical characteristics to classify Yi clothing into six types: Liangshan type (clothing of Yi groups speaking the Northern Yi dialect, divided into Yinuo, Shengzha, and Suodi styles), Wumengshan type (clothing of Yi groups speaking the Eastern Yi dialect, divided into Weining and Panlong styles), Honghe-Ailaoshan type (clothing of Yi groups speaking the Southern Yi dialect, divided into Yuanyang, Jianshui, and Shiping styles), Southeastern Yunnan type (clothing of Yi groups speaking the Southeastern Yi dialect, divided into Shilin, Mile, and Wenshan styles), Wuliangshan type (clothing of Yi groups speaking the Western Yi dialect, divided into Weishan and Jingdong styles), and Chuxiong type (clothing of Yi groups speaking the Central Yi dialect, divided into Longchuanjiang, Dayao, and Wuding styles).

Due to the variety and unique characteristics of Wuding-style Yi clothing, it is classified as an independent category among the three main types of Yi clothing in the ten counties (cities) of Chuxiong Prefecture. Wuding-style clothing is primarily distributed in Wuding County and the adjacent counties of Lufeng and Yuanmou (Li & Tong, 2011).

The book "Wuding Ethnic Clothing," compiled by the Wuding County Political Consultative Conference (2016), provides a brief introduction to Yi clothing in Wuding County. Traditional Yi clothing in Wuding is classified by gender into male and female clothing; by age into four categories: children, youth, middle-aged, and

elderly; and by branches into six major categories: Nasu, Naisu, Naluo, Micie, Luoluo, and Sani. After the 1980s, men's clothing became largely Han-ified, while women's clothing better retained ethnic characteristics and could be divided into everyday wear and ceremonial attire. Everyday wear is relatively simple and plain, while ceremonial attire is richly decorated, with exquisite patterns, fine craftsmanship, bright colors, and various silver accessories, used for weddings, ceremonies, festivals, gatherings, and rituals.

The book also introduces the characteristics of Yi clothing from several representative branches and regions, including Nasu branch clothing from HuanZhou Dazhuang, Nasu branch clothing from DaXiyi village, Naisu branch clothing from Maojie area, Luoluo branch clothing from Maojie area, Naluo branch clothing from Chidan village, and Sani branch clothing from Xia Lemei village. The characteristics of these clothing styles are summarized as follows:

(1) Nasu Branch Costume in Huanzhou Village

Huanzhou Village is a large village with a history of nearly 900 years, predominantly inhabited by the Nasu branch of the Yi people. In the past, the Nasu branch held a higher status among various Yi branches, and thus, their clothing exhibited distinct hierarchical notions. Traditional women's clothing was categorized into noble women's attire, middle-class women's attire, and commoner women's attire.

Noble Women's Attire: The primary colors are green and blue, with a right-side opening on the front, double-layered sleeves (inner sleeves are long and narrow, outer sleeves are wide and extend past the elbows), and embroidered patterns on the edges of the collar and cuffs. This attire is paired with pleated long skirts and pointed "Su jian shoes," "Tiger head shoes," or "Cloud head shoes," along with a cylindrical hat.

Headwear: The most distinctive feature of young women's attire is the "Rooster Hat," resembling a rooster's head with a round top and fish-tail-shaped, upturned back. The hat is adorned with embroidered patterns, yarn tassels, colorful ribbons, and silver ornaments. The Rooster Hat has different styles for ages 2-5, 6-10, and 11 to youth. Women no longer wear the Rooster Hat after childbirth, switching to a black headscarf decorated with silver ornaments.

Clothing: Modern popular women's styles are similar to the traditional middle-class and commoner women's attire, with a right-side opening and narrow sleeves. Young women's tops are often bright colors like blue, green, and red, while middle-aged and older women's tops are primarily black and blue, paired with dark pants.

Aprons: Nasu women wear aprons that cover the chest and abdomen. Before marriage, the apron is worn low, and after marriage, it is worn high. They wrap an 18-foot-long blue or black belt around their waist.

Shoes: The most unique are the boat-shaped embroidered shoes with upturned toes, featuring embroidery that matches the patterns on their clothing.

Embroidery: Multiple embroidery patterns and lace decorate the collars, shoulders, cuffs, aprons, and pants, featuring designs such as rhododendrons, lotuses, dragons, phoenixes, fish, butterflies, the character "寿" (longevity), the swastika "卐", spirals, fire, diamonds, octagons, and dancing figures (Wuding County Political Consultative Conference, 2016). (Figure 12)



Figure 12 Nasu Yi Costumes by Age Group, Huanzhou Village (Wuding)

Source: Wang, 2016

(2) Nasu Branch Costume in Da Xiyi Village

Da Xiyi Village is located in the Daxiushan Mountains of Wuding County, bordering Yunlong Township of Luquan County in the Kunming area. Due to intermarriage between the Yi people of these regions, their clothing combines features of the Nasu branches from both Wuding County and Luquan County.

Clothing: This consists of hats, clothing, aprons, pants, shoes, and sheepskin shawls. Young women's attire is brightly colored, while middle-aged and older women's clothing is mainly blue and black, giving a dignified and simple appearance.

Headwear: Girls wear "Rooster Hats" after the age of three. After marriage, they switch to a cylindrical hat knitted from yarn, while elderly women wear black headscarves. The headscarf is a high, cylindrical hat made from black cloth, decorated with silver ornaments on the top and sides.

Top: Young women wear narrow-sleeved tops with a right-side opening, while middle-aged and older women wear medium-length, double-sleeved tops with a right-side opening and a stand-up collar adorned with silver ornaments. The apron covers the chest and abdomen, is narrow at the top and wide at the bottom, usually made from black cloth, and features embroidered patterns in the middle. It is hung around the neck with a silver chain. Pants are generally wide and black, some with embroidered patterns. For footwear, young women wear white, embroidered shoes with fur edges, while middle-aged and older women wear small boat-shaped, pointed embroidered shoes.

Sheepskin Shawl: This is a distinctive element of the Nasu branch clothing in Da Xiyi Village. Made from sheepskin with black cloth sewn on the other side, it is worn diagonally across the shoulder with a strap, providing both warmth and decorative function.

Many parts of the ensemble are adorned with embroidery, featuring motifs from daily life, mythology, and totems. The hems of the tops worn by middle-aged and older women have fabric strips sewn into shapes forming characters (Wuding County

Political Consultative Conference, 2016). (Figure 13)



Figure 13 Naisu Yi Costume, Daxiyi Village (Wuding)
Source: Yang, 2016

(3) Naisu Branch Costume in Maojie Town

The Naisu branch of the Yi people in Wuding County is primarily distributed in Maojie Town. Their traditional clothing is characterized by blue backgrounds with red floral embroidery, earning them the nickname "Red Yi."

Basic Style for Clothing: The attire consists of a top with a right-side opening and wide cuffs, typically three-quarter sleeves. The top is short in the front, reaching the abdomen, and long in the back, extending to the calves. An apron is tied in the front, and a belt is fastened at the back. The festive attire for young women features embroidered patterns on the shoulders, front, and back hems, with colorful thread tassels or silver fringes on the shoulders. Both the apron and belt are richly embroidered with various tassels and pendants. Traditionally, Naisu women wore pleated skirts, but later switched to pants. The pants are generally black, with approximately 10 centimeters of embroidery and lace at the cuffs. The embroidered shoes have floral patterns on the upper and are fastened with buttons. Elderly women's clothing is simpler, with less decoration.

Headwear: Naisu women typically wear embroidered hats until they are 40-50 years old. The hat resembles a tiger head in the front and a tiger tail at the back, with the top and sides adorned with floral embroidery and colorful yarn balls. Some hats feature 8 or 10 white bead strings and a silver chain. Women over 60 wrap their heads in black scarves with a round embroidered headband, decorated with eight equidistant flowers made from colorful threads.

Firegrass Cloth Shawl: One of the most distinctive elements of Naisu women's clothing. Firegrass is a wild herbaceous plant with tough fibers, historically used by ancient people to create sparks for fire, hence the name. Many Yi regions have a history of spinning and weaving firegrass fiber into cloth. Firegrass cloth is durable, warm, and moisture-resistant. The firegrass shawl is embroidered around the edges and worn diagonally across the back with a fabric strap, providing warmth and a

surface to sit on, characterized by an ancient and elegant style.

Embroidery:The patterns are mainly divided into totem patterns, floral patterns, animal patterns, and geometric patterns. Common embroidery motifs include fire, rhododendrons, peach blossoms, and fish. Floral patterns are the most important decorative element in Red Yi clothing, with rhododendron motifs being the most representative (Wuding County Political Consultative Conference, 2016). (Figure 14)



Figure 14 Nasu Yi Clothing, Maojie Town (Wuding)
Source: Shao, 2016

(4) Luoluo Branch Costume in Maojie Town

The Luoluo branch is mainly distributed in Maojie Town and Gaoqiao Town of Wuding County. Weishan was once the location of the Mengshe Zhao (Nanzhao) kingdom. In 737 AD, with the help of the Tang Dynasty, Mengshe Zhao unified the Erhai region. Subsequently, the Nanzhao authorities carried out large-scale population relocations in the conquered areas. The Luoluo branch likely migrated from Weishan and Dali to Wuding during this period. The Luoluo branch of the Yi people in Wuding County resides in the basin and semi-mountainous areas, and their clothing exhibits no significant regional differences.

Luoluo Women's Clothing is mainly divided into young women's and elderly women's attire.

Young Women's Attire:The colors are mostly red, green, and blue. Young women wear flower-decorated headbands (half hats), starting with a blue cloth embroidered with floral patterns and edged with red thread placed on the head, followed by the embroidered headband adorned with four rows of silver bubbles and 25 silver Buddha statues. The top is a long-sleeved, right-side opening jacket paired

with black, green, or blue pants, with approximately five rows of embroidered patterns or lace at the cuffs. The apron is a rectangular half-apron made of green or blue cloth, embroidered with geometric and floral patterns, and tied at the waist with an embroidered belt. After childbirth, women switch to large-sleeved jackets and primarily black pants. Luoluo women wear embroidered pointed shoes, with tiger tooth patterns decorating the shoe edges. The clothing features embroidery on the shoulders, cuffs, aprons, and pants, with the "powder ball flower" being the most distinctive pattern. Since the 1960s, Luoluo women have started using mass-produced lace trim instead of embroidery, but the powder ball flower pattern has been preserved.

Elderly Women's Attire: This primarily features blue, green, and black colors, consistent in style with young women's attire and paired with black pants. Elderly women wear headgear made from three feet of black cloth folded into a cone shape, starting with a piece of blue cloth on top of the head, followed by the headgear. A 12-foot-long black belt is tied around the waist, along with a square apron (Wuding County Political Consultative Conference, 2016). (Figure 15)



Figure 15 Luoluo Yi Costumes, Maojie Town (Wuding)
Source: Deng, 2016

(5) Naluo Branch Costume in YiChidan Village

YiChidan Village is located in Dongpo Township of Wuding County, on the south bank of the Jinsha River. The Naluo branch speaks the same Northeast Yunnan sub-dialect of the Eastern Yi dialect as the Nasu and Naisu branches, and their clothing styles share many similarities.

Headwear: Headwear varies by age, including embroidered hats, Luoguo hats, yarn-knitted cylindrical hats, and black headscarves. Young women wear embroidered hats before childbirth, with the front resembling a tiger's head and the back like a phoenix tail. The front protruding part is embroidered with an

rhododendron flower, with butterflies and floral patterns on the sides, decorated with silver bubbles, beads, and bells, and yarn tassels hanging down. After childbirth, women wear dark Luoguo hats with silver bubbles on top. In the past 20 years, Luoguo hats have been mostly replaced by black headscarves and yarn-knitted cylindrical hats. Yarn hats are typically red and purple, with green floral balls symbolizing rhododendrons on the top and sides.



Figure 16 Naluo Yi Costumes, Yichidan Village (Wuding)

Source: Fu, 2016

Top: Naluo women wear a right-side opening top, shorter in the front (reaching the abdomen) and longer in the back (extending to the calves). The apron is narrow at the top and wide at the bottom, usually made of black fabric, and hung around the neck with a silver chain. The shoulders, cuffs, and aprons are embroidered with pomegranate flowers, pomegranate branches and fruits, pine branches, butterflies, rhododendrons, and clouds. An embroidered belt is tied around the waist, hanging at the back and embroidered with butterflies, pomegranates, wheat ears, and flowers.

Bottoms: The traditional bottoms for the Naluo branch are pleated skirts made of blue, white, and black fabrics pieced together in three sections.

Embroidered Shoes: Traditional embroidered shoes have upturned toes, with tiger tooth patterns on the shoe edges, resembling a modified version of tiger head shoes (Wuding County Political Consultative Conference, 2016). (Figure 16)

(6) Sani Branch Costume in Xia Lemei Village

The Sani branch in Wuding primarily resides in Xia Lemei Village, Chadian Town. Historical evidence suggests that the Sani people of Xia Lemei Village migrated from Zhangbai Village, Baimei Village Committee, Tuanjie Town, Xishan District, Kunming City, over 300 years ago.

Headwear: Unmarried girls wear embroidered hats that are open at the top and decorated with patterns of camellias and rhododendrons, along with silver bubbles. The hat is worn over a blue cloth scarf placed on the head. Married and elderly women wear headscarves, typically made of pink or black cloth, wrapped around the head in circles using 1-2 meters of fabric. Some women wear only a blue cloth scarf

on their heads.

Top:Sani women wear right-side opening tops adorned with embroidered patterns and lace on the collar and sleeves. They tie a rectangular blue or black apron around their waists, which is embroidered with floral, bird, and geometric patterns. In cold weather, Sani women wear sheepskin capes over their shoulders.

Pants:Usually black, with multiple rows of embroidery and lace decorations on the lower part of the legs.



Figure 17 Sani Yi Costumes, Xialemei Village (Wuding)

Source: Zhang, 2016

Embroidery: The embroidery technique of Sani women differs from other Yi branches in Wuding. They first draw patterns on the cloth with a ballpoint pen, stretch the fabric on a round bamboo frame called a "stretcher," and then embroider with silk threads (Wuding County Political Consultative Conference, 2016). (Figure 17)

(7) Micie Branch Costume

In the book "Interpretation of Yi Clothing in Chuxiong" edited by Shao Ping (2016), the clothing of the Micie branch of the Yi people in Wuding County is briefly introduced. The Micie branch originates from the Weishan area in Dali Prefecture and is distributed in Gaoqiao, Jiuchang, and Chadian towns of Wuding. Their clothing style is significantly influenced by the Nasu and Naisu branches in Wuding, differing greatly from traditional Micie attire.

Women's Festive Attire: Bright colors such as red and orange are commonly used. Embroidery patterns and lace decorations are present on the shoulders, chest, cuffs, apron, and pant hems.

Headwear:The hat is round with an upturned tail, fully embroidered with floral patterns and studded with silver bubbles. The hat is worn over a blue or black

headscarf, with the scarf hanging down the sides of the head. (Figure 18)



Figure 18 Michay Yi Costume, Wuding
Source: Shao, 2016

2.2.3 Cultural Meaning of Wuding Yi Costumes

2.2.3.1 Overview of the Cultural Meaning of Yi Costumes

Based on the research by Yang Fuwang and Qu Kun Yun (1999), the cultural connotations of traditional Yi clothing in Chuxiong can be interpreted from the following dimensions:

(1) Clothing as a Reflection of Social Hierarchy and Family Branch Concepts: In ancient Yi society, the concept of hierarchy was clearly reflected in their clothing. For example, the Hei Yi branch typically wore garments made of high-quality wool or cotton, while the Bai Yi branch wore homemade wool or hemp clothing. The differences were evident not only in the materials but also in the colors and decorations, showcasing a clear hierarchical distinction.

(2) Clothing as a Carrier of History, Myths, and Legends: Lacking written records, Yi clothing often served as a non-textual cultural memory, recording and transmitting Yi myths, legends, and history.

(3) Clothing as an Expression of Primitive Religious Beliefs: Yi religious beliefs remain in a primitive stage, which is clearly reflected in the design and patterns of their clothing. This includes, but is not limited to, tiger totems, ancestor worship, mother worship, and Yi witch culture.

(4) Clothing as a Reflection of the Ecological Environment: The materials, styles, patterns, and colors of Yi clothing were often chosen based on their living environment, reflecting the profound impact of the ecological environment on cultural transmission.

Bai Xingfa's (2014) research further expanded the understanding of the cultural connotations of Yi clothing, including its protective function in adapting to the natural environment, its differentiating function in social roles, its normative function in rituals and ethics, its expression in folk beliefs and polytheism, and its aesthetic function in beautifying life.

Based on the researcher's fieldwork in Wuding and combined with literature research, it was found that Wuding Yi clothing also embodies the above-mentioned cultural connotations of traditional Yi culture. The following paragraphs will review related research on how these cultural connotations are reflected in Wuding Yi clothing.

2.2.3.2 Meaning of Styles in Wuding Yi Costumes

Although Yi clothing comes in various styles, the clothing of different branches and regions shares some common characteristics, reflecting the commonality of Yi culture.

(1) Headwear as a Reflection of Identity, Legends, or Totem Worship

Yi headwear comes in many types, each with unique features, and serves as the most vivid highlight of Yi clothing, rich in cultural connotations. Headwear signifies different social statuses and identities among the Yi people and expresses worship of totems and deities (Zhong & Zhou, 2006). The headwear of Wuding Yi people is a distinguishing feature from other branches and serves as a primary marker to differentiate women's ages, marital statuses, and maternity statuses. Common headwear includes the rooster hat, yarn hat, and black headscarf (Wuding County Political Consultative Conference, 2016). The parrot hat, also called the rooster hat, is one of the signature clothing items for young Yi women in Wuding County. In traditional Yi culture, the rooster is a symbol of good fortune and wisdom, with its constant crowing bringing light to the land. (Figure 19)



Figure 19 Nasu Rooster Hat, Wool Hat, Black Headscarf

Source: Shao, 2016

There is a folk legend about the rooster hat: A young Yi couple in love was once meeting in the forest when the young man was killed by a demon king. The young woman, unwilling to be humiliated, fled. As she reached the edge of the village, a rooster crowed, scaring the demon king away. The woman returned to the forest with the rooster, and as it crowed again, the young man was revived. Since then, Yi girls have worn rooster hats to avoid the demon king's harm (Zhong & Zhou, 2006). Yi girls believe that wearing the rooster comb-shaped hat can ward off evil and bring good luck and happiness.

(2) Tail Ornaments as a Reflection of Totem Worship

A common phenomenon in Yi clothing is the decoration of the hips, known as "tail ornaments," reflecting ancient totem worship in clothing. Many Yi texts and oral literature record "Jiulong," a legendary figure said to be the son of a dragon and the ancestor of the Yi people. Therefore, the dragon's image is reflected in clothing by having a "tail" trailing from the back of the garment (Zhong & Zhou, 2006).

Wuding Yi clothing also retains "tail ornaments." Women of various Yi branches tie an embroidered apron around their waists, with intricately embroidered patterns on

the waistband, called "floating ribbons" by the Yi people. These ribbons are tied at the back and hang down like a beautiful tail (Wuding County Political Consultative Conference, 2016). Naturally, the style, size, embroidery patterns, and decoration techniques of the belts vary among different branches. (Figure 20)



Figure 20 "Tail Ornament" of Yi Clothing

Source: by the author, 2024

Additionally, the Nasu, Naisu, and Naluo branches' women's tops are often short in the front and long in the back, called "dragging tail clothes." The front hem reaches the waist, while the back hem extends to the calves, another remnant of the "tail ornaments," reflecting the worship of the dragon totem.

2.2.3.3 Meaning of Materials and Craftsmanship in Wuding Yi Costumes

The materials and craftsmanship of Wuding Yi clothing reflect the living environment of the Yi people in Wuding, technological development, and the continuous evolution of their clothing culture.

(1) Clothing Materials Reflect the Living Environment and Technological Progress

Through the collection and research of Yi clothing data from local chronicles in Chuxiong Prefecture during the Qing Dynasty (1644-1912) and the Republic of China period (1912-1949), Jin Yongfeng (2014) found that records on Yi clothing mainly focus on the Heilo, Baila, and Luowu branches, which primarily reside in Wuding. From these records, some common characteristics can be summarized: in terms of materials, they primarily used hemp cloth, homemade cotton cloth, firegrass cloth, woolen cloth, leather, and wool felt, depending on local resources and handicrafts. The craftsmanship included weaving, sewing, tanning, felt-making, and embroidery, with increasing emphasis on decorative arts, using brightly colored fabrics and decorations such as shells and embroidery.

Before the Qing Dynasty, the Yi people in Wuding mainly used firegrass cloth and hemp cloth as their clothing materials. The Yi people have a long history of

weaving hemp cloth, as evidenced by the pottery spindle whorls unearthed from various Neolithic sites in Chuxiong, indicating that the Yi ancestors mastered hemp spinning technology at least 3,000 years ago. In the era of self-sufficient economy, weaving hemp cloth was a necessary handicraft skill for Yi women (Shao, 2016).

Weaving firegrass cloth is also an ancient Yi technique. They harvested wild firegrass leaves from the mountains and used the downy fibers on the backs of the leaves to weave cloth. It could take months or even years to weave a firegrass garment, making firegrass cloth garments precious, often given by Yi girls to their lovers as a gift. The ancient firegrass weaving technique is still preserved in Wuzhadian Village, Maojie Town, Wuding County (Wuding County Political Consultative Conference, 2016). The firegrass shawl of the Naisu branch has also become a distinctive feature of Naisu women's attire due to its unique material. (Figure 21)



Figure 21 Firegrass Shawl: Traditional Nasu Yi Symbol

Source: by the author, 2024

From the Qing Dynasty to the Republic of China period, homemade cotton cloth became popular as a clothing material. "Homemade cotton cloth" refers to cotton cloth produced by Yi women using traditional hand-weaving techniques at that time (Shao, 2016). By the end of the Qing Dynasty, silk began to be used as a clothing material, but it was mainly for Yi nobility. After the 1970s, the materials for Yi clothing gradually evolved into machine-woven cotton cloth, polyester-cotton, and synthetic fabrics (Wuding County Political Consultative Conference, 2016).

(2) Craftsmanship Reflects Historical Evolution and Cultural Integration

Yi clothing incorporates a variety of handicraft techniques, including weaving, dyeing, embroidery, weaving, inlaying, and embellishing (Shao, 2016). Among these, Yi embroidery, referred to as "Yixiu," is a folk art treasure created and accumulated by the Yi people through long-term practical experience. The characteristics of Yi embroidery can be summarized as diverse themes, unique composition forms, vibrant colors, and distinct regional and ethnic features (Zhong & Zhou, 2006).

The development history of "Yixiu" mirrors the history of social development and cultural integration of the Yi people. In the book "Yixiu" (A, 2017), the author outlines the development history and cultural origins of Yi embroidery in Chuxiong. Yi embroidery has evolved on the basis of the Yi people's own creativity, incorporating techniques and cultural elements from the four famous Han Chinese embroideries (Suzhou, Sichuan, Guangdong, and Hunan embroideries), gradually forming a unique embroidery style.

The origins of Yi embroidery can be traced back to ancient times, rooted in the tattooing tradition prevalent among the Yi ancestors. With the advancement of weaving technology, decorative techniques using colors like cinnabar to create patterns on fabrics emerged. By the Qin and Han dynasties (221 BCE–220 CE), the "tiaohua" (cross-stitch) and "zhihua" (weaving flowers) techniques of the Yi ancestors in Yunnan had already reached a high level (A, 2017).

Yi embroidery experienced two significant development leaps. The first occurred in 223 CE when Zhuge Liang's southern campaign integrated the "Sou" (Yi ancestors) leaders into the Shu regime. The wives of these leaders learned Han Chinese embroidery techniques in the Shu region (present-day Sichuan Province) and then taught them to the Sou women. The second leap occurred in the early 8th century when King Piya of the Nanzhao Kingdom, primarily composed of the Yi people, conquered Chengdu, seizing a large number of Han Chinese embroidery craftsmen and Sichuan brocade materials. The development of the textile industry in the Nanzhao region provided a robust foundation for embroidery, making embroidered garments accessible not only to royalty but also to ordinary people (A, 2017).

During the Yuan, Ming, and Qing dynasties, the central government stationed troops and set up agricultural colonies in Yi regions, bringing a large influx of Han Chinese from the Central Plains. This migration introduced advanced production technologies, promoting the socio-economic development of the Yi people. During this period, Yi embroidery, while inheriting Sichuan embroidery, also absorbed cultural elements from Suzhou, Hunan, and other ethnic embroideries, gradually forming its distinctive style (A, 2017).

Other scholars have supplemented the history of Yi embroidery evolution in Chuxiong. In the Tang and Song dynasties, during the tenth year of Zhenyuan in the Nanzhao Kingdom (794 CE), Nanzhao captured over 40,000 craftsmen from Chengdu, Sichuan, including a large number of embroidery craftsmen. This significantly advanced embroidery techniques among the Yi ancestors and led to the creation of the Yi legend "Embroidering Maiden" (Zhong & Zhou, 2006). From the Yuan to the Qing dynasty (1271–1912 CE), embroidery became widespread among Yi women, with more diverse materials and richer patterns. To this day, Yi embroidery retains strong regional characteristics and ethnic styles (Bai, 2014). (Figure 22)



Figure 22 Yi Embroidery Development Timeline

Source: by the author

The techniques of "Yixiu" (Yi embroidery) are broad and varied, with common methods including coiling, applique, patchwork, inlay, multicolored thread embroidery, and cross-stitch. Specifically, the "coiling" technique mainly uses colored threads or cloth strips coiled into various patterns, which are then fixed onto specific parts of the clothing. The "applique" technique involves symmetrically cutting patterns from colored fabric and flatly adhering them to the garment. The "patchwork" technique cuts specific pattern outlines into the fabric and secures them with different colored fabrics. The "inlay" technique adds colored fabric strips or lace to specific areas of the garment. "Embroidery" uses colored silk threads to stitch various patterns onto designated parts of the clothing. The "cross-stitch" technique, primarily used on pants and aprons, weaves threads into different geometric patterns (Bai, 2014). These decorative techniques can all be found in Wuding Yi clothing.

2.2.3.4 Meaning of Colors in Wuding Yi Costumes

The colors of clothing are an important marker of social status, hierarchy, branches, and age within Yi society (Wuding County Political Consultative Conference, 2016).

(1) Clothing Colors Signify Social Class and Identity Among the Yi People

In Yi history, the Nasu branch was considered the nobility among the Yi, and their clothing reflects a luxurious and dignified style, retaining the legacy of Qing Dynasty attire (Shao, 2016). The Nasu Yi people revere black as a symbol of nobility, hence they are referred to as "Black Yi" by the Han Chinese. Until the Republic of China period, Black Yi were regarded as the aristocracy in Yi regions. Traditional Black Yi clothing was made from self-dyed black fabric, incorporating dark hues like green, blue, and other similar colors. Men dressed entirely in black, while women often wore black headscarves, with clothing primarily in black, green, and blue, embellished with lace and embroidery. Even brides wore black, green, or blue silk scarves on their heads during weddings (Wuding County Political Consultative Conference, 2016). Although the concept of social hierarchy has weakened in modern society, the Nasu branch's tradition of using black as the primary color in their clothing has never changed. (Figure 23)

In contrast, the Naisu branch, known for adorning their clothing with red, is called "Red Yi" by the Han Chinese. It is said that the Naisu branch are descendants of clan embroideresses, hence Red Yi women are skilled in embroidery. Traditional Red Yi women's attire is often made from blue fabric and features rich colors with extensive decorative embroidery, prominently in red. Red is primarily used to embroider rhododendron patterns, covering the entire garment, which also reflects a form of nature worship (Wuding County Political Consultative Conference, 2016).



Figure 23 Nasu Yi Clothing: Black as Noble

Source: Shao, 2016

(2) Clothing Colors Reflect Cultural Identity of Yi Groups

Yi people have many branches, and their clothing varies greatly across different regions, but the primary colors of their clothing are consistently black, red, and yellow. These three colors not only reflect the aesthetic sense of the Yi people but also represent a deep integration of their religious beliefs and spiritual culture, forming a color language that fosters mutual identity, belonging, and spiritual resonance among the Yi people (Pa, 2021).

The cultural identity of the primary colors black, red, and yellow is also evident in Wuding Yi clothing:

- Black: symbolizes power and status and is associated with the worship of the black tiger totem (Hao, 2008). Black represents nobility and solemnity. The "Nasu" branch in Wuding, whose name means "black people" in Chinese, refers to the Jinsha River, the source of Yi culture, as "black water" and the Wumeng Mountains, where their ancestors lived, as "black tiger mountains." Traditional clothing uses black as the base color, with black headscarves and other accessories.

- Red: is related to the Yi ancestors' worship of the sun and fire, as well as the worship of the rhododendron flower. Both the Nasu and Naisu branches in Wuding regard the rhododendron flower as their "clan flower" and an ancient Yi totem. Red is prominently used in the embroidery and decorative elements of clothing, with the Naisu branch being the most representative .(Figure 24)

- Yellow: symbolizes beauty, brightness, wealth, health, and peace in the minds of the Yi people. According to Yi scriptures, the matriarchal lineage of the Yi people originated from the yellow water, and yellow clouds are considered the most beautiful. In Yi clothing, yellow is often used to represent cloud patterns. Although yellow does not cover large areas of the clothing, it is interspersed in small, bright amounts throughout various parts of the attire (Wuding County Political Consultative Conference, 2016).



Figure 24 Naisu Yi: Marked by Red Rhododendron

Source: Zhong & Zhou, 2006

(3) Clothing Colors as a Marker of Age

The colors of women's clothing reflect their social status and life stage. There is a clear distinction in color choices between unmarried girls and married women: the former predominantly use red and white, while the latter mainly use black and blue (Hao, 2008).

In the Nasu branch's clothing, young women's tops are often black, red, light blue, pink, and light green, while middle-aged and elderly women's clothing is primarily blue and black, with all pants being black. In the Luoluo branch's women's clothing, the color tones of young women's attire are mostly red, green, and blue, while elderly women's attire is primarily blue, green, and black.



Figure 25 Nasu Yi: Clothing Colors by Life Stage

Source: Zhong & Zhou, 2006

The embroidery color schemes on clothing also vary according to the wearer's age. Young women's clothing is very brightly colored, while the color schemes for middle-aged and elderly women are more elegant (Wuding County Political Consultative Conference, 2016). Middle-aged and elderly women across various branches typically no longer wear colorful embroidered hats, opting instead for black headscarves. (Figure 25)

2.2.3.5 Meaning of Embroidery Patterns in Wuding Yi Costumes

Embroidery patterns are the soul of Wuding Yi clothing. Traditional Yi women

learn the skills of Embroidery from a young age, adorning their garments with traditional Yi patterns. These patterns are rich in content, including animals, plants, landscapes, astronomy, daily objects, and abstract geometric shapes (Li & Tong, 2011).

Through the study of local chronicles from the Qing Dynasty to the Republic of China period in Chuxiong Prefecture, it was found that Wuding Yi clothing has the following common characteristics: the worship of rhododendrons, black, sheep, and fire is reflected in their clothing (Jin, 2014).

(1) Rhododendron Patterns: Symbols of Nature and Ancestor Worship

According to legend, the Yi ancestor Apu Dumu survived a great flood by hiding in an rhododendron tree. Later, he married three fairy maidens and fathered six sons, who became the ancestors of humanity. Therefore, the Yi people revere the rhododendron, considering the rhododendron tree and its flowers as talismans and clan protectors (Wuding County Political Consultative Conference, 2016). In the Yi language, the rhododendron is called "Miyilu," meaning a large and prosperous flower. Due to its bright color and its resistance to drought and cold, the Yi people associate it with good fortune and hope. Additionally, the rhododendron is a totem of the Chuxiong Yi people, symbolizing fertility worship (Shen & Zhao, 2008). (Figure 26)



Figure 26 Rhododendron flowers in nature and the patterns in Yi costume

Source: by the author

rhododendron worship is reflected in various forms in Wuding Yi clothing. For example, in the headwear of Nasu women, young girls' rooster hats are adorned with red thread balls on either side, symbolizing rhododendrons. The yarn hats worn by married women, which have become popular in the Nasu and Naluo branches in the past 20 years, have circular abstract patterns on the left, right, and front, also representing rhododendrons. (Figure27)



Figure 27 Rhododendron on Nasu Women's Hats

Source: Wuding County CPPCC, 2016

The most distinctive embroidery pattern on Nasu women's clothing is the rhododendron. rhododendron decorations are widespread, embroidered in red on the shoulders and hems of clothes, hats, aprons, shoes, and shawls, often covering the entire garment to the point that the fabric's base color is barely visible (Wuding County Political Consultative Conference, 2016). rhododendron patterns are also common in the clothing of the Nasu and Naluo branches. Embroidery patterns of rhododendrons, symbolizing beauty, prosperity, good fortune, and happiness, are continually innovated by Wuding Yi women and widely applied to their garments .

(2) Fire Patterns: Symbols of Fire Worship

Fire worship reflects ancient nature worship. The Yi people, living long in mountainous or semi-mountainous regions, relied on fire for warmth, protection from wild animals, and agricultural practices, thereby attributing immense power to fire. The Yi people hold a sense of mystery and reverence for fire, which led to fire worship. Fire patterns have been passed down through generations in Wuding Yi clothing, commonly appearing as firesteel and flame patterns (Wuding County Political Consultative Conference, 2016) .

(3) Four Directions Eight Tigers Pattern: Yi Tiger Worship and Cosmology

The Yi people consider the black tiger their totem (Yang, 1987). They believe they are descendants of the tiger clan, regarding the tiger as their ancestor. The "Four Directions Eight Tigers" pattern in the Nasu branch clothing of the Wuding Yi people is arranged in the shape of a bagua, with a Taiji symbol embedded in the center and eight tigers embroidered around the periphery, rich with profound meaning (Wuding County Political Consultative Conference, 2016).

The Yi "bagua" refers to the eight directions of the universe, which are the four major directions of east, south, west, and north, and the four minor directions of southeast, southwest, northwest, and northeast, symbolizing the change and development of all things. The "Four Directions Eight Tigers" pattern represents auspiciousness from all directions. Its traditional layout consists of an outer and inner set of four directions, each of the inner four directions containing one tree and two tigers, complemented by eight rhododendron flowers. This pattern reflects the Yi ancestors' worship of the universe and the tiger totem (Zhong & Zhou, 2006). In Wuding Yi clothing, the "Four Directions Eight Tigers" pattern appears on the sides of the middle section of Nasu women's pants and is commonly used on the cloth for

carrying children. (Figure28)



Figure 28 “Four Directions & Eight Tigers” Pattern

Source: Shao, 2016

In summary, Yi clothing patterns are closely related to their history, culture, philosophy, religious beliefs, and calendar. However, systematic research on the patterns in Wuding Yi clothing is still lacking. For instance, patterns of sheep, phoenixes, dragons, and fish are common in Wuding Yi clothing but rare in other Yi clothing, warranting further study.

2.2.4 Comparative Study of Yi and Lisu Costumes Culture

2.2.4.1 Cultural Background Comparison

Both the Yi and Lisu languages belong to the Yi branch of the Tibeto-Burman languages within the Sino-Tibetan language family (Bai, 2014). However, "the Lisu people historically did not have their own written language, making it difficult to preserve many precious aspects of their ethnic culture in written form. As for clothing, the characteristics displayed at different historical stages are difficult to ascertain due to the lack of documentation" (Wuding County Political Consultative Conference, 2016). In contrast, "the Yi people have a long history of traditional writing and possess a vast and rich collection of Yi literature. Despite numerous destructions, there are still thousands of volumes of Yi literature written, copied, used, and circulated by the Luowu Yi in history, preserved by relevant institutions and private collections in the country" (Li, Li, Fu & Yang, 2022). Therefore, the clothing culture evolution of the Lisu people is challenging to trace due to the absence of written records. Comparatively, "Yi clothing has a history spanning thousands of years, with abundant evidence found in archaeological excavations and historical books" (Zhong & Zhou, 2006), and its development trajectory is outlined in various historical sources.

Regarding their origins, the ancestors of the Lisu people in Mixi Village and Laomuba Village of Wuding County originated from the Yalong River and Jinsha

River regions at the border of Sichuan and Yunnan, migrating to Wuding approximately 500-700 years ago (Wuding County Political Consultative Conference, 2016). In contrast, the Yi people are indigenous to Wuding, having lived there for generations. Their Luowu culture flourished for over 600 years (Mi, 2002). From the Yuan Dynasty to the Republic of China, the Luowu Yi people were the ruling class in Wuding and much of Yunnan, exerting broad cultural influence.

In terms of religious beliefs, both the Lisu ancestors and the Yi people shared an animistic worldview. The Lisu, like other Yi branch ethnic groups, revered the tiger as their primary totem, with both groups considering the black tiger as their totem (Yang, 1987).

Regarding the calendar system, the most famous traditional calendar of the Yi people is the "Ten-Month Solar Calendar." This calendar determines seasons based on stellar observations and marks days and years through a cycle of twelve zodiac animals (or "twelve beasts"). The Lisu calendar, called the "Ten-Month Floral and Avian Calendar," is their traditional and ancient calendrical system, marking days and years according to the cyclical patterns of flowers and birds.

2.2.4.2 Comparative Study of Costume Cultures

Wuding County is a region where multiple ethnic groups, including Han, Yi, and Lisu, coexist with the largest populations and the widest distribution. Over time, the Yi and Lisu people have typically lived together in mountainous areas, resulting in some shared characteristics in their clothing, reflecting a history of cohabitation and mutual influence.

-Clothing classification : traditional Lisu clothing is mainly divided into workwear and festival attire. The uniqueness lies in the design of workwear, created to adapt to harsh natural environments for hunting, beekeeping, and farming. This includes items such as straw hats, protective goggles, neck guards, rainproof capes, moisture-resistant cow and sheepskin jackets, frost-resistant cloth gloves, leather cases, hemp cloth cloaks, mountain grass shoes, hemp aprons, and sleeve covers (Wuding County Political Consultative Conference, 2016). The complex hierarchical structure and diverse tribal branches of ancient Yi society have led to a rich variety of clothing styles. To this day, modern Yi clothing still shows diversity due to the influence of different branches and scattered settlements, whereas modern Lisu clothing remains relatively uniform across various regions of Wuding County.

-Materials: the materials and their evolution in Lisu clothing are similar to those of the Yi. Ancient Lisu clothing primarily used self-spun hemp cloth, gradually transitioning to cotton and synthetic materials in more recent times. Traditional Yi clothing materials are more diverse, including wool products and firegrass cloth.

-Clothing styles: modern Lisu women's clothing is similar to modern Yi clothing, consisting of headwear, tops, aprons, belts, pants, and embroidered shoes. The decorative embroidery patterns on collars, shoulders, and cuffs are also similar. Additionally, modern Lisu women's clothing, like modern Yi women's clothing, is generally divided into youth and middle-aged/elderly attire.

Young Lisu women wear rooster hats, which resemble the hats of some Yi branches and are embroidered with similar rhododendron patterns. Their tops are brightly colored, and their pants come in various colors, such as blue, red, green, or white, making their attire more vibrant and colorful than Yi women's clothing.

Middle-aged Lisu women's headwear includes a blue headscarf topped with a "Sanze hat," similar to the headwear of the Luoluo, Micie, and Sani branches of the Yi in Wuding. Women over 60 wear a black headscarf called the "century hat," wrapped in a "人" shape with black cloth, which differs in shape from the Yi's black headscarves. The attire of middle-aged and elderly women is primarily blue and black, presenting a simple and elegant appearance (Wuding County Political Consultative Conference, 2016). In comparison, the clothing culture of the Yi is more diverse.

The biggest difference between Lisu and Yi clothing lies in the embroidery patterns. The collars of Lisu women's clothing are embroidered with twelve flowers, symbolizing the twelve months of the year and eternal spring, signifying good fortune. Overall, flowers and birds are common patterns in Lisu embroidery, linked to their ancient "Ten-Month Floral and Avian Calendar." Historically, the Lisu people used the cyclical patterns of flowers and birds to understand nature and determine agricultural times. Flowers and birds are the soul of Lisu embroidery, reflecting nature worship (Wuding County Political Consultative Conference, 2016).



Figure 29 Lisu Clothing: Auspicious Bird Motif
Source: Yang, 2016

The most unique pattern in Lisu women's clothing is the "auspicious bird," which comes in both three-dimensional and flat forms. The three-dimensional auspicious bird appears on the rooster hats of unmarried women, located above the ears on either side of the hat, with long ribbons hanging below. In contrast, Yi rooster hats are typically adorned with red thread balls representing rhododendrons on both sides. The flat auspicious bird pattern is mainly embroidered on the clothes. In Wuding County, no matter the region, the auspicious bird pattern is present in Lisu women's clothing, symbolizing that the auspicious bird brings happiness and well-being.(Figure29)

In summary, both the Yi and Lisu people are descendants of ancient Qiang and Rong peoples and have retained traces of black tiger worship to varying degrees (Yang, 1987). Historically, the Yi people are indigenous to Wuding, while the Lisu migrated from the Yalong River and Jinsha River regions of Sichuan about 600-700 years ago. Modern clothing of both ethnic groups shows similarities in basic styles, embroidery techniques, and decorative styles, but there are also two notable differences:

Firstly, the types of clothing differ. Lisu clothing in the Wuding area is relatively uniform, while Yi clothing is varied, with differences among branches and regions within the same branch.

Secondly, the styles of embroidery patterns differ. Although both ethnic groups share similar patterns, such as rhododendrons, camellias, and human dance figures, their overall styles are distinct. Lisu clothing is linked to the ancient "Ten-Month Floral and Avian Calendar," with flowers and birds as the main embroidery patterns, reflecting nature worship. Yi clothing, on the other hand, embodies more complex and diverse elements of nature worship, totem worship, and traditional philosophy.(Figure 30)



Figure 30 Lisu clothing
Source: Lu&Song, 2016

2.3 Related Theories

2.3.1 Theories of Intangible Cultural Heritage Protection

The concept of "intangible cultural heritage" emerged in the late 20th and early 21st centuries, driven by UNESCO's initiatives to protect the world's cultural heritage. "Intangible cultural heritage refers to the practices, representations, expressions, knowledge, skills—as well as the instruments, objects, artifacts, and cultural spaces associated therewith—that communities, groups, and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature, and their history, providing them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity." (UNESCO, 2003).

In October 2003, UNESCO adopted the "Convention for the Safeguarding of the Intangible Cultural Heritage." In August 2004, China became the sixth signatory to the convention. In March 2005, the State Council of China issued the "Opinions on

Strengthening the Protection of Intangible Cultural Heritage in China," along with corresponding protective measures. Consequently, the term and concept of "intangible cultural heritage" entered the official language of China (Wu, 2010).

According to the "Opinions on Strengthening the Protection of Intangible Cultural Heritage in China" issued by the Chinese government, "intangible cultural heritage" refers to the various traditional cultural expressions and practices (such as folk activities, performing arts, traditional knowledge and skills, and the related tools, objects, and handmade artifacts) and cultural spaces that are closely related to the lives of people from all ethnic groups and have been passed down through generations (State Council General Office, 2005).

The UNESCO Convention requires member states to formulate inventories of intangible cultural heritage based on their national circumstances. The establishment of the "National Intangible Cultural Heritage List" by the State Council of China is a measure to fulfill the obligations of a signatory state to the convention (China Intangible Cultural Heritage Network, n.d.). In June 2007, China announced the first batch of national intangible cultural heritage items, gradually establishing a four-tiered system of national, provincial, municipal, and county-level representative works of intangible cultural heritage (State Council General Office, 2005).

In the "Universal Declaration on Cultural Diversity" (2001) issued by UNESCO, it is stated: "Cultural diversity is the common heritage of humanity. Culture takes diverse forms across time and space. This diversity is embodied in the uniqueness and plurality of the identities of the groups and societies making up humankind. Cultural diversity is as necessary for humankind as biodiversity is for nature. It is a source of exchange, innovation, and creativity; it is as necessary for humankind as biodiversity is for nature." The declaration also emphasizes: "Cultural diversity widens the range of options open to everyone; it is one of the roots of development, understood not simply in terms of economic growth, but also as a means to achieve a more satisfactory intellectual, emotional, moral, and spiritual existence." (UNESCO, 2001)

The Yi costumes of Chuxiong were designated in 2014 as a representative project of China's National Intangible Cultural Heritage. As an integral part of this project, the Wuding Yi costumes meet the evaluation criteria for representative intangible cultural heritage, showcasing the exceptional creativity of the Yi people and their distinctive local cultural characteristics. At the same time, they hold significant value in the fields of history, art, ethnology, sociology, and anthropology.

2.3.2 Cultural Sustainability Theory

2.3.2.1 Theoretical Foundation

Sustainable development is the dominant development model of our era. In September 2015, the United Nations adopted the global Sustainable Development Goals (SDGs) at its headquarters in New York, forming the core part of "Transforming Our World: the 2030 Agenda for Sustainable Development." This agenda includes 17 sustainable development goals, described as "a plan of action for people, planet and prosperity" (United Nations, 2015). It is based on the three pillars of sustainable development: economic, social, and environmental (Krannich & Reiser, 2021).

In the book "Cultural Sustainability" (Meireis & Rippl, 2019), the authors point

out that in the sustainability triangle model, the cultural dimension is often overlooked and propose the concept of cultural sustainability. They state, "It has become clear that in existing discourses, culture - and with it cultural sustainability - has been conceptualized within narrow frameworks focusing solely on questions concerning cultural diversity, indigenous cultures, the significance of local identity and the role of creativity for community development" (Meireis & Rippl, 2019). Values are at the core of this term.

The authors of this book also propose a dual impact of cultural sustainability. "Firstly, ecological, economic, and social questions of sustainability can only be understood within the horizon of culture, rooted as they are in the ideas, imagery, and concepts employed to describe sustainability. Secondly, and following from this observation, cultural sustainability is a topic in itself, as it necessitates research into traditions, modes of perception, methods of cognition, the conceptualization of knowledge, and the concept of sustainability itself" (Meireis & Rippl, 2019).

2.3.2.2 Cultural Heritage and Sustainable Development

Cultural sustainability requires considering the past to address issues related to cultural memory, cultural heritage, and institutions such as archives, libraries, and museums as preservation tools (Meireis & Rippl, 2019). This involves exploring the relationship between cultural heritage and sustainable development. Tolina LouLansk (2007) links cultural heritage (CH) with sustainable development (SD) by adopting an interdisciplinary, integrative research approach, identifying common principles and goals within these two concepts, and proposing a hybrid conceptual interface model. This forms an integrated conceptual framework. "The here-discussed hybrid conceptual interface of value-resource-capital is suggested as a possible integrative unit to be incorporated as a focal point/fundamental part in the construction of a common conceptual framework of CH and SD" . (Figure 31)

The concept of capital expands the understanding of cultural heritage. Defining cultural heritage as cultural capital from a long-term perspective has two forms: tangible (buildings, sites, artifacts, etc.) and intangible (intellectual capital in the form of ideas, practices, beliefs, and values, as well as artistic works like music and literature). Cultural heritage is viewed as a multivalent resource, serving as a cultural, political, and economic resource. In terms of development, cultural heritage is further defined as a "development asset" that can and has been used to achieve various economic, environmental, social, and community development goals.

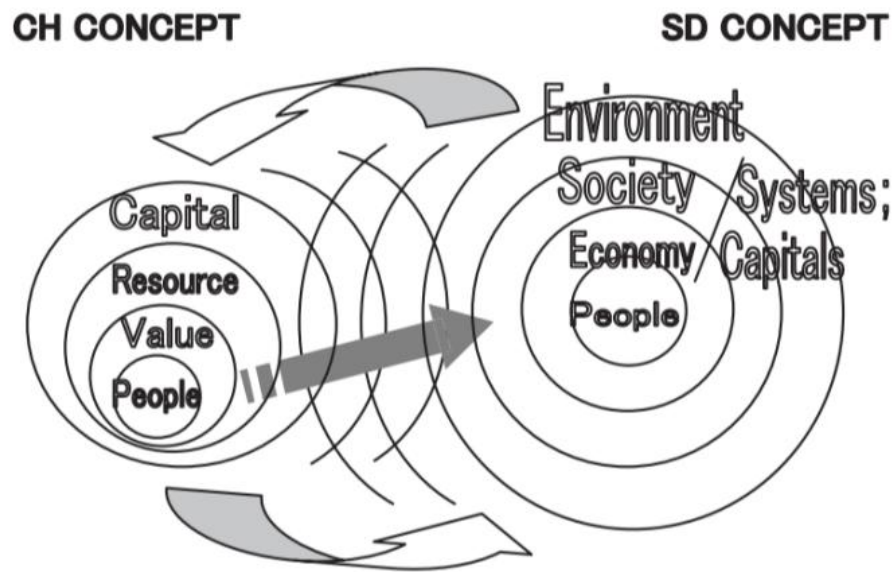


Figure 31 Mapping the Conceptual Interface between CH and SD
Source: LouLanski, 2007

2.3.2.3 Cultural Heritage Preservation Strategies

In exploring cultural heritage preservation strategies, Ioannis Poullos (2014) proposes a strategy that promotes local community empowerment and sustainable development: the living heritage approach. This approach introduces a concept of heritage and preservation different from a material-based approach and a values-based approach (a new "WHAT"), highlights the primary role of a "core community" (a new "WHO"), and suggests a different method of heritage preservation (a new "HOW").

Firstly, regarding the concept of living heritage, the researcher states: "The concept of living heritage is inextricably linked to the concept of continuity, and in particular: primarily the continuity of the heritage's original function – the purpose for which heritage was originally intended; the continuity of the community's connection with heritage; the continuity of the care of heritage by the community as expressed through (traditional) knowledge, management systems, and maintenance practices; and the continuous process of evolving tangible and intangible heritage expressions in response to changing circumstances – in this sense, change is embraced as a part of the continuity" (Poullos, 2014). In summary, continuity is the main characteristic of living heritage, manifested in the continuity of function, the continuity of connection with the community, the continuity of community care, and the evolving expressions of cultural heritage. More specifically, the purpose of adopting a living heritage approach to preservation is primarily to maintain continuity. (Figure 32)

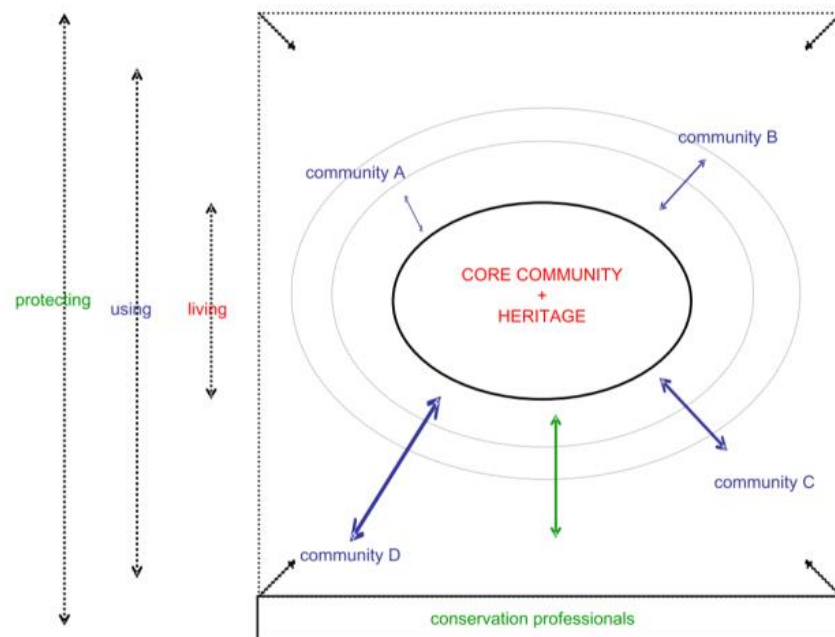


Figure 32 A living heritage approach

Source: Poullos, 2014

In the living heritage approach, the core stakeholders are the "core community." The "core community" refers to a specific group within the community that creates and sustains the living heritage, preserving its original function and maintaining its original connection over time. They consider the heritage to be an important part of their contemporary life, contributing to their identity, pride, self-esteem, structure, and well-being. They have a strong sense of ownership and guardianship over the heritage and are viewed as an inseparable part of it. "A living heritage approach is a clearly community-based approach. The core community is given the primary role in the conservation process. The core community does not simply participate in the process but is actively empowered; it has the ability to set the agenda, take decisions and retain control over the entire process" (Poullos, 2014). In this preservation strategy, the role of professionals is to provide support and guidance to the core community.

The cultural heritage preservation methods in the living heritage approach primarily include: first, empowerment of the community, using a bottom-up approach that places heritage preservation within the context of continuity. Second, the focus of preservation shifts from tangible materials to maintaining the (intangible) connection between the community and the heritage. Third, heritage is not viewed as a relic of the past but as an integral part of the current life of the community and is preserved as such.

2.3.3 Cultural Anthropology Theory

Clifford Geertz (2014), one of the most significant cultural anthropologists of the 20th century, deeply explored the understanding and interpretation of culture in his work "The Interpretation of Cultures."

Geertz defined "culture" as follows: "The concept of culture I advocate is essentially a semiotic one. I view culture as a web of meanings woven by humans themselves." He emphasized that culture is a system of symbols through which people

understand and interpret the world. Culture also serves as a means to describe social phenomena, aiding in understanding behaviors and thought processes in different cultural contexts.

In terms of cultural analysis, Geertz believed that "cultural analysis is an interpretive science in search of meaning." Its task is to categorize and discern structures of signification, while also determining their social foundations and implications. He emphasized that the goal of analysis is to conjecture and appraise the meanings within a culture, leading to interpretive conclusions.

Methodologically, Geertz emphasized "thick description" (a concept borrowed from Gilbert Ryle), meaning that researchers need to delve into the underlying meanings and cultural backgrounds behind cultural phenomena, rather than just surface descriptions. He also stressed the application of ethnography, which involves establishing connections, selecting collaborators for research, making recordings, documenting genealogies, creating field maps, keeping diaries, etc. Fieldwork, including interaction with locals, participation in their rituals and activities, and recording of social events, family life, and everyday situations, is fundamental to ethnography.

Finally, there is the interpretation of materials generated from field research. Researchers are required to place their subjects within their own everyday systems to understand the norms of the culture. When faced with complex conceptual structures, researchers must endeavor to grasp these structures and then translate and interpret them to better understand the meanings of the culture. Scientific imagination is a crucial tool for validating interpretations.

Geertz also elaborated on the impact of culture on individuals, viewing culture as a "control mechanism." Human thought is formed through communication within meaningful symbolic symbols, including vocabulary, gestures, graphics, music, etc. Cultural patterns are seen as fundamental conditions of human existence, with individual thoughts, values, actions, and emotions being products of culture. (Geertz, 2014)

This study aims to deeply explore the cultural connotations of Chuxiong Yi ethnic clothing patterns and their protection and dissemination. Geertz's theories provide a theoretical foundation and methodological guidance for this study. His emphasis on "culture as a system of symbols" and the method of "thick description" in cultural analysis will guide this study to combine semiotics theory to deeply analyze the symbolic meanings and cultural background of Yi traditional clothing patterns. Additionally, Geertz's views on the impact of culture on human thought and emotions will support this study in revealing how pattern culture influences people's thinking and feelings and exploring its inheritance and protection through new media dissemination.

2.3.4 Semiotics Theory

The renowned French structuralist thinker and semiotician Roland Barthes (1990) elaborated on the basic theories and research methods of semiotics in his work "Elements of Semiology." Barthes' theoretical framework provides a solid theoretical basis and methodological guidance for studying and interpreting the symbolic system of Chuxiong Yi ethnic embroidery patterns.

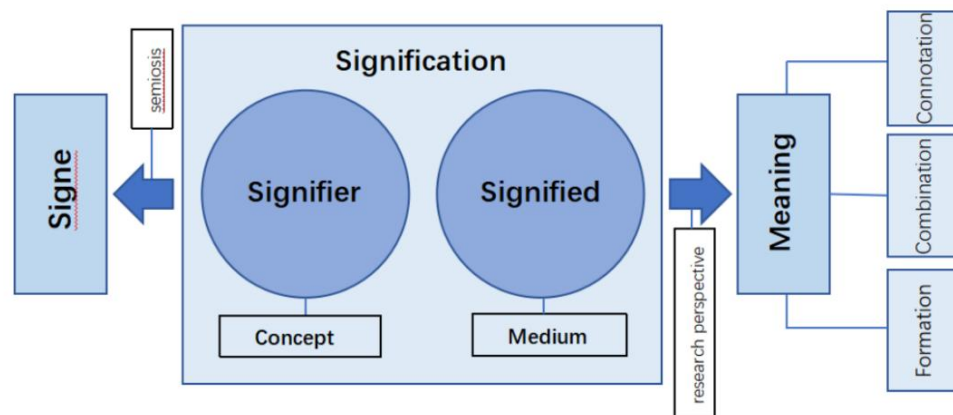


Figure 33 Composition of Sign

Source: by the author

Firstly, the constitution of a sign in semiotics involves two elements: the signifier (signifiant) and the signified (signifie). The "signifier" is the material form of the sign, such as sound, objects, or images, serving as the intermediary for conveying meaning. The "signified" is the meaning content represented by the sign, a mental representation of "something," known as the concept. These two elements are combined into a sign through the process of signification. The focus of semiotics research is to analyze the signifier, signified, and the process of signification in a sign system. (Figure 33)

Secondly, a sign system encompasses two dimensions: connotation and denotation. "Connotation" refers to the constituent elements of a sign system and their interrelationships. For example, in a clothing sign system, elements like patterns, colors, materials, and styles, and their combinations, constitute the connotation. "Denotation," on the other hand, refers to the range of meanings that a sign system can represent or express. For instance, a clothing sign system is often used to express the wearer's identity, status, and other social meanings. Connotation determines the expressive capacity of a sign system, while denotation reflects the application scope of the connotation. Together, they determine the function and characteristics of a specific sign system.

Regarding research methodology, Barthes emphasized the principle of relevance, i.e., analyzing the object from the perspective of its signifying activity. This requires defining a "corpus" of study material, followed by a comprehensive analysis of these materials, establishing a system by discovering the uniformity of signs. The uniformity of a sign refers to the repetition of the same sign within a sign system, expressing the same meaning in different contexts. This repetitiveness forms the basis of that sign system.

Specific research methods and steps include:

Defining the corpus: When selecting study materials, ensure both the breadth and homogeneity of the materials, including substance and temporal homogeneity. Defining the corpus involves defining and collecting representative and homogeneous materials, which become the historical "cross-section" of the study.

Comprehensive analysis of the materials: This includes identifying the smallest units of meaning in the sign system, exploring the rules of combination among these units, and analyzing the signifier, signified, and signification process to establish a

connotation system and reveal systematic patterns. Finally, reveal the structure, meaning-generation process, and historical evolution of the sign system.

These research methods aim to reveal the temporal development of a specific sign system and the historical changes in its forms. (Figure 34)

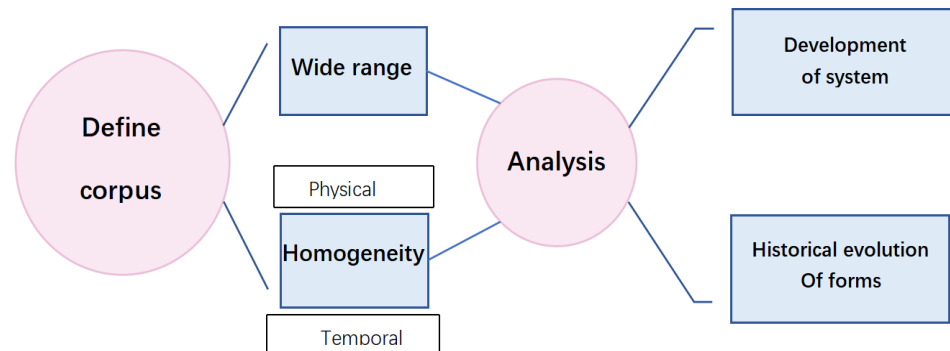


Figure 34 Semiotic research methods

Source:by the author

Barthes' semiotics theory helps this study to clearly define the objectives and paths for researching the cultural aspects of Chuxiong Yi ethnic clothing embroidery patterns. As a typical sign system, the focus of the study on Yi ethnic clothing embroidery patterns is first on the in-depth analysis of the signifier, signified, and signification process of pattern symbols. Additionally, the study explores the connotation and denotation of the pattern sign system. Connotation concerns the constituent elements and their interrelationships within the pattern sign system, while denotation involves the range of meanings that the pattern system can represent or express.

Following Barthes' semiotics research method, this study also clarifies the steps for the foundational research part: First, defining the corpus of study: The researcher selected representative Yi costumes from Wuding as the research materials. Following the principles of breadth and homogeneity, a comprehensive collection of costume materials from various Yi subgroups over nearly 100 years since the Republican era was gathered. By analyzing the commonalities within these costumes, the aim was to identify overarching patterns within the costume system.

Second, conducting a comprehensive analysis of the materials: The study first identifies the smallest units of meaning within the semiotic system and explores the commonalities and specificities of costume semiotic systems across different subgroups. This analysis further reveals the characteristics of the Wuding Yi costume system and interprets its cultural connotations.

2.3.5 Participatory Design Theory

2.3.5.1 Theoretical Foundation: Participatory Action Research

The methodology of participatory design originates from participatory action research (Spinuzzi, 2005). "Participatory action research (PAR) is a scholar-activist research approach that brings together community members, activists and scholars to co-create knowledge and social change in tandem" (Kendon, Pain, & Kesby,

2007) . “PAR is a collaborative, iterative, often open-ended and unpredictable endeavour, which prioritizes the expertise of those experiencing a social issue and uses systematic research methodologies to generate new insights. PAR is aimed at addressing specific human and social problems, with the goal of generating feasible local actions” (Cornish & Breton, 2023).

As a named methodological paradigm, PAR gained legitimacy and recognition in the 1980s. It originated from popular development education led by scholars from the Global South (Fals-Borda, 1987) and was adopted in the international development field dominated by the Global North.

In their study, Cornish & Breton (2023) summarized four key principles of PAR based on the research of several scholars:

The authority of direct experience: PAR values the expertise generated through experience.

Knowledge in action: PAR emphasizes learning from the experience of change, which generates new knowledge.

Research as a transformative process: The research process is as important as the outcomes. PAR aims to create empowering relationships and environments during the research process.

Collaboration through dialogue: The strength of PAR comes from utilizing the diverse expertise and abilities of its collaborators through dialogue.

This study also outlined six key design considerations for PAR projects: Building relationships; Establishing working practices; Establishing a common understanding of the issue; Observing, gathering and generating materials; Collaborative analysis; Planning and taking action. Each PAR team may address these factors in different ways and with different priorities.

The results of PAR are mainly reflected in three aspects: knowledge, action, and capacities. PAR establishes both local knowledge and conceptual knowledge. PAR projects can generate actions across a broad spectrum (from "small, local" to "large, structural") and on different time scales. Ideally, these actions lead to substantial changes in community power (Cornish & Breton, 2023).

2.3.5.2 Models in Participatory Design Models

Participatory Design (PD) has evolved from an early technical tool emphasizing “user involvement in decision-making” to a social innovation approach in which multiple stakeholders co-create value (Yasuoka-Jensen & Kamiyama, 2016). This shift not only broadens the context of design but also enriches the forms and depth of participation. Yasuoka-Jensen and Kamiyama (2016) proposed four typical participatory models to explain how participation is practiced in different contexts: Professional Collaboration, Collective Creativity, User Research, and Collective Learning by Doing.

The first model, *Professional Collaboration*, emphasizes knowledge sharing among professionals to improve products or services. It is characterized by clear time constraints and defined output goals. The second model, *Collective Creativity*, fosters innovative service generation through the collective intelligence of participants from diverse disciplines and backgrounds. The third model, *User Research*, focuses on understanding user needs and behaviors, providing authentic insights to inform design

solutions. However, these three models have limitations in promoting the continuity and sustainability of community culture.

In contrast, the fourth model, *Collective Learning by Doing*, places greater emphasis on long-term engagement, contextual relevance, and empowerment. It relies on the formation of a Community of Practice, promoting participants' development of agency and design literacy through ongoing practice, experience, and experimentation. Its outcomes extend beyond products, services, or prototypes to include sustainable community mechanisms and cultural foundations.

Participatory Model	Key Features	Focus	Limitations
Professional Collaboration	Knowledge sharing among professionals	Product/service improvement	Short-term, goal-focused
Collective Creativity	Multidisciplinary co-creation	Innovation generation	Limited cultural sustainability
User Research	Understanding user needs	Informing design	Limited community empowerment
Collective Learning by Doing	Long-term practice, empowerment	Community learning & sustainability	Requires continuous engagement

Table 1 Comparative Overview of Participatory Design Models
Source: Yasuoka-Jensen & Kamihira, 2016

This model closely aligns with the present study. On one hand, the sustainable inheritance of Wuding Yi costume culture requires long-term, authentic community participation rather than short-term creativity or user research. On the other hand, this study establishes a practice-based community through the development of an educational program and accompanying teaching resources, involving multiple stakeholders, including community members, university students and faculty, and external visitors. This ongoing, practice-based learning process not only facilitates knowledge sharing and cultural empowerment among community members but also enhances cultural understanding among external participants, thereby laying a foundation for the dynamic transmission of costume culture and the sustainable operation of service models.(Table 1)

Therefore, adopting Collective Learning by Doing as the theoretical framework helps elucidate the mechanisms of community empowerment, knowledge co-creation, and cultural sustainability in this study, providing robust theoretical support for the research.

2.3.5.3 Methods in Participatory Design

Hansen et al. (2019) point out that the distinctive feature of Participatory Design (PD) does not lie in individual participation activities themselves, but in establishing and maintaining participatory processes, empowering participants, and sustaining the effects. In PD practice, commonly used PD Methods include Field Studies, Workshops, Prototyping, and Evaluation, each of which plays a unique role in

knowledge generation, skill development, and community empowerment.

Field Studies are the starting point of PD, primarily involving the collection of data through qualitative methods such as observation, interviews, and user analysis, in order to understand the current practices and contexts of potential users or communities (Hansen et al., 2019). The outputs include domain knowledge and problem analysis, providing an informational foundation and problem definition for subsequent design.

Workshops are intensive design events that bring together participants from diverse backgrounds to share knowledge about current practices and envision future practices (Hansen et al., 2019). The outputs of workshops include design ideas and visions for the future, as well as networks among participants, facilitating the sharing of knowledge and experience.

Prototyping emphasizes the collaborative creation of modifiable design solutions through hands-on activities and testing in simulated or real contexts (Hansen et al., 2019). Prototypes serve not only as tools for knowledge generation but also as means for participants to experience and explore potential future practices.

Evaluation involves participants assessing both the design outputs and the effects of the design process, covering multiple dimensions such as personal benefits, skill development, improvements in work conditions, and the discovery of new opportunities (Hansen et al., 2019).

Participatory design can be seen as an attempt to understand and involve people throughout the design process with the intention of creating more appropriate, applicable, and user friendly products (Wilkinson, 2011). The research aims to better understand the diverse needs and requirements of the Yi community members by involving them in the process of acquiring knowledge within the design community. The goal is to use this knowledge to guide future knowledge transfer as well as the design, development, and production of products or tools, making them more accessible and usable to a wider audience. All participants in the research can be considered members of a participatory design group, capable of influencing various aspects of the design process. Wilkinson proposed a model for the Participatory Design Process (Figure 35).

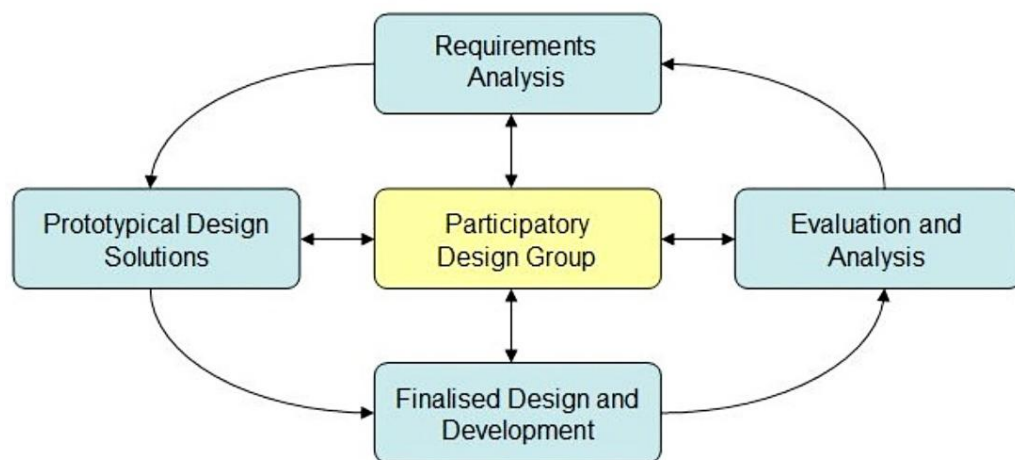


Figure 35 Participatory Design Process
Source: Wilkinson, 2011

2.4 Case Study

This study examines seven representative cases encompassing diverse contexts, including costume culture preservation, community co-creation, intangible cultural heritage revitalization, and localized sustainable development. These cases span different regions and cultural backgrounds—such as China, Thailand, the United Kingdom, and Taiwan—and demonstrate the varied applications of Participatory Design (PD) and interdisciplinary collaboration in cultural transmission and community development. Insights drawn from these cases provide valuable references for exploring the sustainable inheritance and innovation of Wuding Yi costume culture.

2.4.1 Qiang Costume Identity Revival : A PD Perspective

Chen and Suwanthada (2024), in their study “Qiang Costumes in Maoxian, Sichuan Province: The Revival of Chinese Minority Identity for Application in Design,” explored the impact of the 2008 earthquake on the transmission of Qiang costume culture. The disaster accelerated the loss of traditional lifestyles, posing challenges to both ethnic identity and traditional products. The study analyzed the characteristics and cultural meanings of Qiang costumes and designed derivative products based on costume elements to explore new approaches for cultural preservation.

A mixed-methods approach was employed, emphasizing community participation and multi-stakeholder collaboration as key factors in the design process. Through Participatory Design (PD), the products maintained cultural authenticity while addressing market demands and consumer preferences. Data collection included surveys, interviews, observations, and focus groups, while data analysis combined triangulation, typological analysis, and inductive analysis. The design process began with field research, followed by sketching product concepts based on consumer preferences. These sketches were evaluated by experts, leading to the creation of prototypes, which were further tested for acceptance among visitors.

The study found that integrating Qiang costume elements into modern product design can promote both cultural revival and economic development. Community involvement, stakeholder collaboration, and market research were identified as critical to the success of the design process.

2.4.2 Ethnic Tourism Costume Development in Mae Hong Son: Lessons from PD Workshops

Sarobol (2014), in the study “Costume Development Model for Tourism Promotion in Mae Hong Son Province, Thailand,” analyzed the traditional costume styles of two ethnic groups in the Pha Bong community—the Tai Yai (Shan) and Sakor Karen—with the aim of developing new ethnic costumes that reflect community identity and support tourism development in Mae Hong Son Province.

The study employed Participatory Design (PD) methods, with a particular emphasis on the central role of workshops in knowledge co-creation and skill transfer. Multiple data collection methods were used, including focus groups, in-depth

interviews, literature review, and SWOT analysis. In several participatory workshops, experienced community members from both ethnic groups led discussions on costume styles, natural dyeing and weaving techniques, embroidery and sewing skills, as well as the creation of symbolic costumes. These workshops not only generated rich qualitative data but also facilitated interaction among community members and the transmission of cultural knowledge.

Based on the findings, despite the distinct identities, abundant resources, and ancestral wisdom of the two ethnic groups, the study ultimately designed a set of new costumes that fused Sakor Karen iconic elements with Tai Yai costume styles, reflecting the community members' lifestyles, beliefs, and values. The designed costumes not only showcased the unique identity of the communities but also made full use of local materials and traditional craftsmanship.

2.4.3 Living Heritage Conservation in Phuket, Thailand: PD Practical Insights

Poulios (2014), in the study "*Discussing strategy in heritage conservation: Living heritage approach as an example of strategic innovation*," elaborated on the Living Heritage Approach and used the Luk Lan Muang Phrae community in Phuket, Thailand, as a case to demonstrate how community participation can support the sustainable conservation of cultural heritage. The project was grounded in the community's connection to heritage and its actual needs and concerns, and implemented multi-level cultural conservation actions, including:

Awareness and Education: Conducting interviews to understand the significance of local houses and cultural assets, and organizing educational activities for children to promote local heritage conservation, thereby restoring community pride and cultural identity.

Transmission of Traditional Knowledge and Skills: Drawing on existing community management practices, maintenance methods, and artisanal skills, a wide range of activities were carried out, such as rewarding homeowners for maintaining their houses, establishing museums and libraries, and protecting city walls.

Integration of Cultural and Economic Practices: Community members were encouraged to engage in cultural preservation through activities such as cooking local dishes, cultivating crops, and producing and selling pottery and puppets, generating both cultural engagement and economic value.

Multi-level Collaboration: The community established a local heritage management committee, "Descendants of Phuket," and built collaborative networks with local, regional, national, and international heritage organizations to enable resource sharing and sustainable management.

In summary, this Phuket case highlights the significance of community participation, activation of traditional knowledge, economic incentives, and multi-level collaboration, offering both methodological and practical insights for this research.

2.4.4 Revival of the Fashion Industry in Waltham Forest: Insights from Community Co-Creation

Mazzarella and Black (2023), in their study "*Fashioning Change: Fashion Activism and Its Outcomes on Local Communities*", examined the Waltham Forest

community in northeast London as a case to explore how community co-creation and Participatory Action Research (PAR) methods can foster social innovation and skill development. This diverse community, historically reliant on the fashion and textile industry, currently faces challenges such as youth poverty, skill shortages, and the decline of local manufacturing.

Using a PAR approach, the study designed and implemented a series of community-oriented co-creation activities. Through interaction, collaboration, and collective decision-making, residents were directly involved in design and production practices, enhancing their capabilities, confidence, and social connections while fostering a sense of community and cultural identity. Specific activities included various community workshops and projects, such as co-making clothing, craft skill training, and upcycling design initiatives, through which participants gained practical skills and shared knowledge.

The study applied the International Association for Public Participation (IAP2, 2014) public participation spectrum to categorize activities into different levels of community engagement: awareness-raising activities, citizen participation activities, collaboration-promoting activities, and empowerment activities.

Findings indicate that long-term, practice-oriented participatory co-creation activities not only equip community members with practical skills but also strengthen social agency and willingness to engage, establishing mechanisms for sustained participation in cultural and social innovation. This approach emphasizes process-driven engagement, empowerment mechanisms, and multi-stakeholder co-creation, providing an effective pathway for knowledge transfer, skill development, and sustainable community development.

2.4.5 Uyghur Intangible Heritage Preservation: A PD Approach

Salvesen and Keitsch (2021), in their study “*Preservation And Promotion Of Intangible Cultural Heritage: A Participatory Design Approach*”, focus on the risk of disappearance faced by Uyghur culture and explore methods for safeguarding and promoting intangible cultural heritage through participatory design. The study aims to provide solutions for the cultural preservation and promotion of approximately 2,500 dispersed Uyghurs in Norway, while also transmitting Uyghur intangible cultural heritage to the local society.

The research adopts a participatory design (PD) approach, involving a literature review and theoretical analysis, the implementation of a community-based PD project, and the development of final design concepts. Data collection methods include interviews and focus groups, intended to guide project direction, facilitate user participation in decision-making, and support concept development. During the study, five types of cultural concepts were proposed and evaluated, with a cookbook ultimately selected as the main solution. This was disseminated through printed booklets and a website, ensuring that cultural content could be accessed by both heritage bearers and the wider society.

The study emphasizes that the sustainable preservation of intangible cultural heritage depends on its living continuation and requires flexible adaptation according to the time and context of the cultural bearers. Participatory design not only provides concrete methods and tools but also highlights the central role of community members and heritage bearers in cultural preservation and social sustainability. This case offers

key insights for the present research by demonstrating how participatory design can integrate cultural knowledge generation, practice, and dissemination, ensuring the sustainable realization of both cultural inheritance and social value.

2.4.6 Fostering Landscape Identity: Insights from Interdisciplinary Collaboration

Marques, Grabasch, and McIntosh (2021), in their study “Fostering Landscape Identity Through Participatory Design With Indigenous Cultures of Australia and Aotearoa/New Zealand”, examined how participatory design methods can promote community sustainability and cultural identity by using indigenous communities in Aotearoa and Australia as case studies.

The research adopted a design-led participatory action research approach, emphasizing collaboration and interdisciplinary engagement. In two landscape design projects, design professionals, university students, and local community members worked closely together to co-develop solutions:

Murujuga Cultural Management Plan: In the Murujuga project in Western Australia, landscape design professionals collaborated with the Murujuga community to develop a long-term plan for cultural and resource management. Methods included collecting cultural knowledge, mapping values, and fostering intergenerational and cross-cultural knowledge exchange. Design explorations drew from indigenous art relevant to the community, creating conceptual sketches and referencing similar precedent projects to inspire shared understanding.

Akoranga Wairarapa Moana: In the Akoranga project in New Zealand, twenty landscape architecture students from Victoria University of Wellington collaborated with members of the Ngāti Kahungunu ki Wairarapa tribe to design sustainable and culturally sensitive responses to river flooding. The process included site visits, meetings, workshops, and focus groups. Students used visual design methods to communicate solutions, incorporating colors, light, shadow, and natural elements to convey cultural values and a sense of belonging.

Data collection involved semi-structured interviews, cross-group focus groups, workshops, and meetings, engaging stakeholders including design professionals, students, community members, and government officials. This case demonstrates that through collaboration and interdisciplinary participation, design professionals, academia, and local communities can co-create sustainable and culturally sensitive solutions, offering valuable insights for applying participatory design in cultural and community development.

2.4.7 Revitalizing Weaving Practices in Taiwanese Indigenous Communities: Insights for Localized Sustainable Community Development

Yeh, Lin, and Lai (2021), in their study “Taiwanese Indigenous Cultural Heritage and Revitalization: Community Practices and Local Development”, focus on Taiwanese Indigenous communities and propose a localized sustainable community development framework grounded in traditional, cultural, and ecological knowledge. This framework not only explores pathways for cultural preservation but also emphasizes community agency and creativity in heritage practices and development models, offering a multidimensional perspective on cultural sustainability.

The study integrates postcolonial theory and participatory action research

methods, using fieldwork, participatory observation, and in-depth interviews to systematically analyze the dynamic relationships between cultural heritage, community practices, social structures, and economic development. It particularly investigates how cultural heritage is reconstructed and endowed with new value within communities.

Among the six sub-projects, the cases centered on revitalizing traditional weaving practices are particularly noteworthy:

(1) Shanli Village: Reconstructing Migration Memories and Ethnic Identity through Festivals

The community organizes a periodic “Ramie Festival” to showcase the processes of harvesting ramie fiber, spinning, and weaving, alongside sharing migration histories and ethnic songs. These festivals reinforce collective memory and identity while serving as an emotional bridge that draws migrant villagers back to participate in community life.

(2) Shueiyuan Village: Transforming Domestic Labor into Community Cultural Capital

Local women formed learning groups where they weave together and share memories of their mothers and grandmothers. This collective activity transforms weaving from a domestic survival skill into a community-wide cultural practice. As tourism developed, weaving further evolved into marketable cultural capital, generating economic benefits and empowering women to move from marginalized positions to central roles in community development.

This research highlights a community-driven, culturally grounded approach to sustainable development, integrating heritage preservation with economic growth and identity reconstruction. The cycle of “cultural practice—community identity—economic transformation” shows that heritage preservation is a dynamic re-creation process, offering valuable methodological and conceptual insights for the sustainable revitalization of cultural practices.

2.5 Pilot research

To validate and update the research problem, a pilot study was conducted in Wuding County, aiming to gain a comprehensive understanding of the current state of Yi costume culture and the sustainability challenges it faces.

2.5.1 Methods of Pilot Research

-A range of research tools was employed, including field investigation, participatory observation, semi-structured interviews, focus group discussions, document analysis, and artifact analysis, to systematically collect information on the culture and its current modes of transmission. Specific methods were as follows:

-Observation: Field observations were conducted in daily life, cultural festivals, and community events in four representative Yi villages in Wuding County, documenting the processes of costume making and use, community interactions, and cultural practices.

-Interviews: In-depth interviews were conducted with 28 key informants, including 18 villagers, 3 officially recognized Yi costume culture inheritors, 3 experts, and 4 government officials, collecting multi-perspective information on costume-

making skills, cultural knowledge, and the current state and challenges of cultural transmission.

-Focus Groups & Document Analysis: Community focus group discussions and analysis of relevant policies and archival documents were used to map cultural transmission mechanisms and the development status of the local industry.

-Artifact Analysis: Traditional costumes and embroidery works were systematically recorded and analyzed to extract key craftsmanship features and cultural meanings.

Data analysis employed Thematic Analysis, Content Analysis, and Visual Analysis to organize, synthesize, and interpret the qualitative information, enabling the identification of core issues and the construction of a structured knowledge framework for Yi costume culture.

2.5.2 Fact Findings

Against the backdrop of the development of the Yi embroidery industry in Chuxiong Prefecture, the government has promoted the support of the Yi embroidery industry since 2003 and further strengthened policy support in 2013, aiming to integrate economic development with the protection of Yi costume culture (A, 2017). In most counties, these policies have achieved phased success: from a cultural perspective, the development of the embroidery industry contributes to the protection and transmission of Yi embroidery culture; from an economic perspective, it provides income and employment opportunities for Yi women in mountainous areas; from a social perspective, home-based employment promotes family harmony and well-being. By 2021, the annual output value of the Chuxiong embroidery industry had increased to RMB 200 million, with 538 business units and 57,000 embroiderers (Li, 2022). Within this context, training programs organized by the government and enterprises, the official recognition of cultural inheritors, and initiatives such as “Yi Costume Culture in Schools” have become important channels for cultural transmission.

However, field investigations indicate that Wuding County lags significantly in all three modes of cultural transmission. First, industry development is delayed: the Yi embroidery industry in Wuding County started relatively late, with attention to costume culture protection and utilization beginning only in 2019. The subsequent three-year COVID-19 pandemic further constrained industry development, leaving the local embroidery industry still at an early stage. According to local government officials and practitioners, local artisans and enterprises lack the capacity to transform costume cultural resources into innovative designs and sustainable practices, which hinders the dynamic transmission and innovative development of the culture.

Second, there is a shortage of cultural inheritors: as of January 2024, three of the six officially recognized inheritors are no longer active due to age or illness, leaving only three, who are elderly and have limited capacity for transmission.

Third, traditional transmission pathways are disrupted: traditional transmission primarily relies on family-based, master-apprentice, and peer-to-peer learning among embroiderers. Historically, embroidery and costume making were essential survival skills for Yi women, with girls learning from their elders from an early age (A, 2017). However, with the outmigration of young people for education and work, the family- and community-based traditional transmission patterns have been disrupted. As a

result, younger generations lack costume-making skills and cultural understanding, leading to a decline in cultural identity and weakening the sustainability of the culture. Moreover, no formal school courses or systematic teaching on Yi costume culture have been established, leaving young people with very limited opportunities to engage with their cultural heritage.

2.5.3 Research Problems

Based on the analysis of field investigation data, this study identified the main problems in the transmission of Yi costume culture in Wuding County:

(1) Investor-oriented benefits prioritize economic returns over cultural wisdom: Existing policies and industry development focus more on economic gains while neglecting the transmission of cultural knowledge and heritage.

(2) Cultural identity crisis: Younger generations lack the skills and cultural understanding, resulting in decreased recognition of and engagement with traditional costumes.

(3) Weakened cultural sustainability: Traditional family- and community-based transmission mechanisms are disrupted by outmigration and social changes, failing to maintain stable intergenerational transfer.

Additionally, modern educational and transmission mechanisms are insufficient, with a lack of systematic school curricula, structured learning pathways, and multi-stakeholder collaborative preservation models, further constraining the long-term sustainability of the culture.

In summary, Wuding County urgently needs to establish new channels and methods for transmitting costume culture, which should not only partially restore traditional transmission practices but also incorporate modern education and community participation approaches to facilitate knowledge transfer, cultural identity reconstruction, and innovative applications of Yi costume culture.

2.6 Summary

This chapter systematically reviews the history, classification, cultural connotations, relevant theories, and practical cases of Wuding Yi costume culture, providing a foundation for the theoretical framework and methodological design of this study. The literature review can be organized into the following levels:

(1) Regional and Historical Context Analysis

The researcher reviewed the natural environment, sub-group distribution, and historical development of Wuding County and its Yi communities to provide foundational knowledge for understanding the evolution, regional variations, and transmission of costume culture. Historical studies indicate that Wuding Yi costumes began to take shape during the Han to Wei-Jin periods, gradually became more complex from the Tang to Qing dynasties, and largely formed their current main styles during the Qing to Republican periods. The influences of Luowu culture, Buddhist culture, and Ming imperial culture contribute to the diversity and complexity of Wuding Yi costume styles, patterns, and cultural expressions.

(2) Costume Culture and Classification Analysis

Through a review of literature on historical evolution, style classification, and cultural comparison, this study mapped the types and cultural features of Wuding Yi

costumes. Language, gender, age, social status, and function were used as primary classification criteria. Comparative analysis indicates that while Yi and Lisu costumes share similarities in basic styles and embroidery techniques, Yi costumes convey more complex cultural meanings. The literature also highlights the historical narratives, myths, philosophical concepts, beliefs, and ethical norms embedded in the costumes, providing a foundation for understanding their multi-layered symbolic significance and rich cultural value.

(3) Theoretical Support and Methodological Implications

Relevant theoretical frameworks include intangible cultural heritage protection theory, cultural sustainability theory, cultural anthropology theory, semiotics theory, and participatory design theory. These theories provide analytical frameworks and methodological guidance: cultural sustainability theory emphasizes culture as central to social sustainability, while participatory design theory offers practical approaches for community collaboration, interdisciplinary co-creation, and educational practices.

(4) Insights from Case Studies

Through seven domestic and international case studies (from China, Thailand, the UK, and Taiwan), the researcher analyzed the application of participatory design and interdisciplinary collaboration in cultural heritage transmission, community co-creation, and localized sustainable development. These cases offer methodological insights for this study, such as promoting cultural identity, knowledge transfer, and innovative applications through community engagement and educational activities.

(5) Pilot Research and Fact-Finding

Based on pilot research conducted in Wuding County—including field surveys, participatory observation, semi-structured interviews, focus groups, document analysis, and artifact analysis—the study systematically identified the existing problems in local Yi costume culture. The analysis revealed:

- Economic benefits prioritized over wisdom inheritance: current policies and industry development emphasize economic gain while neglecting cultural knowledge and heritage transmission;

- Cultural identity crisis: younger generations lack skills and cultural understanding, resulting in reduced identification with and participation in traditional costumes;

- Weakened cultural sustainability: traditional family and community transmission mechanisms are disrupted by population mobility and social change, preventing stable intergenerational continuity.

(6) Research Logic and Application

Through the analysis of history, classification, cultural connotations, theory, and practical cases, the researcher identified the core issues in the transmission of Wuding Yi costume culture and derived the central research logic: cultural heritage transmission relies not only on the preservation of traditional skills but also on the integration of modern education, community participation, and multi-stakeholder collaboration to achieve knowledge transfer, cultural identity reconstruction, and innovative application. This analysis directly informs the research output: the development of an Education Program and accompanying teaching resources based on participatory design methods. The program aims to establish a flexible yet structured learning path to promote intergenerational inheritance, strengthen cultural

identity, and drive the innovative transformation and social application of cultural wisdom, providing practical solutions for the sustainable development of Wuding Yi costume culture.(Figure 36)

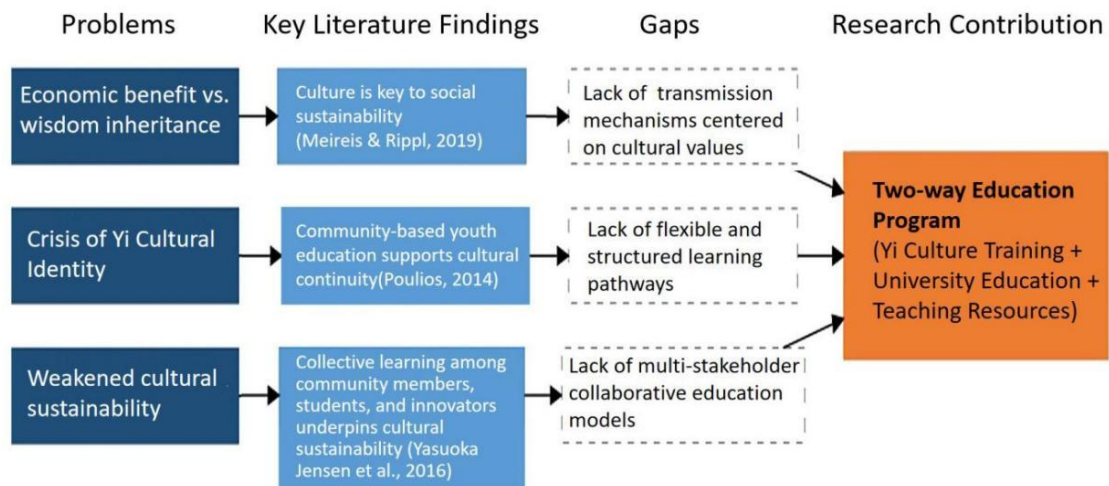


Figure 36 Research Logic and Application
Source: by the author

CHAPTER 3 RESEARCH METHODOLOGY

3.1 Method of Research

This study employs a mixed methods approach. Mixed methods research is an approach to inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data, and using distinct designs that may involve philosophical assumptions and theoretical frameworks. The core assumption of this form of inquiry is that the integration of qualitative and quantitative data yields additional insight beyond the information provided by either the quantitative or qualitative data alone (Creswell & Creswell, 2018).

3.1.1 The Philosophical Worldview of Mixed Methods

The Pragmatic Worldview provides a philosophical foundation for mixed methods research.

Firstly, pragmatism is not committed to any single system of philosophy or

reality view, making it highly suitable for mixed methods research. Researchers are free to combine quantitative and qualitative assumptions to form conclusions. Secondly, pragmatists do not see the world as an absolute unity, which aligns with the mixed methods researchers' approach of employing multiple techniques in data collection and analysis. Additionally, pragmatic researchers choose the research content and methods based on the anticipated outcomes; similarly, mixed methods researchers need to establish a reasonable justification for combining quantitative and qualitative data (Creswell & Creswell, 2018).

The mixed methods approach involves method selection that includes both predetermined and emerging methods; questions that encompass both open-ended and closed-ended questions; data collection that integrates various possible data forms; data analysis that combines statistical and text analysis; and data interpretation that is based on cross-database interpretation (Creswell & Creswell, 2018).

3.1.2 Mixed Methods Designs

This study employs an exploratory sequential mixed methods design.

This approach begins with a qualitative research phase to explore participants' perspectives. The qualitative data is then analyzed and used to construct the subsequent quantitative phase. The qualitative phase can be utilized to build instruments best suited for the research sample, determine appropriate tools for use in the subsequent quantitative phase, develop experimental interventions, design applications or websites, or specify variables for further quantitative research. The specific challenge of this design lies in appropriately using qualitative research results and selecting research samples for both phases (Creswell & Creswell, 2018).

3.1.3 Reasons for Choosing Mixed Methods

(1) Comprehensive Understanding of the Research Problem: The revival of Wu Ding Yi traditional clothing is a multidimensional and complex process. This approach ensures that the research can capture and analyze data from multiple dimensions, contributing to a comprehensive understanding and interpretation of the research problem and its inherent complexities.

(2) In-depth Revelation of the Research Phenomenon: Mixed methods allow researchers to comprehensively acquire knowledge related to the research problem by employing various research techniques. Qualitative research provides an in-depth understanding of the independent variables, while the combination of qualitative and quantitative research helps examine different stakeholders' perspectives and reveals potential solutions to the problem.

(3) Enhanced Adaptability of Research: Mixed methods enhance the adaptability of research through integrated analysis at different stages. Qualitative research offers deep insights into the research problem and related knowledge, while quantitative research provides data on the effectiveness of participatory action interventions and related influencing factors. The combination of these two guides researchers to continuously optimize community participation strategies, thus enhancing the applicability of the research results.

In summary, mixed methods offer a systematic, flexible, and comprehensive research approach for the modern transmission and revival of Wu Ding Yi traditional clothing culture, effectively addressing the complexity of the research.

3.2 Sampling of Population

The main objective of this research is to apply participatory design methods to explore alternative approaches for the living inheritance of Yi costume culture in Wuding, thereby promoting its sustainable cultural development. The research is grounded in the theories of Participatory Action Research and Cultural Sustainability, both of which emphasize the central role of the community in the research process. In this research, the core community—namely, the Yi community that creates and maintains the costume culture—is identified as the key stakeholder (Poulios, 2014). Therefore, the Wuding Yi community, which possesses a long history and distinctive cultural characteristics but faces a crisis of inheritance, was selected as the research site.

In accordance with participatory design theory, this research adopts the participatory model of *Collective Learning by Doing*, which highlights long-term engagement, contextual practice, and empowerment. This model relies on the establishment of a Community of Practice, through which continuous practices, experiences, and experimental activities enhance participants' subject awareness and design literacy, fostering an endogenous motivation for community learning. To strengthen the community's intrinsic development capacity and support both costume culture inheritance and community building, this study introduces collaboration with a university to jointly construct a community education system.

The participating institution is Yunnan Normal University (YNU), a comprehensive normal university with distinct regional characteristics and multidisciplinary coordination. It comprises 20 colleges covering education, law and sociology, politics, economics, history, psychology, management, arts, literature, foreign languages, media, geography, mathematics, physics, chemistry, biology, information, and energy disciplines. The university's primary mission is to cultivate excellent teachers for Yunnan's primary and secondary schools while serving and supporting the province's social and economic development (Yunnan Normal University, 2025).

As the teacher training center of Yunnan Province, Yunnan Normal University is committed to cultivating students' understanding and respect for Yunnan's diverse ethnic cultures. Based on academic research, the university continuously integrates outstanding ethnic and folk cultural resources into its interdisciplinary teaching system, enriching cultural education and broadening students' perspectives on local multiculturalism.

The Yi people are the largest ethnic minority in Yunnan Province, with a population of 5.071 million (Yunnan Yearbook, 2024). In Wuding County, the Yi population reaches 90,371, accounting for 29.01% of the total population (Wuding Bureau of Statistics, 2024). Yi costume culture is an essential part of Yi cultural heritage, and the costumes of the Wuding Yi are particularly representative. Based on the researcher's findings, Yunnan Normal University recognizes the educational and academic value of this culture and thus incorporates it as a curricular resource within its teaching system. The participation of cultural and educational experts from Yunnan Normal University is expected to generate positive impacts on the sustainable cultural development of Yi communities at both academic and educational levels.

The Wuding Yi Embroidery Association serves as a key driving force in the

protection, inheritance, and modern transformation of Yi ethnic costume culture and is an important collaborative partner in this research. The association's primary functions include mobilizing community members to participate in activities related to costume culture preservation and revitalization, and enhancing their skills in costume making and embroidery. Acting as a bridge between researchers, the university, and community practice, the association facilitates community engagement and resource sharing, supports the development of cultural education programs, and strengthens community capacity to promote cultural inheritance and innovation.

In summary, the main stakeholders in the research include local Yi community members in Wuding, inheritors of Yi costume culture, clothing artisans, government officials, experts and scholars, university students, and visiting participants or cultural experience learners.

According to the principles of Participatory Action Research (PAR), community members, practitioners, and scholars together form the core participants in the research. The section analyzes the different types of stakeholders from two dimensions—roles and research impacts:

(1) Local Yi Community Members

Role: As the creators and custodians of Yi costume culture, their participation forms the foundation of this research. Through collective action and community collaboration, they strengthen cultural identity and social agency.

Research Impact: Their involvement provides essential perspectives in defining research issues, identifying strategies, and evaluating outcomes. Their participation fosters community cohesion and contributes to the living inheritance of Yi costume culture.

(2) Official Inheritors of Yi Costume Culture

Role: As traditional craft bearers with extensive knowledge and practical experience, they serve as vital transmitters of cultural wisdom and craftsmanship.

Research Impact: They provide first-hand information on costume techniques and cultural connotations, helping researchers gain deeper insights into the current state of cultural transmission and the main challenges it faces. They also participate in the development and implementation of the educational system.

(3) Yi Costume Artisans

Role: As the actual practitioners and inheritors of costume-making techniques, artisans play a key role in preserving the forms and intricate craftsmanship of Yi costumes.

Research Impact: Collaboration with artisans ensures that the research approach is closely aligned with the needs of heritage preservation and practice. Through participation in design activities and empowerment processes, artisans gain stronger agency in both cultural continuity and innovation.

(4) Government Officials

Role: They provide policy guidance, resource support, and coordination to facilitate collaboration between the community and the university.

Research Impact: They offer contextual insights into policy frameworks and current needs related to the protection of costume culture, which helps define the research issues. Their involvement also provides institutional support for the exploration of sustainable cultural development practices.

(5) Experts and Scholars

Role: Drawing on their theoretical and practical expertise, they provide academic guidance in research design, curriculum development, and outcome evaluation.

Research Impact: Yi culture experts offer macro-level perspectives on historical and cultural inheritance during the early stages of the study. University experts in education and culture participate in the design and evaluation phases, contributing to the construction and refinement of curricula and teaching materials. They also assess and provide feedback on the effectiveness of design alternatives, ensuring the scientific rigor and practical value of the research outcomes.

(6) Students

Role: Primarily undergraduate students from Yunnan Normal University, they participate in early-stage concept development, collaborative course design, and pilot teaching activities.

Research Impact: Students serve both as participants in the educational process and as new mediators for cultural transmission. Through their engagement and feedback, they help refine the course system, making the educational inheritance of traditional culture more relevant to contemporary contexts, and expanding pathways for innovative dissemination of cultural knowledge among younger generations.

(7) Visitors and Public Participants

Role: As experiencers and communicators of Yi costume culture, they deepen their understanding and recognition of the culture through participatory activities.

Research Impact: Their feedback provides valuable data on the effectiveness of cultural dissemination and audience reception, thereby validating the feasibility and social impact of the design proposals. (Figure 37)

In summary, data collection and analysis at each stage of this study relied on the active participation of multiple stakeholders. Qualitative methods enabled the researchers to gain an in-depth understanding of the community's cultural context and mechanisms of heritage transmission, while quantitative methods provided empirical evidence to assess the effectiveness of educational and design activities. Through multi-stakeholder collaboration and knowledge integration, this study established a mutually reinforcing mechanism between culture, education, and design, ensuring the effective promotion of the sustainable development and social dissemination of Wuding Yi costume culture.

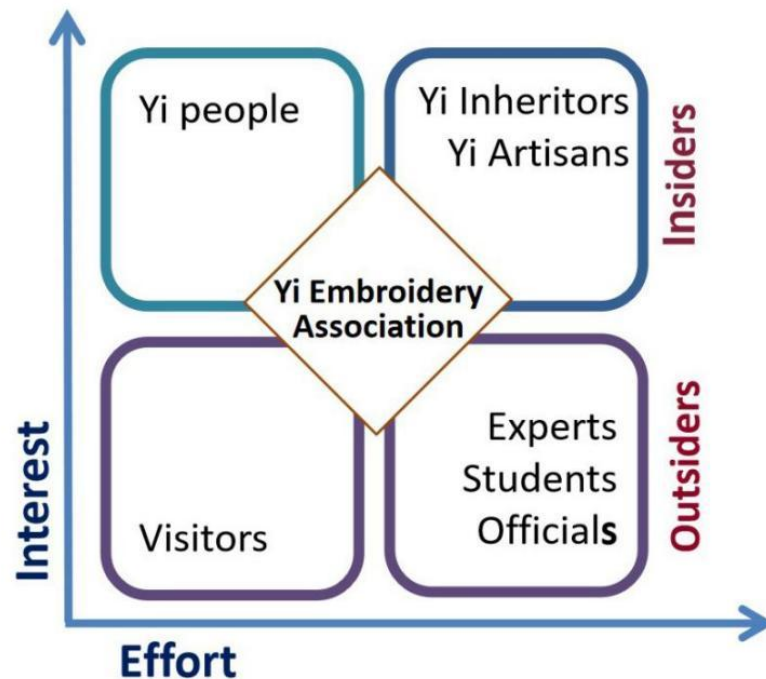


Figure 37 Stakeholder Analysis
Source: by the author

3.3 Collected Data

3.3.1 Qualitative Data Collection

This study, following the “research–design–validation” framework, systematically collected multiple sources of qualitative data to gain an in-depth understanding of the wisdom embedded in Wuding Yi costume culture, analyze its cultural value and current state of inheritance, and provide support for the design and optimization of interventions, ensuring both academic rigor and practical relevance.

The qualitative data collection tools and methods employed in this study include:

- Document Analysis: Historical archives, cultural background materials, records of traditional craftsmanship, and policy documents were systematically reviewed to clarify research questions, reconstruct the knowledge system of Wuding Yi costume culture, and establish a theoretical framework to support the study.

- Interviews: In-depth interviews were conducted with community members, official inheritors, artisans, educators, and other stakeholders to capture their perspectives, experiences, attitudes, intentions, and cognitive changes regarding cultural inheritance, providing essential information for precise problem definition.

- Focus Groups: Community participants, university students, and project stakeholders were organized into group discussions to collect opinions, consensus, needs, and values regarding costume culture and the design of educational programs, informing adjustments and optimization of course design.

- Participant Observation: Researchers immersed themselves in daily community life, cultural events, traditional craft practices, and workshop activities to record participants’ behaviors, attitudes, practices, and engagement, capturing the authentic

state and dynamic processes of cultural practice.

-Artifact Analysis: Representative costumes and related objects were examined to extract information on craftsmanship, symbolic meanings, historical context, and cultural value, providing a cultural basis for the development of educational resources and design innovation.

-Participatory Design Workshops: Participants' creative outputs, collaborative behaviors, feedback, acceptance of the prototypes, and suggestions for improvement were recorded during co-creation activities to validate the educational prototypes' applicability and support iterative optimization.

By integrating and analyzing these diverse qualitative data sources, the study was able to accurately identify key problems, deeply understand cultural wisdom, optimize the design solutions, and provide reliable data support for subsequent validation stages.

3.3.2 Quantitative Data Collection

This study employed quantitative data collection to evaluate the effectiveness of the educational interventions and to measure changes in participants' skills, attitudes, and cultural understanding. The primary tool used was pre- and post-tests, administered before and after the embroidery experience and university student focus group activities. These tests quantified participants' skill acquisition, attitude shifts, cognitive changes, and understanding of Yi costume culture, providing measurable evidence of learning outcomes and the impact of the educational program.

3.4 Data Analysis

The collected qualitative and quantitative data were systematically analyzed to identify key issues, extract cultural knowledge, and evaluate the effectiveness of the educational interventions.

-Thematic Analysis: Applied to interview transcripts, focus group discussions, and observational notes to identify recurring patterns, key themes, and insights related to the tangible and intangible wisdom embedded in Wuding Yi costume culture.

-Content Analysis: Systematically examined documents, historical archives, and policy texts to reveal cultural values, practices, and the current state of heritage transmission.

-Visual Analysis: Focused on Wuding Yi costume artifacts, patterns, and outputs from participatory design workshops and experimental teaching, interpreting their symbolic meanings, craftsmanship features, cultural values, and modes of knowledge transmission, thereby revealing the expression and innovative application of cultural wisdom.

-Descriptive Statistics: Quantitative data were analyzed by summarizing and comparing pre- and post-test results to measure participants' changes in skill acquisition, attitudes, cognitive understanding, and knowledge of Yi costume culture. By integrating qualitative and quantitative analyses, this study achieved data triangulation and mutual validation, enhancing the reliability of the findings and providing scientific evidence and practical guidance for the participatory design and iterative optimization of the Two-way Education Plan.

3.5 Demonstration and Evaluation

To validate and optimize the Wuding Yi ethnic clothing culture education program and its accompanying teaching materials, this study adopts a participatory and iterative design approach, conducting multiple rounds of demonstration, evaluation, and optimization.

During the design phase, participatory design workshops (PD Workshops) were conducted, involving community members, university students, and experts in the co-creation and refinement of the educational intervention program.

The developed prototypes included two-way education plans and supporting educational materials, which provided a foundation for subsequent practical experiments and evaluation.

The validation phase employed multiple complementary methods:

(1) Expert Review: University experts review the educational materials and provide feedback on content modifications and course optimization.

(2) Community Experimental Teaching

- Sample group: Participants from the Yi community across different age groups, with a focus on youth (20–40 years old), totaling approximately 30 individuals.

- Experiment plan: Conduct a pilot community course of approximately 4 hours, covering Yi costume cultural background (cultural foundational knowledge) and derivative product design (topics of community interest).

- Assessment tools: Use focus group discussions and semi-structured interviews to collect participants' responses on course comprehension, interest, and changes in cultural identity; employ classroom observation records to analyze engagement and skill acquisition.

(3) Embroidery Experience Test

- Sample group: External participants, including local non-Yi residents and visitors to Wuding, primarily cultural experience enthusiasts, totaling 10 individuals.

- Experiment plan: Organize a 4–6 hour embroidery experience activity, including basic stitching techniques, pattern embroidery, and color matching exercises.

- Assessment tools: Conduct pre- and post-tests to assess participants' skill acquisition, cultural understanding, and attitude changes; use structured scoring sheets (Rubrics) to quantify work quality, stitching proficiency, and cultural understanding; apply T-tests to analyze pre- and post-test differences and determine the statistical significance of learning outcomes.

(4) University Experimental Teaching

- Sample group: Students enrolled in an interdisciplinary elective course, totaling 15 participants (10 female, 5 male), to examine potential gender differences in learning performance and adaptability.

- Experiment plan: Conduct a 4-hour course covering embroidery techniques, costume pattern analysis, and cultural background explanation.

- Assessment tools: Use Rubrics to systematically evaluate students' work and class participation; analyze pre- and post-test data via T-tests to quantify skill improvement, attitude changes, and cultural understanding.

Through this multi-level experimental and evaluation process, the research aims to iteratively optimize courses and teaching materials, ensuring cultural authenticity,

educational effectiveness, and practical feasibility, while providing evidence-based guidance for the sustainable transmission of Wuding Yi costume culture.

3.6 Tools and Reliability (IOC)

All variables and questionnaire items in this study are derived from literature research and previous work. To ensure the consistency of each variable and question in the questionnaire, they have been evaluated by three experts in the relevant field, as follows: (Figure 38)



Figure 38 Experts

Source: Provided by the experts

Expert 1: Xiaohui Hua, Expert 2: Li Xiuting, Expert 3: Wang Changchang

The authors used the Index of Item Objective Congruence (IOC) to assess the consistency between questions and objectives, or objectives and content, following Turner & Carlson (2009). The IOC can be calculated using a specific formula.

$$IOC = \frac{\sum R}{N}$$

Where:

IOC = the consistency between questions and objectives, or objectives and content. R = the total number of rating points given by all qualified experts. N = the number of qualified experts.

The rating points are classified into three levels:

+1 indicates that the questionnaire's questions are fully consistent with the objectives.

0 indicates that the consistency of the questionnaire's questions with the objectives is uncertain.

-1 indicates that the questionnaire's questions are inconsistent with the objectives.

The consistency index must reach 0.5 or above to be accepted. The Index of Item Objective Congruence (IOC) results from three experts are as follows:

3.6.1 Qualitative Tools

Interviews and focus groups were designed to collect in-depth information on the attitudes, knowledge, skills, and perceptions of cultural inheritance of Yi costume culture among community members, university students, and experts. The research

instruments were organized around four main themes:

1) Attitudes and Practices toward Yi Costume

Example questions:

- What is your attitude towards traditional Yi clothing?
- In what situations do you usually wear traditional Yi clothing?

2) Skills and Knowledge Acquisition

Example questions:

- Do you have skills in making traditional Yi clothing? Which specific skills?
- Where did you learn about traditional Yi costume culture?

3) Perceptions of Cultural Inheritance

Example questions:

- What do you think are the reasons for the gradual loss of Yi costume culture?
- Do you think Yi costume culture should continue to be passed down? Why?

4) Suggestions for Cultural Transmission

Example questions:

- What methods do you think can be used today to pass down Yi costume culture?
- What suggestions or feedback do you have for educational activities on Yi costume culture?

Reliability and Validity Measures: Interview guides were reviewed by experts in Yi costume culture and participatory design. Data were triangulated across multiple sources (community members, students, experts), and reliability was further ensured through audio transcription and consensus coding.

3.6.2 Quantitative Tools

Quantitative assessment was conducted through pre- and post-tests to evaluate participants' skill acquisition, attitude changes, and cultural understanding. This included:

-Embroidery Experience Test: Pre- and post-tests were administered to participants to quantify skill improvement, attitude changes, and understanding of Yi costume culture.

-University Pilot Teaching Test: Pre- and post-tests were used to evaluate students' skill acquisition, cultural understanding, and attitude changes during experiential learning.

Reliability Measures: Test items were designed based on the objectives of the educational courses and targeted cultural competencies. Structured scoring sheets (rubrics) were employed as assessment tools to standardize and guide the evaluation of participants' performance, reducing subjective bias. Collected data from pre- and post-tests were analyzed using T-tests to determine the statistical significance of observed changes. Results were scored and verified by the researcher to reduce scoring errors. Pilot testing with a small sample ensured clarity and appropriateness of test items. The professional quality of the course design and educational materials was reviewed by the university expert committee to ensure content validity.

3.6.3 Item-Objective Congruence (IOC) Validation

To further ensure the content validity of the research instruments, the IOC (Item-Objective Congruence) method was applied to all instruments, including the interview

guide, pre- and post-test items, and scoring sheets. Three experts in Wuding Yi costume culture and participatory design rated each item as +1 (clearly relevant), 0 (uncertain), or -1 (not relevant).

Based on the ratings, IOC values were calculated for each item, and the results were as follows:

•**Interview guide items:** IOC values ranged from 0.67 to 1.00, with an average of 0.83;

•**Pre- and post-test items:** IOC values ranged from 0.70 to 0.93, with an average of 0.81;

•**Scoring sheet items:** IOC values ranged from 0.71 to 1.00, with an average of 0.85.

All items had IOC values ≥ 0.7 , exceeding the commonly accepted threshold of 0.5, indicating a high consistency with the research objectives. Items below the threshold were revised according to expert feedback. These measures ensured that the data collection instruments met academic standards for reliability, content validity, and alignment with research objectives, providing an effective basis for evaluating the effects of the participatory design intervention. (Figure 39)

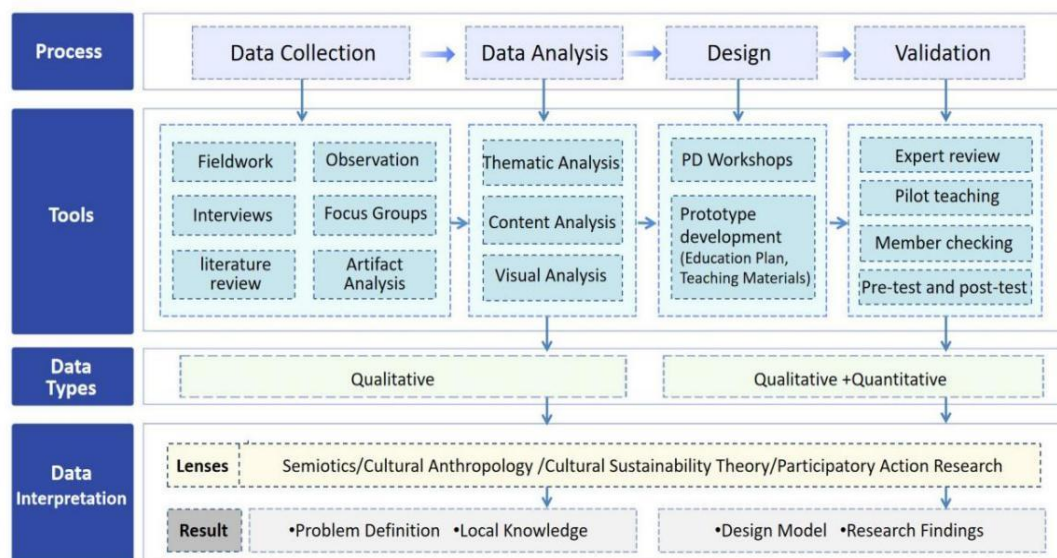


Figure 39 research methods

Source: by the author

3.7 Research Process

This research adopts a participatory design perspective, integrating qualitative and quantitative methods for comprehensive analysis. It explores the tangible and intangible wisdom embedded in Wuding Yi costume culture, identifies the key issues in its inheritance process, and provides data support for the subsequent development of educational programs and design prototypes. The research process can be broadly divided into four stages: data collection, data analysis, design, and validation.

3.7.1 Data Collection

3.7.1.1 Fieldwork from a Cultural Anthropological Perspective

In the initial stage, cultural anthropological methods were employed for fieldwork and data collection, including participant observation and in-depth interviews, to systematically obtain community members' knowledge, attitudes, practices, and emotions regarding costume culture. Preliminary analysis of these materials identified core issues in the inheritance of Wuding Yi costume culture, such as the declining mastery of traditional crafts among younger generations, lack of understanding of cultural meanings, and the disruption of community transmission chains. At this stage, data analysis emphasized contextualized interpretation to ensure that the findings accurately reflect the actual cultural conditions within the community.

3.7.1.2 Data Collection from a Semiotic Perspective

Based on the theoretical perspective that "culture is a system of symbols through which people understand and interpret the world" (Geertz, 2014), this study regards Wuding Yi costumes as a symbolic system carrying cultural meaning. The forms, patterns, colors, and craftsmanship of the costumes are not merely material expressions but serve as media for cultural cognition and social practice.

To systematically analyze this symbolic system, the study adopted the following steps:

(1) Defining the Material Corpus: Following the principles of breadth and homogeneity, representative Wuding Yi costume samples from the Qing dynasty to the present were extensively collected through field surveys and literature research. These samples provide a historical cross-section, helping to reveal the development and evolution of the costume's symbolic system over different periods.

(2) Symbol System Analysis: The meaningful units within the costumes were identified, and the relationships between signifiers and their signifieds were examined using a semiotic analytical framework. This approach allowed for the interpretation of the internal structure and logic of the symbolic system and the extraction of its functions in expressing identity, social values, and facilitating social interaction.

From a semiotic perspective, the research collected approximately 250 historical and contemporary costume samples, covering major subgroups and representative styles from the Qing Dynasty to the present. This extensive collection provides a foundation for analyzing the evolution and cultural connotations of the costume symbolic system.

3.7.1.3 Thick Description and Multi-Actor Verification

The research employed the anthropological method of "thick description" to interpret Yi costume culture in depth. This interpretation goes beyond the surface meanings of costumes by examining their use within social events, behaviors, and institutions, thereby revealing their role as part of the "flow of social discourse." Adopting an emic analytical stance, the research integrates historical documentation with local contextual interpretation to reconstruct the cultural landscape and sociocultural value embedded in costume culture.

Meanwhile, focus groups composed of local costume heritage bearers and cultural experts were organized to verify the symbolic meanings and cultural interpretations of the samples, ensuring the reliability and validity of the research

conclusions.

3.7.2 Data Analysis

To ensure the systematicity and scientific rigor of data analysis, this Research adopted multiple analytical methods as follows:

3.7.2.1 Thematic and Content Analysis

By coding and categorizing interview transcripts, field notes, and physical costume samples, the Research identified key themes closely related to cultural inheritance, including craftsmanship skills, symbolic cognition, identity, religious beliefs, and ecological wisdom. Through systematic organization, the Research extracted the core knowledge units and social functions of Yi costume culture.

3.7.2.2 Visual Analysis

A visual analysis was conducted focusing on costume styles, embroidery techniques, pattern composition, and color systems. The findings revealed that:

- **Costume styles** reflect age, gender, marital status, and social identity;
- **Embroidery techniques** form a systematic “stitch language” that can be interpreted as a set of visual symbols;
- **Pattern motifs** embody historical memory, religious beliefs, and collective values
- **The color system** expresses ecological wisdom and the holistic worldview of “Heaven – Earth – Human – Nature.”

3.7.2.3 Symbolic System Analysis

Based on Geertz’ s (2014) semiotic theory, costume styles, patterns, colors, and craftsmanship were analyzed as symbolic units to explore the relationship between the signifier and the signified. The analysis revealed that Yi costumes are not merely visual decorations but multidimensional expressions of social interaction, historical memory, cultural identity, and ecological ethics.

The results of the symbolic system analysis provided theoretical support for understanding the knowledge structure and value logic embedded in costume culture and informed the development of educational content and visual communication in the subsequent design phase.

3.7.2.4 Quantitative Analysis Methods

In the design validation phase, quantitative analysis methods were introduced to evaluate the effectiveness and statistical significance of educational interventions. Through pre- and post-test procedures, quantitative analyses were conducted on two experimental datasets—the Embroidery Experience Test and the University Pilot Teaching Program—to assess participants’ improvement in embroidery skills, cultural cognition, and attitudinal change.

- **Rubrics:** Served as standardized assessment tools to evaluate participants’ work quality, skill mastery, and level of cultural understanding, ensuring objectivity and comparability in evaluation;

- **Descriptive Statistics:** Used to calculate mean, standard deviation, and trend changes, thereby presenting the overall characteristics of learning outcomes;

- **T-test:** Applied to examine the statistical significance between pre- and post-test results, verifying the effectiveness of the educational design;

- **Interpretation and Triangulation:** Integrated qualitative feedback data (interviews and observations) for cross-validation, ensuring completeness and scientific reliability in data interpretation.

By integrating qualitative and quantitative analyses, this Research not only revealed the internal knowledge logic and symbolic system of Yi costume culture but also empirically validated, through data-driven evidence, the feasibility and effectiveness of the participatory educational design framework in promoting cultural inheritance and sustainable development.

3.7.3 Identification of Core Issues and Extraction of Cultural Knowledge

3.7.3.1 Identification of the Core Issues

Through comprehensive data analysis, this Research — grounded in the theoretical framework of cultural sustainability — identified three core issues that affect the sustainable inheritance of Wuding Yi costume culture. These issues correspond directly to the research objectives and provide both theoretical and practical foundations for the subsequent participatory design phase.

(1) Economically Driven Preservation Measures Neglect Cultural Wisdom

Current policies and industry practices often prioritize economic benefits, such as the development of Yi embroidery-related industries. This economic-centered approach has hindered the full transmission of the cultural wisdom and craftsmanship embedded in the costumes. While younger generations may have access to the costumes, their engagement is largely limited to appreciation or commercial consumption, lacking deeper understanding or mastery of the techniques and cultural meanings. This reflects both a skills gap and a deficit in cultural knowledge, highlighting the significance of Research Objective 1 (study of tangible and intangible wisdom).

(2) Cultural Identity Crisis

The investigation indicates that younger members of the Yi community have limited understanding of the patterns, colors, shapes, and symbolic meanings of their traditional costumes, resulting in diminished cultural identity and engagement. As a system of cultural symbols, the costumes' capacity to convey social status, beliefs, and historical memory has gradually weakened. This suggests that material display alone is insufficient to sustain cultural identity; participatory practices and educational initiatives are necessary to strengthen symbolic understanding, skill transmission, and emotional identification, aligning with Research Objective 2 (analysis of cultural value and current status).

(3) Lack of Inheritance Mechanisms and Weakened Sustainability

The traditional intra-family and community-based inheritance of Wuding Yi costume culture has been disrupted by population outflow and social changes, making stable intergenerational knowledge transfer increasingly difficult. The modern education system lacks systematic courses, structured learning pathways, and multi-stakeholder collaboration mechanisms, further limiting the sustainability of the culture. This issue is directly related to Research Objective 3 (design of participatory education and transmission activities) and highlights the need to reconstruct transmission mechanisms through community participation models, the “Two-way

Education Plan,” and the development of teaching resources to ensure integrated protection of skills, cultural identity, and social engagement.

In summary, these three core issues encompass skills, symbolic cognition, and social mechanisms, providing clear guidance for subsequent participatory design. Based on these findings, this study proposes a “Two-way Education Plan” combining university and community collaboration, which restores traditional transmission practices while integrating modern educational concepts and participatory methods, thereby achieving the sustainable preservation and innovative application of Wuding Yi costume culture.

3.7.3.2 Extraction of the Cultural Knowledge

Through systematic data analysis and information integration, this Research extracted the core knowledge system of the Wuding Yi costume cultural wisdom, encompassing tangible wisdom (costume forms, craftsmanship, symbolic patterns, and color systems) and intangible wisdom (social identity, historical memory, religious beliefs, ecological ethics, and ethnic identity). This reconstructed knowledge not only reveals the structural layers and meaning systems embedded within the costume culture but also provides theoretical grounding and practical guidance for the development of subsequent participatory design prototypes and educational programs.

As a cultural symbol system integrating material and spiritual dimensions, the Wuding Yi costume embodies the historical experiences and value orientations of the Yi community through its forms, craftsmanship, and visual language. Drawing upon Geertz’ s (2014) theoretical perspective that “culture is a system of symbols through which people understand and interpret the world,” this Research elucidates the interactive relationship between tangible and intangible wisdom within the costume culture—the former manifests cultural logic through material expression, while the latter imbues it with social meaning and spiritual significance. Together, they constitute a profound cultural wisdom system that sustains ethnic identity and cultural continuity.

(1) Tangible Wisdom: Cultural Encoding in Material Forms

From costume styles, craftsmanship, and patterns to color schemes, the Yi costumes of Wuding embody multidimensional material wisdom. These surface forms not only reflect the community’ s living environment and aesthetic preferences but also constitute a socially oriented symbolic system. Through field investigations, literature research, and museum visits, this study collected 250 samples of Wuding Yi costumes to systematically document, observe, and analyze their symbolic system. To ensure cultural accuracy and analytical depth, a three-member focus group—comprising officially recognized local costume inheritors and cultural experts—was organized to validate the findings and jointly identify the core symbols.

• Costume Styles

Wuding Yi costumes belong to the “Chuxiong type,” one of the six major Yi costume types in China, with the “Wuding type” representing a unique branch within this category. Costume styles vary according to gender, age, sub-group, and function, serving as direct markers of cultural identity.

At the same time, there are shared styles and symbolic elements, such as headdresses and tail decorations. Headdresses concentrate cultural meanings related to social status, legends, and totem worship. For example, the “rooster hat” worn by

young women is associated with the folk tale of the rooster crowing to herald light, symbolizing hope and brightness, thus reflecting the integration of mythic narrative and group values. Woolen hats symbolize reverence for the horse tassel flower, while the black headwrap embodies the “Eight Directions” cosmology and serves to distinguish marital status and age groups.

Tail decorations originate from ancient totem worship, symbolizing ancestral power and the continuity of lineage. Today, embroidered waistbands worn with naturally hanging sashes create a tail decoration effect. Although styles, dimensions, and embroidery details vary slightly among sub-groups, they consistently function as important markers of group affiliation.



Figure 40 Festive wear from Nasu branch

Source: Zhong & Zhou, 2006

Extensive field research indicates that among the sub-groups, the festive attire of women in the Naisu and Nasu branches is particularly representative. Its richness in materials, craftsmanship, and cultural expression exemplifies the typical characteristics of costume culture in the region. (Figure 40) (Figure 41)



Figure 41 Festive wear from Naisu branch
Source: Shao, 2016

• Crafts

The production of Wuding Yi costumes integrates multiple techniques, including weaving, painting, paper-cutting, and embroidery, with embroidery serving as the core, reflecting highly systematic manual wisdom. (Figure 42)



Figure 42 Techniques Integrated in Wuding Yi Costumes
Source: by the author

-Systematic Embroidery Techniques

Fourteen common embroidery techniques are used in Wuding, including Ping stitch, Youzhen stitch, Taozhen stitch, Huizhen stitch, Dazi stitch, Kou stitch, Yaozhen stitch, Yaxian stitch, Chanzhen stitch, Dui stitch, Bian stitch, Tiao stitch, Tiebu stitch, and Pan stitch. These techniques not only represent accumulated skills but also function as a symbolic language, with different stitches applied to specific

parts, themes, and functions, rendering the costumes as a “readable” text of cultural information.

Among these, the most representative basic stitches include:

- Ping Stitch: Commonly used for large floral motifs, providing clear layering.(Figure 43)

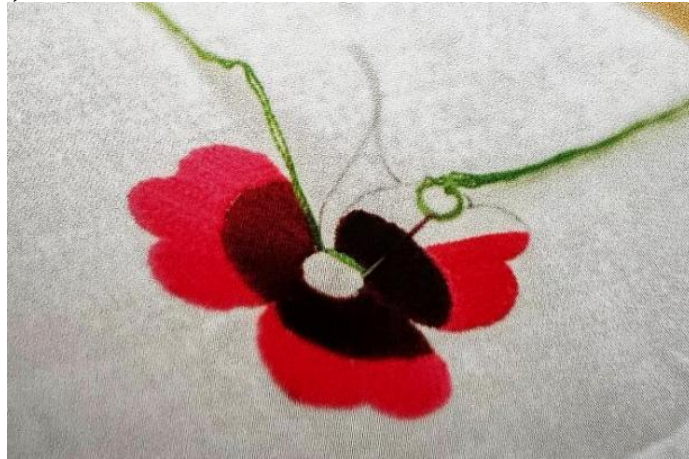


Figure 43 Ping Stitch Technique

Source: by the author

- Kou Stitch: Used for outlining patterns and securing openwork edges.(Figure 44)



Figure 44 Kou Stitch Technique

Source: by the author

- Tiao Embroidery: Forms dense cross-thread patterns based on warp and weft alignment.(Figure 45)



Figure 45 Tiao Stitch Technique

Source: by the author

•Tiebu Embroidery: Involves cutting and sewing fabric to create openwork designs; when combined with other stitches, it produces a harmonious interplay of positive and negative space.(Figure 46)



Figure 46 Tiebu Stitch Technique

Source: by the author

-Social Significance of the Craft

In learning embroidery, women not only acquire sophisticated technical skills but also enter the cultural context of the Yi community, enhancing identity recognition and reinforcing social roles. Mastery of embroidery often requires years of training, a process that embodies both the accumulation of craftsmanship and the intergenerational transmission of cultural knowledge and identity.

• Patterns

Patterns are the most fundamental symbolic resource in Wuding Yi costumes. Through extensive investigation and systematic analysis, this study distilled ten of the most representative symbolic units and further examined their “signifier-signified” relationships.

-Rhododendron Flower Patterns: Widely present across different Yi branches, symbolizing ancestor worship and fertility; in the Naisu subgroup, it serves as a primary motif emphasizing ancestral identity.(Figure 47)



Figure 47 Rhododendron Flower Patterns

Source: by the author

-Ram Horn Pattern: Reflects values of family prosperity and lineage continuity, closely related to household structures.(Figure 48)



Figure 48 Ram Horn Patterns

Source: by the author

-”寿”Character Pattern: The archaic Chinese character for “longevity” is reinterpreted as a community symbol, expressing wishes for long life and illustrating the integration of Han and Yi cultural elements.(Figure 49)



Figure 49 ”寿”Character Patterns

Source: by the author

-Phoenix Flower Pattern: Women in the Naisu and Nasu subgroups refer to embroidered birds on garments as “Phoenix,” often combined with the Ma Yinghua pattern, symbolizing auspiciousness, wealth, and feminine beauty.(Figure 50)



Figure 50 Phoenix Flower Pattern

Source: by the author

-Peony Pattern: Introduced from external flora influenced by Ming dynasty

historical events and the ecological environment, it became a symbol of prosperity and good fortune within the Yi aesthetic system. (Figure 51)



Figure 51 Peony Pattern

Source: by the author

-Human Dance Pattern: Depicts group dances to record migration experiences and communal unity, reflecting social cohesion. (Figure 52)

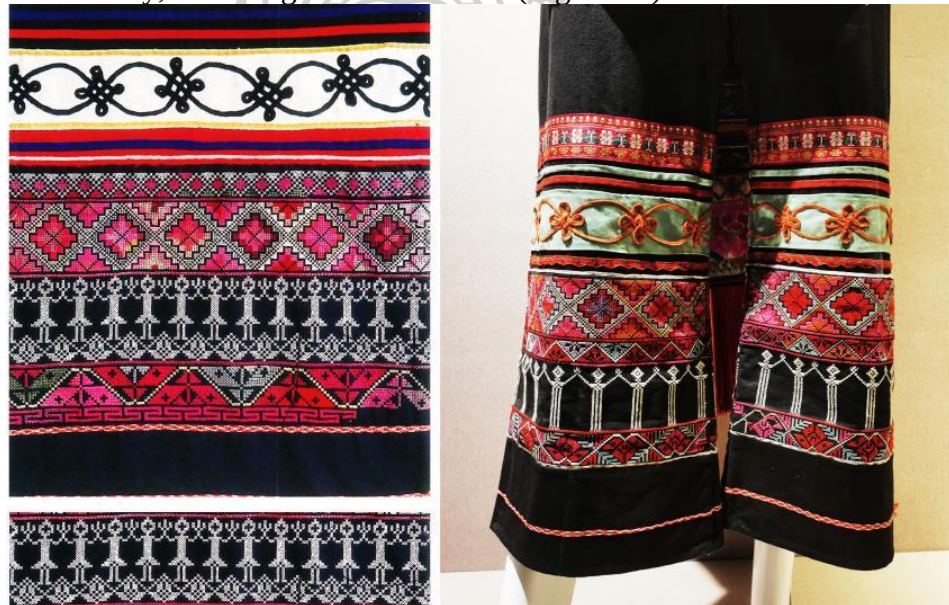


Figure 52 Human Dance Pattern

Source: by the author

-Four Directions Eight Tigers Pattern: Combines tiger totem symbolism with the cosmological concept of eight directions, reflecting the Yi ancestors' understanding of nature and cosmic order. (Figure 53)

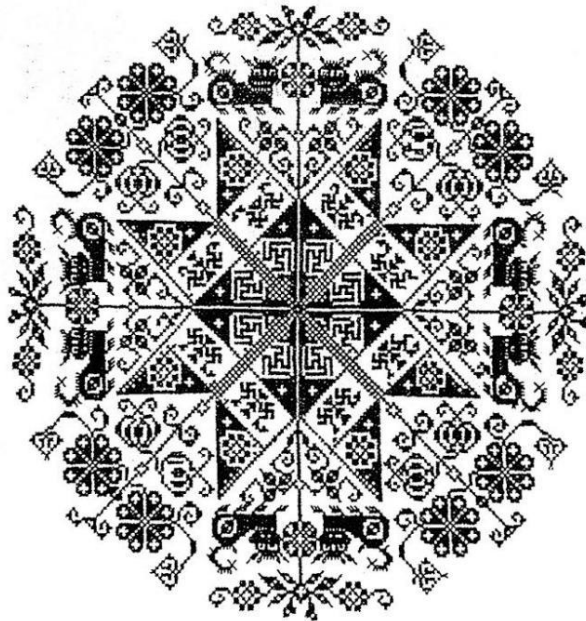


Figure 53 Four Directions Eight Tigers Pattern

Source: by the author

-Die jiao Pattern: “Die jiao” is an important collective dance of the Yi ethnic group, performed during rituals, festivals, and gatherings, where people join hands and dance around a bonfire. The Diejiao pattern abstractly represents this dance scene, capturing the cultural practices of rituals and celebrations, and is commonly embroidered on waistbands and trouser hems. (Figure 54)



Figure 54 Die jiao Pattern

Source: by the author

-Crab Pattern: Symbolizes life continuation and unending reproduction; its form resembles Buddhist Pan chang motifs, indicating cultural exchange and integration. (Figure 55)

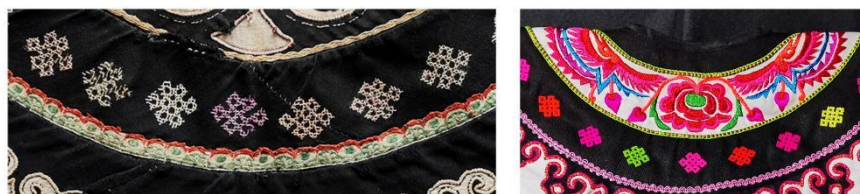


Figure 55 Crab Pattern

Source: by the author

-Lian qing kou Pattern: Represents enduring love and family happiness, serving as a visual expression of individual emotional desires.(Figure 56)



Figure 56 Lian qing kou Pattern

Source: by the author

These patterns are not merely decorative elements but constitute a symbolic system with both denotative and connotative dimensions. At the denotative level, primary motifs on jackets such as Ma Yinghua, Ram Horn, Shou, Feng Bird, and Peony, human dance motifs commonly found on trouser hems, and specific symbols like Four Directions Eight Tigers on trouser legs or baby-carrying cloths, together with auxiliary decorations, form the basic elements of the costume's symbolic system. Their distribution and combination create an orderly and distinctive visual language. At the connotative level, these symbols transcend mere decoration, carrying multiple meanings including auspiciousness, wealth, blessings of life, ancestor worship, and group identity, reflecting the Yi community's cultural understanding and values regarding nature, life, and social order.

• Colors

Colors constitute another layer of the symbolic system, reflecting the Yi worldview of the integrated relationship among heaven, earth, humans, and nature.



Figure 57 Color of Women's Costumes in the Nasu and Naisu Branches

Source: by the author

The Yi community primarily uses red, yellow, and black as dominant colors. Black symbolizes the earth and the maternal source, representing maturity, solemnity, and authority. Red and yellow, derived from natural flowers, signify both the colors of nature and qualities of passion and courage. Blue represents the sky and freedom, forming a philosophical balance with the black of the earth, embodying a “yin-yang” or male-female unity. White symbolizes purity and virtue, while green represents mountains, rivers, and vegetation, expressing reverence for the natural world.(Figure 57)

(2) Intangible Wisdom: Beliefs, Customs, and Cultural Logic

From a cultural anthropology perspective, clothing not only represents “ways of seeing the world” but also functions as a practical cultural language. Through thick description (Geertz, 2014), the deeper meanings embedded within this symbolic system can be revealed.

• Social Identity and Role Expression

Costume serves as a visual symbol of social roles and life stages. Among the Wuding Yi, clothing distinguishes age, marital status, and gender: bright colors worn by unmarried girls symbolize youth and readiness for marriage, while subdued tones worn by married women convey maturity and responsibility. Through this visual language, community members can recognize each other's social roles and identities in daily life and festive occasions, thereby maintaining social interaction and

reinforcing cultural identity.

• **Non-Textual Carriers of History and Memory**

In historical contexts lacking systematic written records, costumes function as “non-textual archives” of a community’s history, migration, and mythological narratives. Patterns serve not only aesthetic purposes but also act as a form of “visualized collective memory.” Details in the costumes of different subgroups document migration routes, intermarriage histories, major events, and even mythological stories.

For example, specific patterns and color combinations are interpreted by community members as symbolic representations of particular historical events. This non-textual memory mechanism allows the community to transmit cultural knowledge across generations through visual symbols, thereby maintaining cultural continuity amid dynamic social changes.

• **Materialization of Religious Beliefs and Values**

The patterns and structures in Wuding Yi costumes embody the deep logic of indigenous religious beliefs. Tiger totems symbolize ancestral power and protective guardianship; maternal motifs signify life continuity and fertility worship; and elements of polytheism are embedded into everyday attire through complex geometric and natural symbols.

In key ceremonial contexts—such as ancestor rituals, weddings, or coming-of-age ceremonies—wearing specific costumes is not merely procedural but acts as a symbolic entry into the sacred order. Through these codified practices, individuals and the community continually reaffirm their identities and beliefs, making the costumes a materialized medium of religious systems and social values.

• **Cultural Expression of Ecological Wisdom**

The costume culture of the Wuding Yi exhibits a distinct ecological orientation, with aesthetic principles highly attuned to the natural environment (Peng, 2013). Rooted in a “spirit-in-all-things” worldview, Yi cultural development has historically been based on respect for and coexistence with nature, rather than its exploitation. The choice of materials, craftsmanship, and colors in Yi costumes reflects a profound interaction between humans, nature, and the cosmos.

The Yi regard nature as the nurturing mother of life. Nature serves not only as a survival resource but also as a foundation for social culture and spiritual identity. Bright floral embroidery and abstract landscape motifs on costumes function both as aesthetic expressions and as symbols of reverence for the natural world, acting as a medium for human–environment interaction and illustrating the harmony between the natural realm and human society.

Respect and reverence for nature are also embedded in daily life and religious rituals, where mountains, rivers, stars, and the sun and moon are treated as sacred. This worldview forms a primordial “unity of heaven and humans,” shaping traditional ecological ethics and guiding the community to consciously maintain ecological balance.

From cultural anthropological and semiotic perspectives, Yi costumes constitute a symbolic system carrying ecological wisdom, representing harmonious coexistence with nature, continuity of life, and reverence for the environment. Preserving and transmitting Yi costume culture not only safeguards ethnic history and aesthetic value but also offers cultural insights for ecological protection—promoting sustainable

development in contemporary communities through respect for nature, understanding of ecological cycles, and application of cultural ecological wisdom.

• **Markers of Ethnic Identity**

Wuding Yi costumes serve as a crucial symbolic system for ethnic identity and social recognition. Costumes from different subgroups and settlements exhibit distinctive styles, patterns, colors, and wearing practices. These variations not only reflect regional culture, historical roots, and daily practices but also function as visual markers for identifying group membership. Through communal practices and intergenerational transmission, these costumes continuously reinforce collective identity, consolidating social belonging and cultural cohesion.

In sum, Wuding Yi costumes are more than a combination of material symbols; they embody the underlying logic of Yi culture. Their “content” constructs the fundamental elements and structural order of the costume system, while their “extension” conveys multiple meanings—including historical memory, religious beliefs, ecological wisdom, and community sentiment—forming a dynamic yet stable symbolic system. Through the cultural anthropological method of thick description, it is evident that costumes, in festivals, weddings, and funerals, communicate both personal identity and collective emotional and cultural order. By integrating tangible and intangible wisdom, Wuding Yi costumes achieve multi-dimensional connections—from material to spiritual, from individual to community.

3.7.4 Design and Validation

Based on preliminary literature review and fieldwork, this study identified three core issues in the transmission of Wuding Yi costume culture: the neglect of cultural wisdom under economic-oriented priorities, weakened cultural identity among the younger generation, and the fragility and reduced sustainability of traditional transmission mechanisms. To address these issues, the study proposes an intervention pathway centered on “Education—Design—Community Collaboration,” aiming to construct an educational system with bidirectional interaction through the joint participation of universities and the Yi community.

First, to address the neglect of cultural wisdom, the study proposes a transmission mechanism centered on cultural value. By systematically reviewing the tangible wisdom of Wuding Yi costumes (including costume forms, craftsmanship, materials, and color systems) and intangible wisdom (history, customs, beliefs, and values), the study plans to establish a cultural knowledge framework that can be applied in teaching and redesign. This framework is intended to provide theoretical support for educational content and lay the foundation for the systematic activation and re-creation of cultural wisdom.

Second, to address the “cultural identity crisis,” the study plans to develop a “Two-way Education Program,” structured as “Yi Cultural Training Program—University Education Program—Supporting Teaching Resources Development,” to facilitate knowledge co-creation between the community and universities. At the community level, the focus will be on the transmission of traditional knowledge and skills to maintain cultural authenticity; participation of the younger Yi generation is expected to support the continuity of cultural identity. At the university level, traditional Yi costume knowledge will be integrated with modern educational technologies to develop a course system. Through the systematic design of five courses and corresponding teaching resources (covering cognition, skills, modern

application, and digital dissemination), the study aims to form a complete learning pathway, providing opportunities for community cultural transmission as well as for enhancing university students' cultural understanding and design capabilities.

Finally, to address the weakening of cultural sustainability, the study proposes a collaborative education and practice model based on participatory design. This model envisions university-community cooperation to bridge gaps in traditional family-based transmission mechanisms and provide institutional and resource support for cultural continuity. The collaboration is expected to create a synergistic network among community members, university teachers, and students, enabling knowledge co-creation, resource sharing, and promoting cultural transmission pathways toward greater flexibility, diversity, and sustainability.

In the design and validation phase, the study plans to adopt multiple verification methods. First, experts will be invited to review the course system and teaching materials to assess their scientific rigor and feasibility. Second, in experimental teaching, Yi community members and university students will participate in the courses, with pre- and post-assessments conducted to evaluate learning outcomes. Finally, experience tests will be conducted with Yi community visitors to examine the potential effectiveness of the course design in promoting cultural understanding, skill acquisition, and cultural identity.

Through this design and validation process, the study is expected to form a complete closed loop from cultural analysis to course development and practical verification, providing a scientific evaluation of the operability and effectiveness of the Education-Design-Community Collaboration model in promoting sustainable cultural development.

3.8 Summary

This chapter systematically reviewed the research methods and implementation design of the study, covering data collection, data analysis, and the planned design and validation, thereby forming a complete logical research framework. By identifying core issues, constructing a cultural knowledge framework, and proposing an education-centered collaborative mechanism, the study theoretically elucidates the underlying logic and transmission challenges of Wuding Yi costume culture while outlining feasible intervention pathways.

The design of the course system and educational model integrates cultural research, design practice, and social innovation, shifting cultural transmission from a unidirectional process to multi-stakeholder co-creation. The university-community collaboration model is expected to provide a replicable theoretical and practical framework for the sustainable development of Yi costume culture and offers new insights for the integration of local cultural revitalization with contemporary educational systems.

The next chapter will further elaborate on the design and development process, as well as the specific content, of the “Two-way Education Program.

CHAPTER 4 RESEARCH RESULT

4.1 Findings

4.1.1 Outputs Related to Research Objective 1

For Research Objective 1 (to explore the tangible and intangible knowledge of traditional Wuding Yi costumes), this study systematically analyzed the tangible knowledge (forms, craftsmanship, and techniques) and intangible knowledge (history, customs, beliefs, and values) of Wuding Yi costumes through fieldwork, semiotics, and cultural anthropology. This analysis clarified the internal logic and symbolic structure of the cultural system. On this basis, a set of educational materials for Yi costume culture, composed of five courses, was developed to systematically reconstruct the cultural knowledge framework of Wuding Yi costumes.

Among them, the course Appreciation of Yi Costume Art and its accompanying teaching resources systematically collected and organized images and textual materials of representative costumes, extracting and interpreting key features, materials, techniques (painting, paper-cutting, embroidery), patterns, and color systems. This process not only achieved the preservation and safeguarding of core cultural resources of Wuding Yi costumes but also laid a solid foundation for the systematic transmission of cultural knowledge.

4.1.2 Outputs Related to Research Objective 2

For Research Objective 2 (to analyze the value of costume cultural knowledge, its current transmission status, and the role of community and social participation), the study revealed the multidimensional cultural value of Wuding Yi costumes, including expressions of social identity and roles, carriers of history and memory, reflections of religious beliefs and values, symbols of ethnic identity, and the continuation of ecological wisdom. At the same time, the study identified the main challenges in current transmission: lack of knowledge, skill gaps, and cultural identity crises.

To address these challenges, the study developed two courses, Yi Embroidery Skills Experience and Yi Paper-Cutting Skills Experience, along with supporting teaching materials and designed beginner and intermediate toolkits to support Yi youth, university students, and cultural participants in learning traditional skills, thereby enhancing cultural understanding and practical ability.

Furthermore, the study introduced participatory design principles to establish a multi-stakeholder educational and practical mechanism, and signed the first three-year “Community–University Collaboration Agreement” to support the community in building an autonomous costume culture education system and long-term mechanism. This mechanism aims to strengthen the community’s cultural agency and self-renewal capacity, promoting the living transmission of cultural heritage.

4.1.3 Outputs Related to Research Objective 3

For Research Objective 3 (to design participatory prototypes and alternative transmission schemes), and to promote the sustainable development of Yi costume culture, the study constructed a collaborative network between the university and the community through seminars and participatory design workshops, jointly developing the Two-way Education Program and its supporting teaching materials.

Among them, the courses Yi Embroidery Derivative Product Design and Digital Communication of Yi Costume Culture aim to cultivate learners’ cultural design abilities, enhance their practical skills in using digital media to disseminate traditional

culture, and promote the transformation of cultural resources into multidimensional social and economic value. Through this process, a collaboration-based transmission mechanism centered on education was formed, providing a practical alternative for constructing a sustainable development system of Yi costume culture that meets the needs of the contemporary era.

4.2 Design Concept

4.2.1 Key Insights

Based on field research, semiotic analysis, and in-depth cultural study of Wuding Yi costume culture, this study identifies the core issues affecting its sustainable transmission, including skill discontinuity, gaps in cultural awareness, and the weakening of traditional transmission mechanisms. Costume is not merely a collection of material symbols; it also embodies social identity, historical memory, religious beliefs, ecological wisdom, and collective cultural identity. Its sustainable transmission is therefore closely linked to the continuity of cultural knowledge, community empowerment, and social interaction.

From the perspective of cultural sustainability theory (Meireis & Rippl, 2019; Poullos, 2014), culture is regarded as a multidimensional resource and a “development asset,” whose continuity depends not only on economic or social indicators but also on the preservation of values, traditional practices, and community connections. The living heritage approach emphasizes the original function of heritage, community engagement, ongoing maintenance, and the dynamic evolution of its expressions, which aligns closely with the living transmission of Wuding Yi costume culture.

Within this theoretical framework, participatory design (PD) emerges as an effective intervention strategy. PD emphasizes multi-stakeholder co-creation of value, particularly through the mode of “collective learning by doing” (Yasuoka-Jensen & Kamihira, 2016), leveraging practice communities to promote knowledge sharing, skill development, and community empowerment. Through fieldwork, workshops, prototype design, and evaluation, PD not only generates concrete educational prototypes but also establishes a sustainable cultural learning mechanism. This approach effectively addresses skill gaps, enhances cultural understanding, and reconstructs the internal chains of cultural transmission within the community, thereby ensuring the living continuity and sustainability of costume culture.

In summary, the key insights of this study indicate that the sustainable transmission of Wuding Yi costume culture requires long-term engagement of core community groups, co-creation and transmission of cultural knowledge and skills, and institutionalized educational and participatory mechanisms. Participatory design methods not only facilitate knowledge production and skill transfer but also provide robust support for the practical implementation of cultural sustainability theory. These insights directly inform the subsequent design of the “Two-way Education Program” and the development of educational resources, laying the theoretical and practical foundation for the living transmission and innovative application of Yi costume culture.

4.2.2 Design Principles

Based on theoretical analysis and practical exploration, this study translates key insights into actionable design guidance, forming four core design principles to support the living transmission of Wuding Yi costume culture and the development of educational prototypes. These principles not only reflect the core ideas of participatory design and cultural sustainability theory but also provide clear direction for practical implementation.

(1) Community Participation

The sustainability of cultural transmission is rooted in the active engagement and continuous maintenance of core community groups. Therefore, this study emphasizes that cultural transmission activities should be led by these core groups to ensure the authenticity and local relevance of Yi costume knowledge. At the same time, design practices aim to stimulate community members' initiative and cultural awareness, while incorporating the participation of university students and other external stakeholders, promoting multi-level interaction and collaboration. In practice, the community should maintain a leading role in educational, practical, and decision-making processes, and multi-stakeholder cooperation should strengthen community responsibility, cultural identity, and social participation, thereby establishing the community as the central actor in cultural transmission.

(2) Co-creation of Knowledge

Effective cultural transmission relies not only on the efforts of a single group but also on the collaboration of multiple stakeholders, including community members, university students and faculty, experts, and external participants. In this study, knowledge co-creation is realized through diverse methods such as workshops, prototype design, and collective practice. Leveraging the “collective learning by doing” model, participants achieve knowledge sharing, skill transmission, and experience accumulation through collaboration. This principle emphasizes that educational prototypes are not merely material outcomes but a shared knowledge system and cultural practice model, enabling participants to continuously build experience and capability through sustained practice.

(3) Sustainability

The value of participatory design lies not in one-off project outputs but in the construction of learning and management mechanisms capable of long-term operation. Based on this principle, the study proposes a sustainable model of “co-development – co-implementation – co-maintenance.”

- Co-development: Through collaborative workshops involving community members, university students and faculty, and experts, participants jointly learn, share, and integrate cross-disciplinary knowledge, co-construct educational resources, and continuously optimize them through practice feedback.

- Co-implementation: Educational projects are implemented by a collaborative teaching team, with Yi costume inheritors responsible for skill transmission and practical teaching, while university experts provide course structure design, knowledge system development, cultural derivative product design, and digital communication support, ensuring systematic and scientific implementation of the courses.

- Co-maintenance: Universities provide continuous support for project iteration and optimization through academic research and teaching, while the community

continues to contribute local knowledge and skills, establishing a stable cultural sustainability support network to ensure the long-term vitality of the educational prototypes.

(4) Innovation & Revitalization

While respecting and preserving the core values of traditional culture, the study explores innovative pathways that integrate tradition with modernity, giving culture new forms of expression and channels of dissemination. Through co-created curricula, five courses were developed, including those focused on the transmission of traditional ecological knowledge and skills—such as *Appreciation of Yi Costume Art*, *Yi Embroidery Skills*, and *Yi Paper-cutting Skills*—as well as courses emphasizing innovation and revitalization, such as *Derivative Product Design* and *Digital Communication*. The co-creation and implementation of these courses not only protect and transmit Yi costume culture but also expand its dissemination and application through modern methods.

In summary, the four principles of community participation, knowledge co-creation, sustainability, and innovation & revitalization constitute the core theoretical framework for the educational prototypes and service models of this study. This framework not only translates theoretical insights into practice but also provides systematic and robust support for the long-term transmission and innovative development of Wuding Yi costume culture.

4.2.3 Design Objectives

Based on the analysis of field research and participatory practice, this study proposes three core design objectives to address the challenges faced by Wuding Yi costume culture in knowledge inheritance, cultural identity, and sustainability, while guiding the development of subsequent educational prototypes and service models:

(1) Rebuild a transmission mechanism centered on Yi cultural values

Through community-led initiatives and multi-stakeholder collaboration, the design aims to shift from an “economically driven” to a “culturally value-driven” approach. The objective is to strengthen the community’s central role in cultural transmission, ensuring that costume knowledge, skills, and cultural wisdom are authentically preserved within the local context.

(2) Establish flexible and structured learning pathways

To address the weakening cultural identity and skill discontinuity among younger generations, the design provides flexible yet structured learning pathways through the “Two-way Education Program” and the development of supporting educational resources. This enables participants of different ages and backgrounds to access, understand, and master costume knowledge and skills, gradually rebuilding cultural identity.

(3) Expand multi-stakeholder transmission channels

In the context of weakened traditional familial and community transmission, the design establishes new transmission channels through collaboration among multiple stakeholders, including the community, universities, experts, and external participants. This model not only broadens the reach of cultural knowledge and skills but also creates conditions for the living continuity and dynamic innovation of costume culture.

In summary, the three design objectives respond to the core challenges from

three dimensions: value orientation, learning pathways, and multi-stakeholder collaboration. Specifically, they address the conflict between economic interests and wisdom inheritance by building a culturally value-driven transmission mechanism; tackle the crisis of cultural identity by establishing flexible and structured educational pathways to rebuild recognition and transmit skills; and respond to weakened cultural sustainability by broadening transmission channels through multi-stakeholder collaboration, ensuring the living continuity of Yi costume culture..(Figure 58)

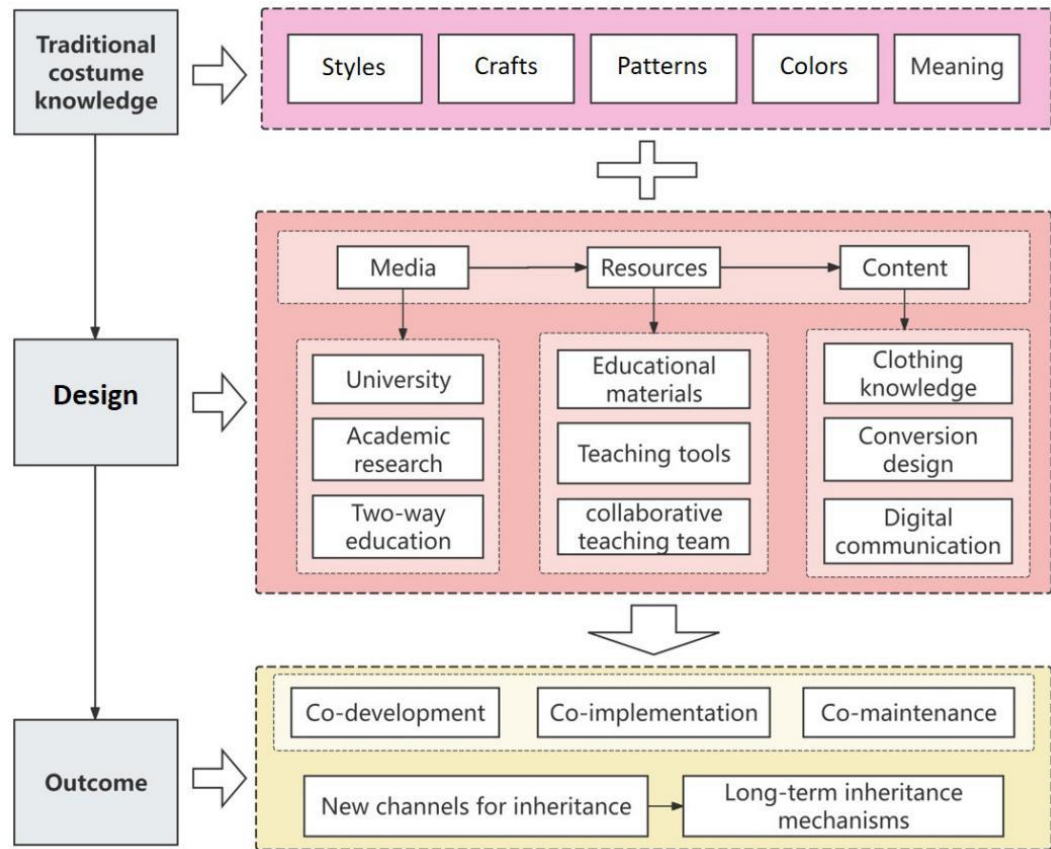


Figure 58 Design Concept
Source: created by the author

4.3 Problem solving Demonstration 1 and Evaluate

4.3.1 Development of the Educational Prototype

Building on a systematic investigation of the Wuding Yi costume culture, this study developed a Two-way Education Program grounded in participatory design theory to support the sustainable inheritance of Yi costume culture. The development of the program and its accompanying curriculum materials followed the methodological framework of participatory design (Hansen et al., 2019), with the overall process divided into four stages: Field Studies, Workshops, Prototyping, and Evaluation.

Throughout these stages, the research team employed mechanisms such as Collaborative Reflection, Collaborative Ideation, Collaborative Design, and Collective Empowerment to systematically construct the course prototype—from

cultural knowledge collection to curriculum design. This prototype aims to build an integrative educational platform that connects community cultural stakeholders with external learning groups, thereby fostering the dynamic transmission and innovative dissemination of Wuding Yi costume culture.(Figure 59)

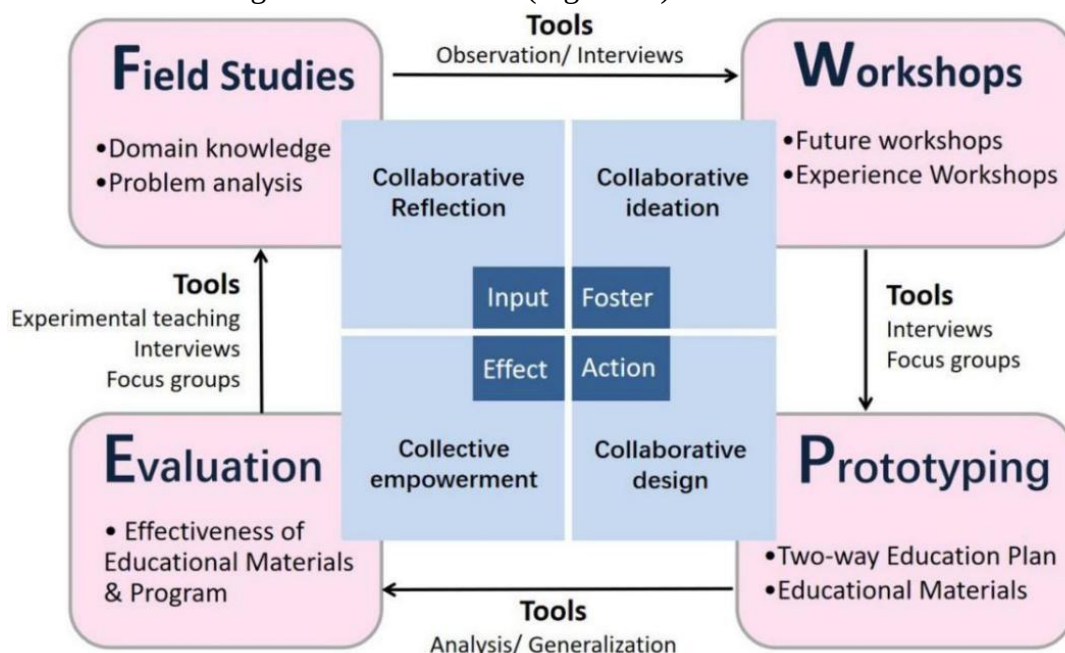


Figure 59 Design Participatory Design Activities and Mechanisms

Source: created by the author

4.3.1.1 Field Studies Stage

Between January 2023 and June 2024, the researchers conducted extended fieldwork to systematically gather domain knowledge related to Wuding Yi costume culture, including local history, cultural context, geographic environment, and the forms, craftsmanship, and symbolic meanings of traditional costumes. In parallel, a problem analysis was carried out to identify and define the primary challenges facing the inheritance of Yi costume culture, providing critical input for subsequent curriculum design. The research employed multiple methods, such as participatory observation, interviews, focus group discussions, and document and artifact analysis.

This phase not only yielded a rich repository of cultural data but also established a strong foundation of trust and collaboration with the Yi community, ensuring a solid basis for the co-creation and implementation of the educational program.

4.3.1.2 Workshops Stage

To ensure both the feasibility of the educational program and meaningful community engagement, the research team organized three collaborative workshops—The Future Workshop, The Wearing Experience Workshop, and The Embroidery Experience Workshop. Each workshop focused on building cooperative relationships, co-creating the educational prototype, and optimizing curriculum design. Following these workshops, a focus group discussion was conducted to integrate multi-stakeholder perspectives and further refine the design framework.

Workshop 1: The Future Workshop

Held in April 2025 at the Wuding Yi Embroidery Center, this workshop was

organized by the research team and brought together 21 participants, including 10 Yi community members, the President of the Wuding Yi Embroidery Association, 4 officially recognized Yi costume inheritors, 4 university experts, and 2 local government officials.(Figure 60)



Figure 60 Future Workshop Seminar

Source: by the author

The workshop began with an introduction by the Association President, outlining the goals and procedures of the session. This was followed by collective discussions centered on the protection and transmission of Yi costume culture, covering key themes such as problem identification, resource allocation, and action planning.

A major outcome of the session was the signing of a three-year cooperation agreement between the community and the university, which established the core components of the educational program:



Figure 61 Cooperation Agreement Signed

Source: Guo,2025

•Yi Community Training Program: Conducting two cultural training sessions

annually, with a minimum of 100 participants each year, primarily targeting women aged 20 to 40. The program aims to strengthen cultural identity, enhance traditional costume-making skills, and foster intrinsic motivation for cultural transmission.

- University Education Program: Developing five structured courses, each ranging from 18 to 36 instructional hours, covering both traditional cultural education and artistic design education. The courses are supported by ongoing academic research to ensure iterative refinement while enriching elective offerings at the university.

- Supporting Educational Materials: Co-developed by the community and the university, these resources are designed to facilitate the implementation of both the training program and the university courses. The materials and courses will be co-taught and maintained collaboratively by community members and university educators.(Figure 61)

Workshop 2: The Wearing Experience Workshop

Held at the university in April 2025, this workshop aimed to collect multidimensional feedback from participants on teaching methods and course content through authentic wearing experiences and interactive exchanges, providing valuable insights for subsequent course design. This event was not only a teaching experiment but also a multi-layered exploration integrating cultural experience, knowledge transmission, and emotional engagement.

Participants included 50 university students, 2 Yi costume culture inheritors, and 4 university experts. .(Figure 62)



Figure 62 The Wearing Experience Workshop

Source: by the author

The workshop followed a core process of “experience–understanding–feedback” and consisted of the following activities:

- Guided Wearing and Instruction: Yi inheritors guided student volunteers in wearing traditional Wuding Yi male and female costumes dating back over a century, explaining the sequence of dressing, the meanings of patterns, color coordination, and

related cultural etiquette.

- Exhibit Display and Cultural Sharing:** Students were introduced to other valuable traditional costumes and embroidery pieces, with explanations of their functions and symbolic meanings in various contexts such as weddings, rituals, and festivals, enabling participants to perceive the cultural logic embedded in the attire.

- Interaction and Open Discussion:** Students were encouraged to ask questions during the experience and engage in open discussions about the challenges of transmitting Yi costume techniques and culture, fostering deeper dialogue and reflection

Throughout the workshop, the researcher employed participatory observation and real-time note-taking to collect participants' experiences and feedback. This multi-sensory immersive experience not only enhanced students' cultural awareness and engagement but also provided strong empirical support for refining future course strategies, optimizing content, and designing more interactive learning experiences.

Workshop 3: The Embroidery Experience Workshop

Held in April 2025 at the university, this workshop aimed to systematically explore the challenges faced by beginner learners in acquiring Yi traditional embroidery skills, evaluate the suitability of different teaching methods, and determine appropriate time allocations for instruction. Participants included two officially recognized inheritors of Yi costume culture, twenty-five university students from diverse academic backgrounds, and two university experts specializing in educational research.



Figure 63 The Embroidery Experience Workshop

Source: by the author

The workshop began with the inheritors providing an introduction to three basic Yi embroidery techniques through live demonstrations and explanatory narratives, helping students establish foundational knowledge before engaging in practical exercises. The session then transitioned to a hands-on practice phase, where the inheritors demonstrated each step in detail and offered personalized guidance based on individual students' skill levels. During this stage, students practiced fundamental techniques such as basic stitching, thread handling, and pattern positioning, with the goal of creating a small embroidered brooch as their initial project. (Figure 63)

The practical session lasted approximately two hours, during which most

students successfully produced basic, recognizable pieces. Although the products exhibited limitations in stitch precision and color coordination, the act of completing a tangible piece significantly enhanced students' sense of achievement and deepened their cultural engagement. Throughout the session, the researchers collected valuable empirical data through systematic observation, interactive questioning, and informal interviews. This data, which covered aspects such as the configuration of teaching toolkits, the design of instructional steps, learner adaptability, and common operational challenges, provided critical insights for refining the structure and content of future curriculum modules.

Focus Group

Following the three co-creation workshops, the research team convened a focus group comprising 30 university students, 3 costume culture inheritors, and 4 academic experts. The objective was to collect stakeholder feedback on the educational prototype through a process of collective learning and reflective dialogue.

The session opened with an introductory lecture on Wuding Yi costume culture delivered by the president of the Wuding Yi Embroidery Association, followed by a curated display of physical artifacts—including two complete sets of traditional Yi (Nasu subgroup) costumes, ten garment components and embroidered pieces, and twenty early-stage cultural derivative products crafted by Yi artisans. Participants then engaged in in-depth discussion around prospective teaching content, pedagogical approaches, expected outputs, and intended learning outcomes. (Figure 64)



Figure 64 Lectures, Artifact Display and Discussion

Source: by the author

Analysis of the collected feedback yielded the following themes:

- **Stakeholder Perspectives.** Distinct emphases emerged across participant groups. The inheritors prioritized the core cultural values and traditional continuity of Yi costume culture, advocating in-person experiential learning and intergenerational transmission. Students favored digital modes of presentation and innovative design, with an interest in the contemporary transformation of cultural elements. Experts focused on curricular coherence, knowledge transmission pathways, and mechanisms for continuous improvement. Across groups, there was broad consensus that the core values of Yi costume culture should ground the curriculum, that experiential pedagogy is desirable, and that innovation is essential for both course design and

cultural sustainability. (Figure 65)

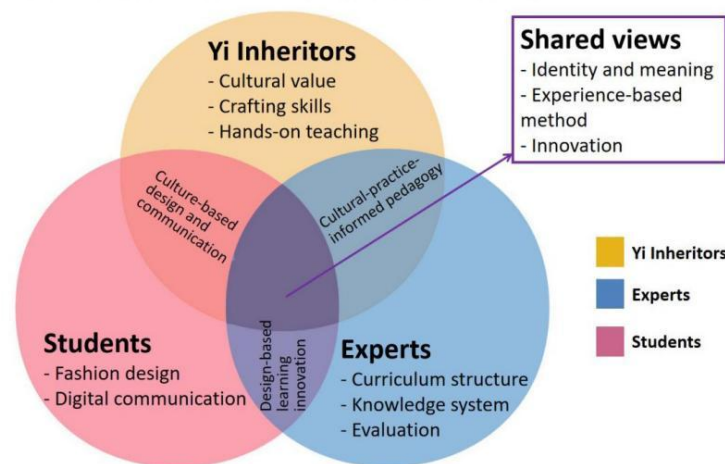


Figure 65 Participant Insights

Source: by the author

•Thematic Clustering of Feedback. Inputs were structured into four domains to inform curriculum development:

- (1) Teaching Content—cultural background, traditional techniques, and avenues for innovative transformation;
- (2) Teaching Methods—co-teaching by inheritors and university educators, with an emphasis on experiential learning;
- (3) Teaching Outputs—embroidered and paper-cut works, designs for cultural derivative products, and digital communication artifacts;
- (4) Learning Outcomes—growth in cultural understanding and identity formation, acquisition of practical skills, capacity for creative design translation, and competence in digital dissemination. (Figure 66)

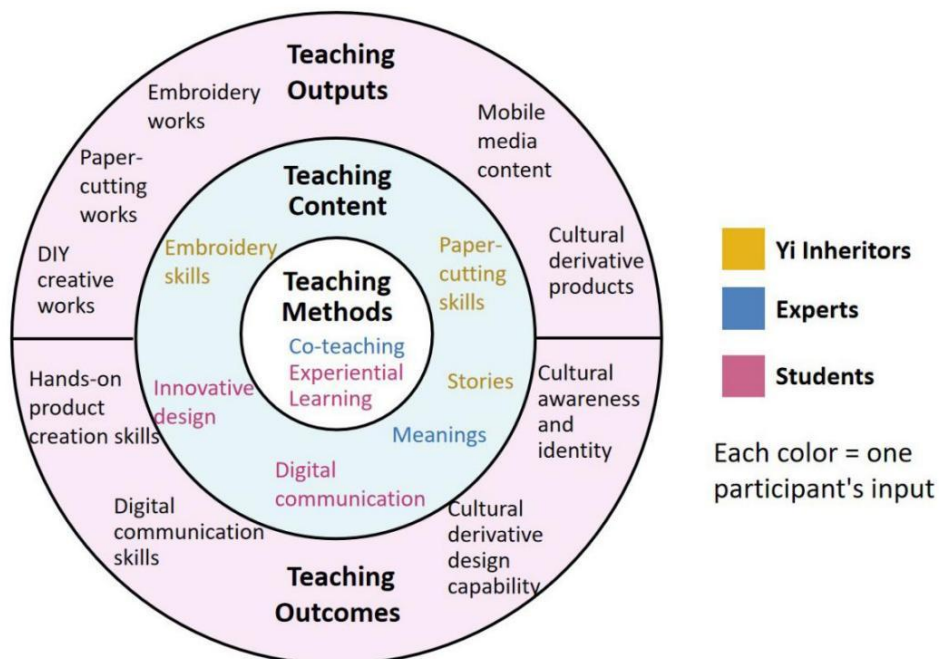


Figure 66 Focus Group Feedback Clusters

Source: by the author

•From Feedback to Curriculum Prototype Flow. Suggestions and concepts contributed by inheritors, students, and experts were consolidated by similarity into core thematic strands that served as design drivers. The process proceeded as follows: (i) collect experiential insights from the Future Workshop, the Wearing Experience Workshop, the Embroidery Experience Workshop, and the focus group; (ii) conduct thematic clustering across teaching content, pedagogical methods, and anticipated outcomes; (iii) translate design insights into an articulated curriculum structure; and (iv) finalize the educational prototype comprising five courses.(Figure 67)

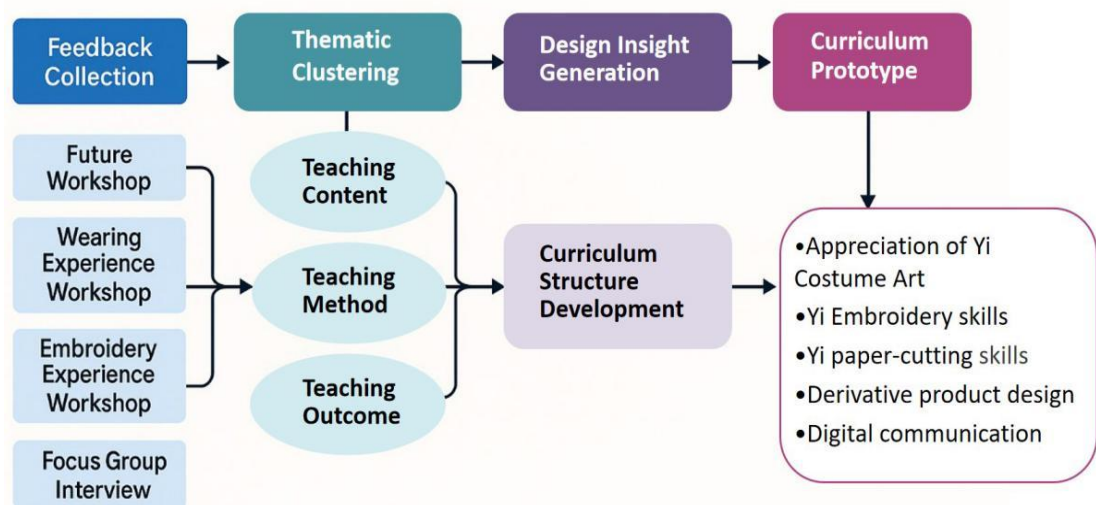


Figure 67 From Feedback to Curriculum Prototype Flow

Source: by the author

4.3.1.3 Course Prototype Design

Based on the above research findings, a collaborative team consisting of four university educators, three official inheritors of Yi costume culture, and two Yi artisans jointly developed five courses and their corresponding educational resources, forming a comprehensive learning pathway that integrates cultural cognition, skill transmission, creative design, and digital communication. Among these, the teaching materials for *Appreciation of Yi Costume Art* and *Experience of Yi Embroidery Skills* were designed and completed by the researcher, representing the core educational outcomes of this research.

Course 1: Yi Costume Art Appreciation

(1) Course Objective

The course *Appreciation of Yi Costume Art* constitutes an essential component of this study's participatory educational program. Its design objective is to introduce the artistic forms and cultural meanings embodied in Yi costumes, guiding learners to understand their historical and artistic value and to appreciate the intangible cultural wisdom they contain. The expected learning outcomes are to stimulate learners' interest in Yi costume culture, cultivate their aesthetic appreciation and cultural understanding, and thereby enhance their sense of cultural appreciation and identity.(Figure 68)

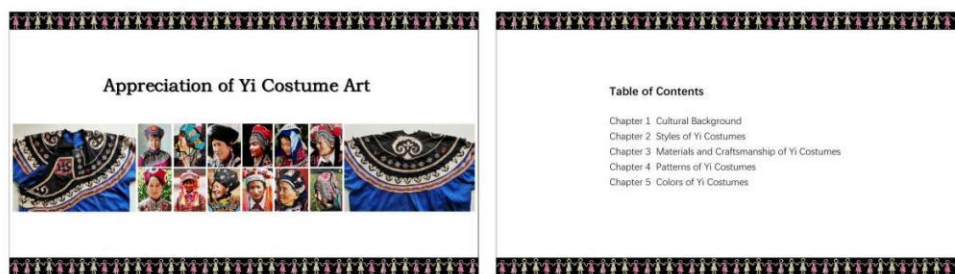


Figure 68 Course 1 Yi Costume Art Appreciation
Source: by the author

(2) Course Content

The course is structured into five chapters, progressing from cultural background to visual appreciation.

Chapter 1. Cultural Background introduces the history and cultural formation of the Yi ethnic group, outlining the development and key periods of Yi costume evolution and describing the geographical background of Wuding County. This chapter presents Yi costumes as both symbols of Yi cultural identity and significant carriers of intangible cultural heritage. (Figure 69) (Figure 70)

Chapter 1: Cultural Background

- I. History of the Yi Ethnic Group
 - 1. The Yi — An Ancient Ethnic Group
 - 2. Formation of Yi Culture
 - 3. Development and Key Periods of Yi Ethnic Costumes
- II. Geographical Location
- III. Overview of Yi Costumes
 - 1. Yi Costumes — A Symbol of Yi Culture
 - 2. As Intangible Cultural Heritage Projects

Figure 69 Chapter 1 Teaching Module Structure
Source: by the author



Figure 70 The first pages of each section in Chapter 1
Source: by the author

Chapter 2. Styles of Yi Costumes explores the evolution and classification of Yi costume styles, including women's and men's clothing, accessories, and overall stylistic characteristics. Through visual comparison and stylistic analysis, learners are guided to recognize the diversity of Yi costume forms and their regional variations.(Figure 71) (Figure 72)

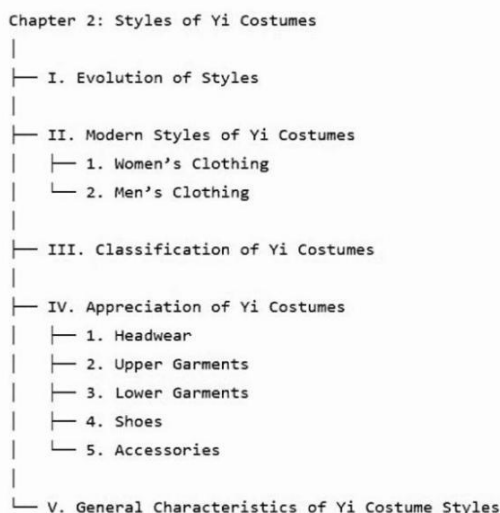


Figure 71 Chapter 2 Teaching Module Structure
Source: by the author

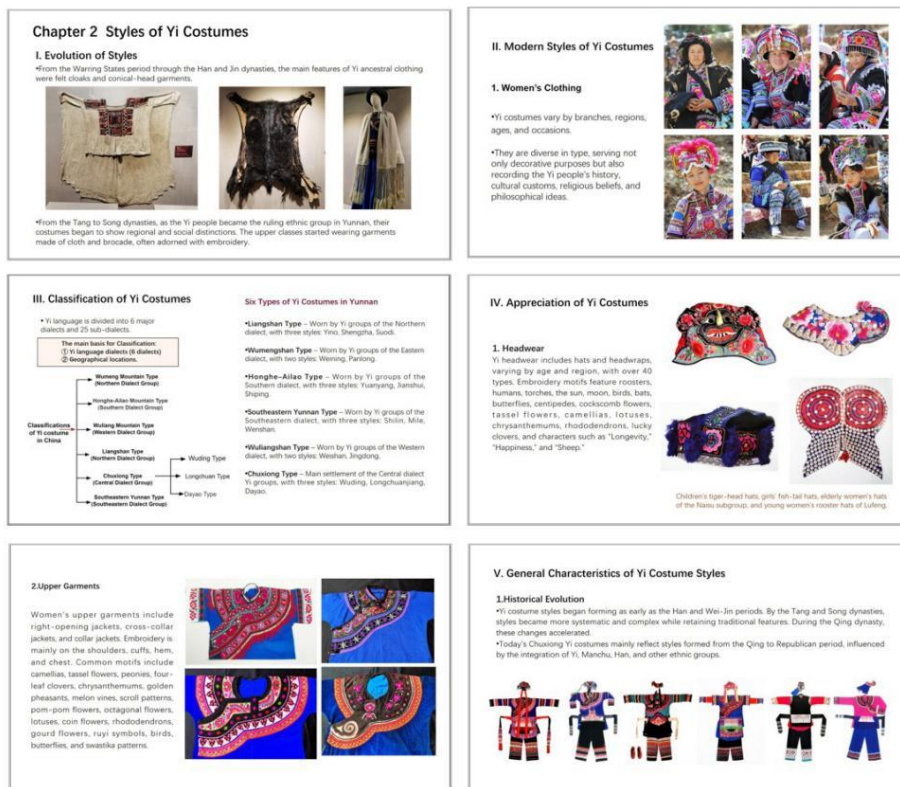


Figure 72 The first pages of each section in Chapter 2
Source: by the author

Chapter 3. Materials and Craftsmanship of Yi Costumes focuses on the tangible wisdom of Yi costumes, providing a systematic introduction from material development to embroidery craftsmanship. Learners are introduced to fourteen representative stitching techniques and come to understand embroidery as a core technique of cultural expression. This chapter also includes a hands-on practice session in which students engage in embroidery guided by an official Yi inheritor, integrating theory, practice, and self-discovery.(Figure 73) (Figure 74)

Chapter 3: Materials and Craftsmanship of Yi Costumes

I. Development of Yi Costume Materials

II. Craftsmanship of Yi Costumes

1. Yi Costumes – Multiple Crafts

2. Embroidery – The Core Technique

III. History of Yi Embroidery

1. Ancient Period

2. Evolution of Yi Embroidery

IV. Techniques of Yi Embroidery

14 Stitch Skills

Figure 73 Chapter 3 Teaching Module Structure

Source: by the author

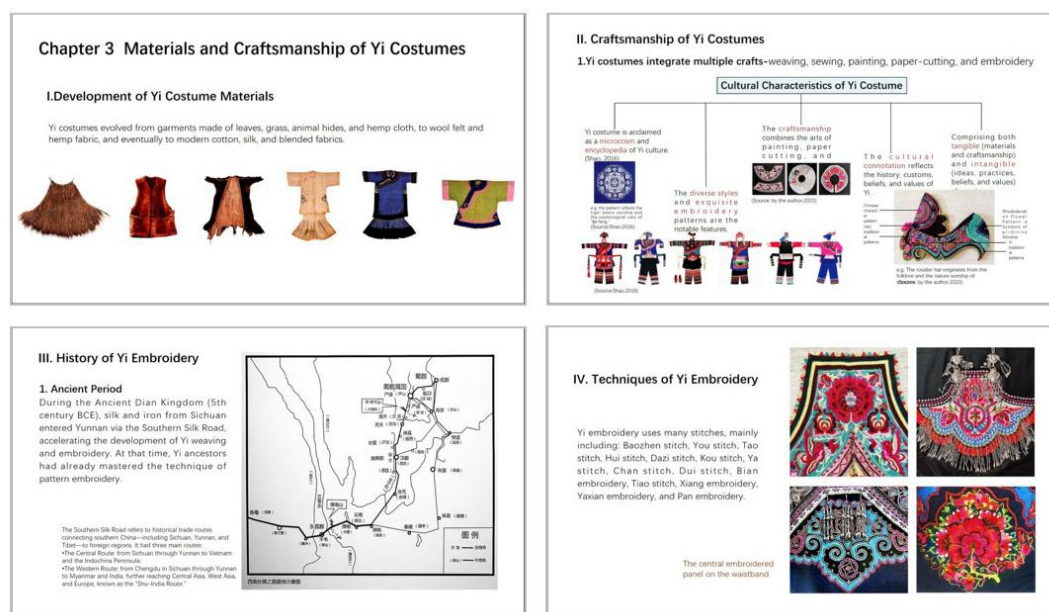


Figure 74 The first pages of each section in Chapter 3

Source: by the author

Chapter 4. Yi Costume Patterns analyzes the cultural connotations of Yi costume patterns from three dimensions—the natural environment, social context, and belief systems. It further discusses the symbolic meanings of patterns in cultural integration and cosmology. Through visual analysis of representative Wuding Yi patterns, learners develop the ability to interpret visual forms as carriers of cultural

meaning.(Figure 75) (Figure 76)

Chapter 4: Yi Costume Patterns

- I. Yi Costume Patterns and the Natural Environment
- II. Yi Costume Patterns and Social Context
- III. Yi Costume Patterns and Cultural Integration
- IV. Yi Costume Patterns and Beliefs
- V. Yi Costume Patterns and Cosmology
- VI. Representative Patterns in Wuding Yi Costumes

Figure 75 Chapter 4 Teaching Module Structure
Source: by the author

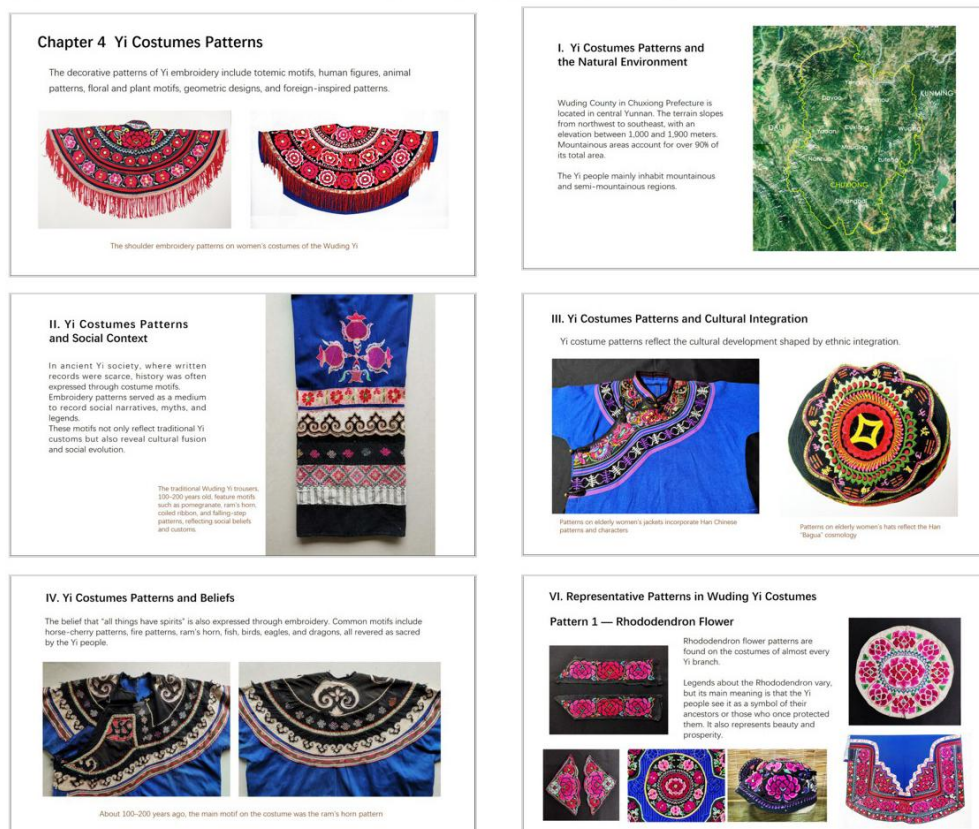


Figure 76 The first pages of each section in Chapter 4
Source: by the author

Chapter 5. Colors of Yi Costumes interprets the Yi people's color philosophy, including the system of three primary colors and the cultural significance of black as the base tone. The chapter also analyzes the symbolic meanings of red, yellow, blue, and green in embroidery, revealing the aesthetic logic and cultural symbolism embedded in color combinations.(Figure 77) (Figure 78)

- Chapter 5: Colors of Yi Costumes
- ├ I. Three Primary Colors of the Yi
 - ├ II. Base Colors of Yi Costumes
 - └ Black
 - └ III. Embroidery Colors of Yi Costumes
 - ├ 1. Red and Yellow
 - ├ 2. Blue
 - └ 3. Green

Figure 77 Chapter 5 Teaching Module Structure

Source: by the author

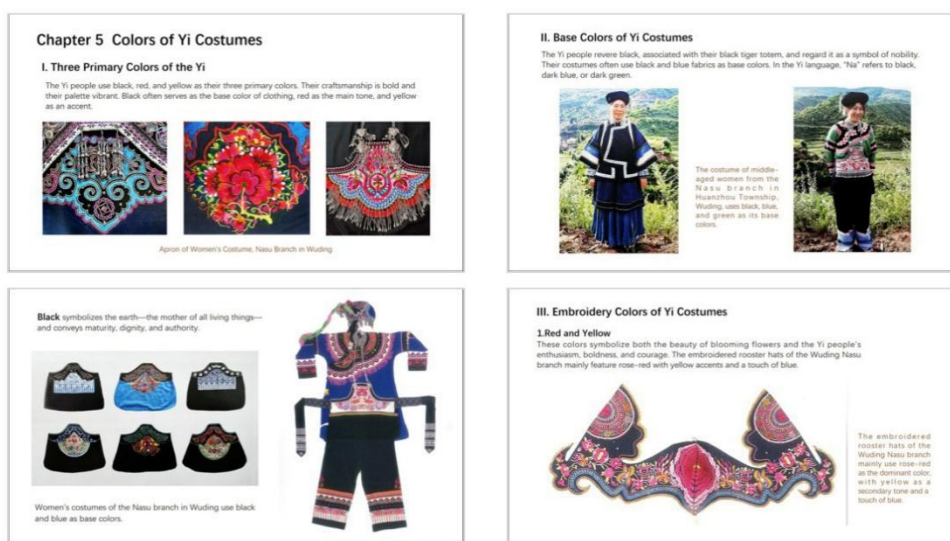


Figure 78 The first pages of each section in Chapter 5

Source: by the author

(3) Teaching Materials and Methods

The teaching materials for the course were independently developed by the researcher and include the syllabus, printed handouts, and accompanying digital materials, supplemented with multimedia resources introducing the history, culture, costumes, and embroidery of the Yi ethnic group. The course integrates theoretical study, hands-on practice, and cultural interpretation to promote learners' cognitive and affective development, fostering the sustainable inheritance of Yi costume culture and the advancement of participatory education.

The teaching methods combine university lectures, classroom discussions, post-class data collection, and cultural analysis. The course runs for 12 weeks, totaling 36 contact hours, with a class size of 40 students. Emphasizing the integration of theory and practice, the course includes experiential sessions guided by Yi embroidery inheritors, enabling students to engage directly with costume embroidery techniques and facilitating interaction and cultural exchange between traditional artisans and learners.

Course 2: Experience of Yi Embroidery Skills

(1) Course Objectives

This course aims to help learners understand the craftsmanship and cultural characteristics of Yi embroidery and Yi costume culture through hands-on experiential teaching. Following a learning path of “*Cultural Cognition – Technique*

Experience – Creative Application”, the course guides learners to acquire embroidery skills, perceive cultural values, and develop a sense of cultural identity through practice.

The expected learning outcomes include:

- Mastering four representative embroidery techniques and operational methods used in Wuding Yi costumes;

- Understanding the historical development, cultural symbolism, and artistic characteristics of Yi embroidery;

- Cultivating learners’ interest, appreciation, and cultural understanding of Yi costume culture.

(2) Course Content

The course consists of three chapters, progressing through the three learning stages of cultural cognition, technique experience, and creative application.(Figure 79)

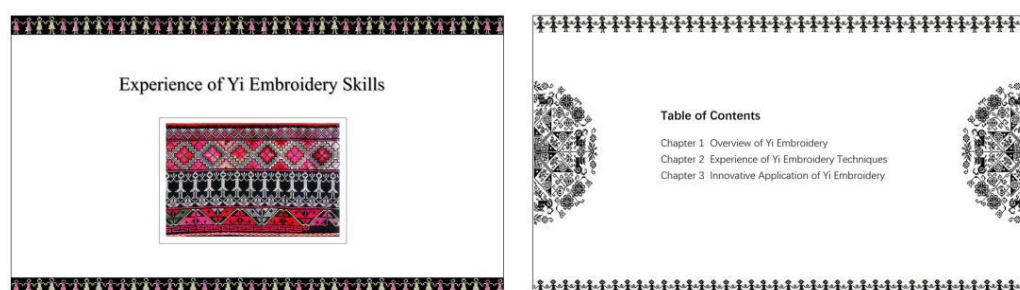


Figure 79 Course 2 Experience of Yi Embroidery Skills

Source: by the author

Chapter 1. Overview of Yi Embroidery introduces the cultural background and historical evolution of Yi embroidery. It covers the formation of Chuxiong Yi culture, the characteristics of Wuding Yi costume culture, and its position within the Yi ethnic cultural system. By tracing the development from the Ancient Dian Kingdom period to the present, this chapter demonstrates the evolution of Yi embroidery in craftsmanship, form, and cultural function. It also analyzes the artistic features of Yi embroidery—such as stitch types, color use, and the influence of China’s “Four Famous Embroideries”—revealing its distinctive regional and ethnic aesthetics.(Figure 80) (Figure 81)

Chapter 1 Overview of Yi Embroidery
I. Cultural Background of the Yi Ethnic Group
1. Formation of Chuxiong Yi Culture
2. Yi Culture in Wuding, Chuxiong Prefecture
3. Yi Costume Culture in Wuding
II. History of Yi Embroidery
1. Ancient Dian Kingdom Period
2. Two Major Developments in Yi Embroidery
3. Modern Development of Yi Embroidery
III. Characteristics of Yi Embroidery
1. A Variety of Stitching Techniques
2. Colorful Patterns
3. Influenced by China's Four Famous Embroideries
4. Distinct Ethnic Characteristics

Figure 80 Chapter 1 Teaching Module Structure

Source: by the author

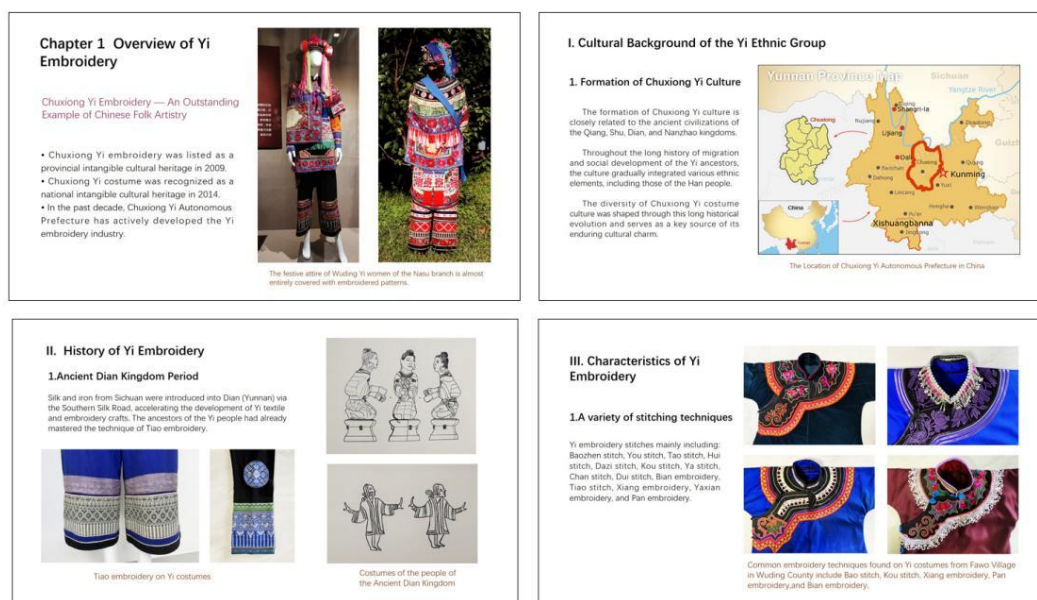


Figure 81 The first pages of each section in Chapter 1

Source: by the author

Chapter 2. Experience of Yi Embroidery Techniques is the core component of the course. This chapter focuses on the practice of four representative stitches: Kou Stitch, Tiao Stitch, Bao Stitch, and Xiang Embroidery. The teaching process adopts the “Explanation – Demonstration – Practice” approach, in which the university instructor explains the cultural background and meanings of the techniques, while the official Yi inheritor demonstrates the embroidery skills and provides individual guidance. (Figure 82) (Figure 83)

Chapter 2	Experience of Yi Embroidery Techniques
I.	Kou Stitch Embroidery
1.	Technique Explanation
2.	Stitch Skill Demonstration
3.	Kou Stitch Hands-on Practice
II.	Tiao Stitch Embroidery
1.	Technique Explanation
2.	Stitch Skill Demonstration
3.	Tiao Stitch Hands-on Practice
III.	Bao Stitch Embroidery
1.	Technique Explanation
2.	Stitch Skill Demonstration
3.	Bao Stitch Hands-on Practice
IV.	Xiang Embroidery
1.	Technique Explanation
2.	Xiang Embroidery Skill Demonstration
3.	Xiang Embroidery Practice

Figure 82 Chapter 2 Teaching Module Structure

Source: by the author

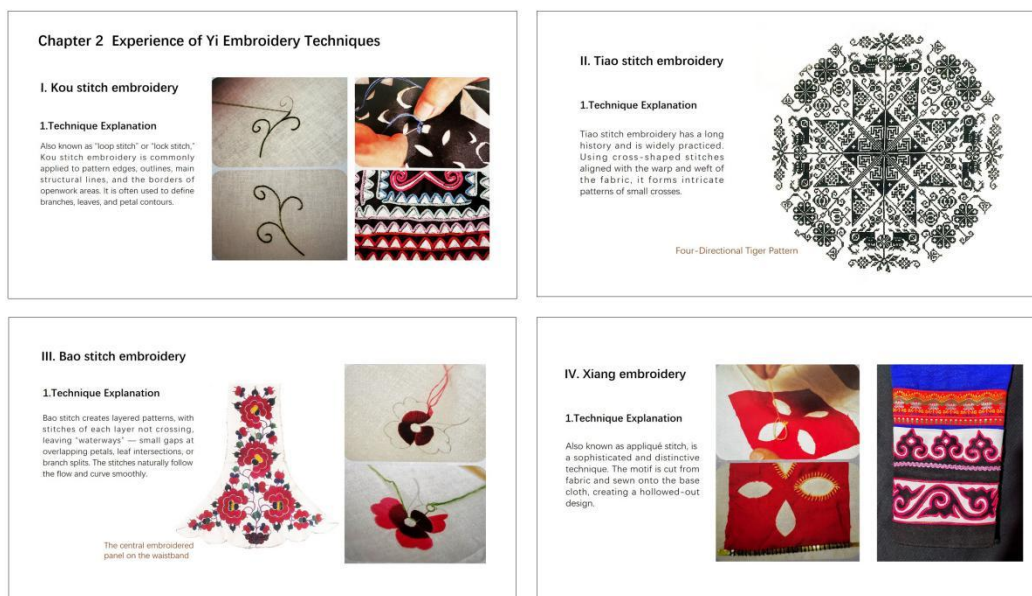


Figure 83 The first pages of each section in Chapter 2

Source: by the author

Chapter 3. Innovative Application of Yi Embroidery guides learners to transform traditional embroidery skills into contemporary design inspiration. It explores directions such as symbol refinement, cultural translation, innovation in materials and craftsmanship, functional transformation, and creative design application. Under the guidance of instructors, learners will engage in basic design exercises and experiment with reinterpreting Yi embroidery elements through modern design thinking. (Figure 84) (Figure 85)

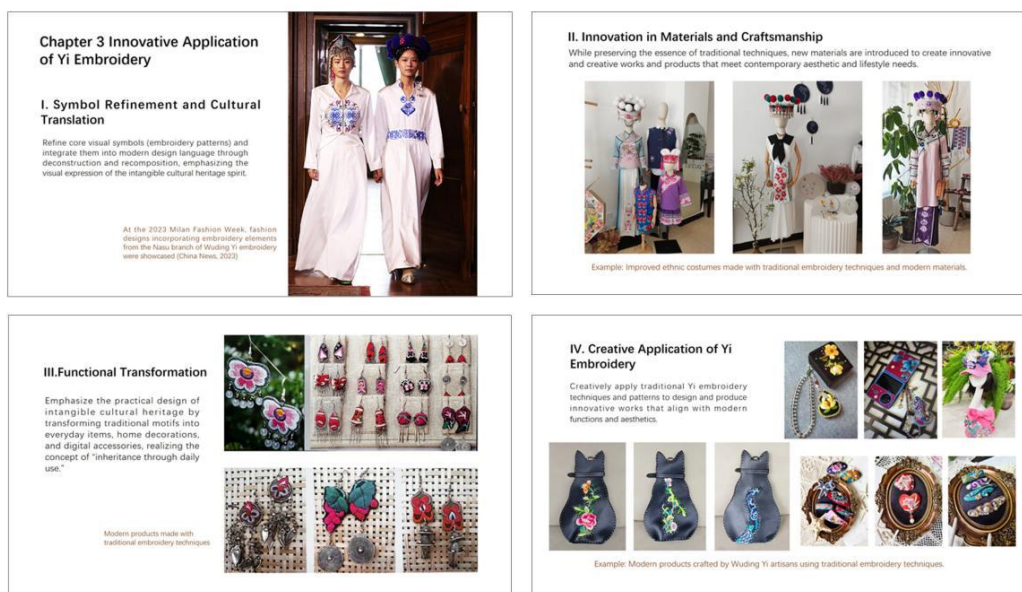


Figure 84 The first pages of each section in Chapter 3

Source: by the author

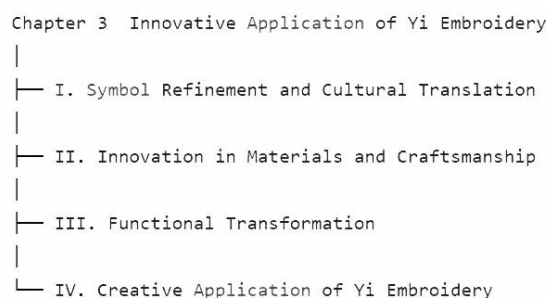


Figure 85 Chapter 3 Teaching Module Structure

Source: by the author

(3) Teaching Materials

The teaching materials for this course were independently developed by the researcher and include the syllabus, handouts, accompanying digital materials, and teaching toolkits. The course focuses on four representative Yi embroidery techniques: Kou Stitch, Tiao Stitch, Bao Stitch, and Xiang Embroidery.

Among them, Tiao Stitch is primarily used for geometric patterns, executed by calculating warp and weft lines directly on the fabric surface; it is relatively simple. Xiang Embroidery is commonly employed for horn-shaped motifs and other simplified designs, created by cutting the pattern from one piece of fabric, locking the edges, and stitching it onto another fabric, making the process less complex.

Kou Stitch and Bao Stitch are mainly used for floral or other intricate motifs that require higher precision. To accommodate different learning levels, the researcher designed and developed two sets of teaching toolkits—Beginner and Medium Level Toolkits—based on these two techniques.

• Medium Level Toolkit

The medium-level toolkit focuses on Bao Stitch and features the Rhododendron Flower pattern, one of the most iconic motifs in the Yi costumes of Wuding County. Regarded as the clan flower of the Yi people, the Rhododendron is frequently embroidered on prominent parts of garments, symbolizing identity and heritage. Due to its intricate form, the motif is suitable for learners with intermediate embroidery skills.

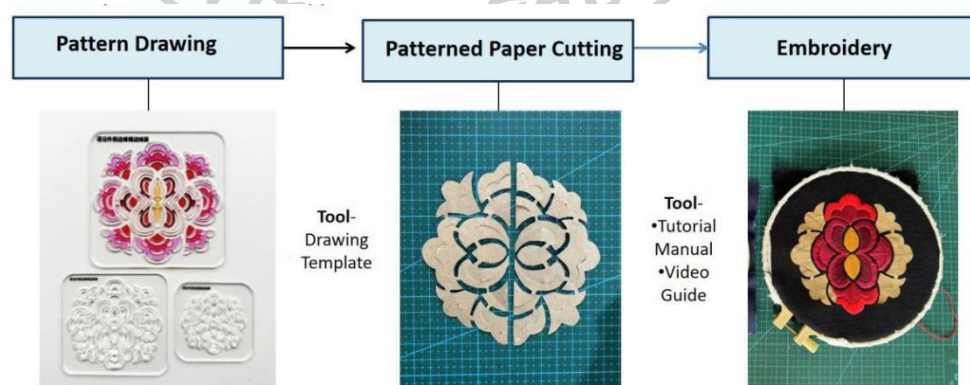


Figure 86 Embroidery Process and Tool Support

Source: by the author

To support the learning process of “*pattern drawing – paper cutting – embroidery based on paper-cut templates*,” the researcher developed multi-sized

drawing templates (5 cm, 7.5 cm, and 10 cm), corresponding to common motif sizes in Yi costumes. One of the templates is presented in color, offering a traditional Color Scheme used in Yi costumes. Learners first complete the drawing and paper-cutting steps before proceeding with embroidery.(Figure 86)

The material kit is designed for approximately 5–6 hours of work and includes: one 15×15 cm piece of dark linen fabric, a No. 8 embroidery needle, five cotton threads matched to the pattern's colors, a 12 cm embroidery hoop, a heat-erasable pen, a leather thimble, a soft ruler, and scissors. All materials are organized on a modular storage board and packed in a fabric bag. The bag also contains a Tutorial Manual, which includes sections on Thread Color Combinations, Stitch Technique Introduction, Embroidery Skill Guide Video, and Materials Introduction, guiding learners through the embroidery process step by step.(Figure 87)

During the pilot testing of the medium-level toolkit, it was found that participants without prior embroidery experience had difficulty completing a 10 cm, five-color Rhododendron motif within 5–6 hours. Traditionally, Yi girls required several years of practice to achieve a comparable level of proficiency. Based on the findings that “medium-level tasks take too long and are not suitable for short courses or novice learners,” the researcher subsequently developed a Beginner Level Toolkit to improve accessibility for entry-level learners.

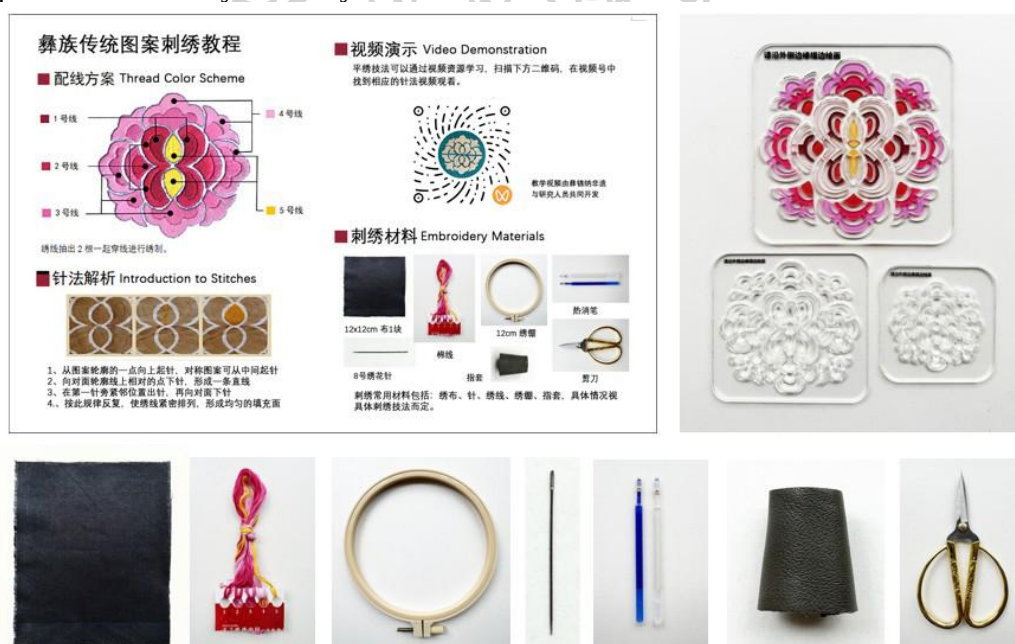


Figure 87 Embroidery Toolkit 1—Medium Level

Source: by the author

• Beginner Level Toolkit

The beginner toolkit focuses on Kou Stitch and adopts a simplified version of the Rhododendron Flower pattern. The motif is characterized by clear contours and minimal layers, rendered in a single color to emphasize its outline—making it ideal for beginners.

To support the “pattern drawing – embroidery” process, the researcher designed drawing templates in three standard sizes (5 cm, 7.5 cm, and 10 cm). Learners can trace the motif directly onto the fabric using a heat-erasable pen and then embroider

along the drawn lines.



Figure 88 Embroidery Toolkit 2—Beginner Level

Source: by the author

The material kit is designed for approximately 4 hours of work and includes: one 12×12 cm piece of linen fabric, a No. 8 embroidery needle, blue thread for embroidery, white thread for stitching, a heat-erasable pen, a leather thimble, a soft ruler, and scissors. All materials are stored on a modular storage board and packed in a fabric bag. A Tutorial Manual is included, containing sections on Stitch Technique Introduction, Materials Introduction, Embroidery Steps, and Embroidery Skill Guide Video, enabling learners to progressively master Yi embroidery techniques. (Figure 88)

(4) Teaching Method

The course adopts a co-teaching model combining university lecturers and officially recognized inheritors of Yi costume culture, integrating cultural theory with practical craftsmanship. It runs for 12 weeks, totaling 36 contact hours, with a class size of 30 students. University lecturers are responsible for teaching cultural knowledge and design concepts, using the researcher-developed teaching materials and multimedia resources to systematically present the background and connotations of Yi costume culture. The inheritors focus on demonstrating embroidery techniques and providing hands-on guidance to help learners acquire practical skills.

The class emphasizes experiential and participatory learning, encouraging students to engage actively in the making process. Through practice, learners gain a deeper understanding of the cultural value and aesthetic significance embedded in traditional Yi craftsmanship.

In the design of the following three courses, the researcher participated in the design and implementation of the introductory sections related to Wuding Yi ethnic costume culture, and collaborated with other members of the teaching team to plan the overall course structure, module content, teaching methods, and forms of outcomes. These courses were constructed as learning platforms that integrate cultural understanding and creative practice, aiming to guide learners to comprehend the

connection and transformation between traditional Yi costume culture and the contemporary context.

Course 3: Experience of Yi Paper-cutting Skills

The course aims to explore Yi paper-cutting techniques, understand their artistic characteristics and symbolic meanings within Yi costume culture.

The course objectives include: mastering the basic methods and forms of Yi paper-cutting; understanding of the cultural connotations of Yi costume patterns through practical experience; and stimulating learners' creative expression within both traditional and contemporary contexts. (Figure 89)

The course content covers the cultural background of Yi costumes, materials and tools, pattern design, paper-cutting techniques, and the creation of original works. Learners focus on Yi costume motifs and experience their cultural significance and aesthetic value through hands-on paper-cutting activities.

Teaching materials, developed collaboratively by the researcher and the course instructors, include the syllabus, printed handouts, and accompanying digital materials. The core content centers on "Yi costume pattern paper-cutting techniques," "classic Yi costume motifs," and the cultural meanings.

The course adopts a co-teaching model combining university lecturers and Yi paper-cutting artisans, integrating cultural theory with practical craftsmanship. It runs for 12 weeks, totaling 36 contact hours, with a class size of 30 students. University lecturers are primarily responsible for teaching Yi costume culture and design concepts, while artisans provide demonstrations and hands-on guidance. The course emphasizes experiential learning, encouraging students to perceive the cultural value of traditional crafts through creative practice and to explore innovative expressions in contemporary design contexts.

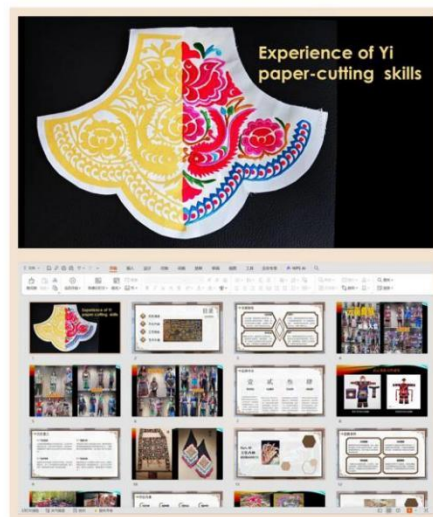
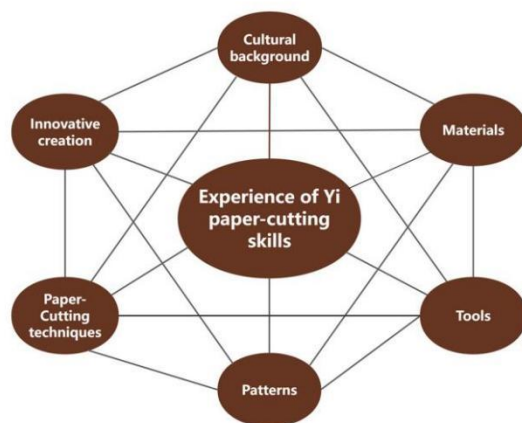


Figure 89 Course Modules and Digital Handouts

Source: by the author

Course 4: Yi Embroidery Derivative Product Design

The course objectives include: mastering methods for extracting Yi costume symbols and translating them into modern design; developing learners' cultural design capabilities; and exploring pathways for converting traditional costume cultural resources into economic and social value.

The course content covers the cultural background of Wuding Yi costumes, pattern and color extraction, digital design, physical prototyping, and lightweight exhibition curation. The core content centers on costume forms (Style, Craft, Pattern, Color), cultural meaning, and design methods for modern cultural derivative products, establishing a teaching framework that integrates cultural understanding with design thinking.(Figure 90)

The teaching materials were collaboratively developed by the researcher and the lead instructor, including the syllabus, printed handouts, and accompanying digital materials.

The course is delivered through a co-teaching model involving the researcher and lead instructor, runs for 12 weeks totaling 36 contact hours, with a class size of 30 students. The course combines theoretical instruction with hands-on practice, using cultural explanation, case analysis, and design exercises to help learners understand the design potential of traditional costume symbols and master the process of transforming cultural resources into innovative products.

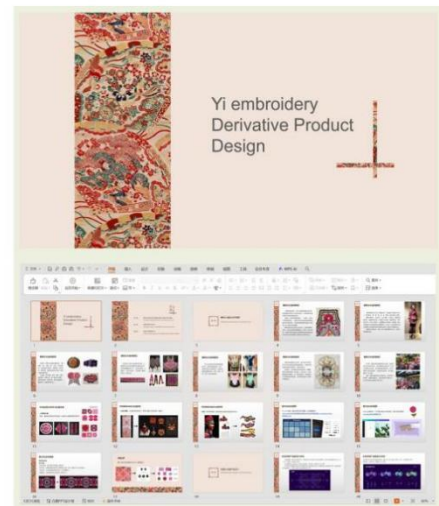
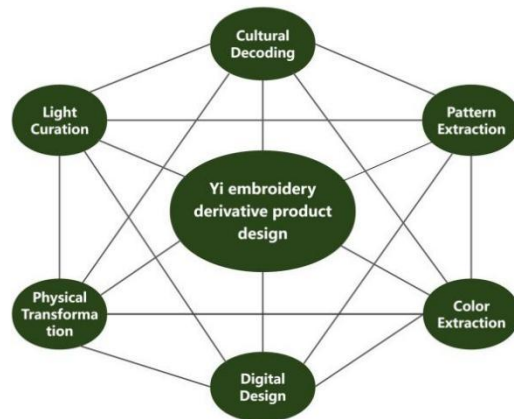


Figure 90 Course Modules and Digital Handouts

Source: by the author

Course 5: Digital Communication of Yi Costume Culture

The course objectives include: helping learners master the application of digital media in the dissemination of traditional culture; exploring pathways for transforming Yi costume culture into digital content and new media communication resources. (Figure 91)

The course covers the cultural background of Yi costumes, short video production, mobile wallpapers, animated GIFs, digital collectibles, and mobile augmented reality (Mobile AR). Its core content focuses on costume forms (Style, Craft, Pattern, Color), cultural meaning, and digital communication methods, forming a teaching framework that integrates cultural understanding with digital creativity.

The teaching materials were collaboratively developed by the researcher and the lead instructor, including the syllabus, printed handouts, and accompanying digital materials, supplemented with extensive online case studies of digital cultural dissemination.

The course is lecturer-led, runs for 12 weeks totaling 36 contact hours, and has a class size of 30 students. It combines theoretical instruction with hands-on practice, using cultural explanations, case studies, and exercises in digital design and new media communication to enhance learners' ability to transform traditional costume culture into digital content and disseminate it effectively.

In summary the course system is designed around the core cultural values of the Yi people, aiming to enhance learners' practical skills and creative thinking while preserving and transmitting traditional culture. The overall design emphasizes operability, replicability, and sustainability, accommodating the learning needs of university students, community members, and non-native audiences.

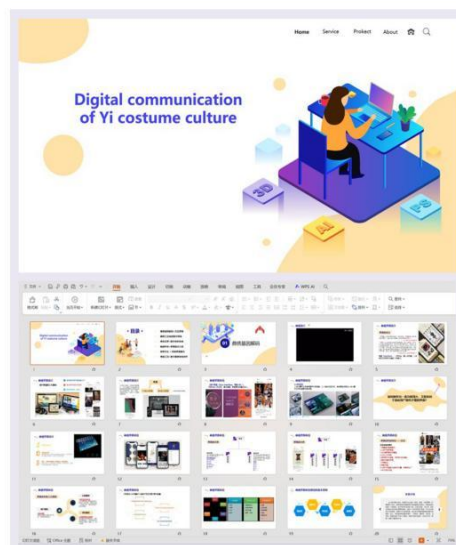
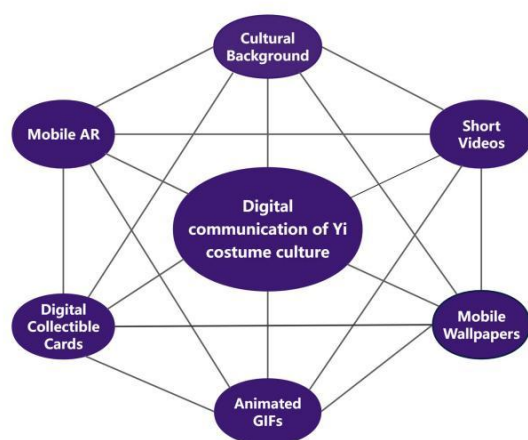


Figure 91 Course Modules and Digital Handouts

Source: by the author

4.3.1.4 Application of the Curriculum System

According to the collaborative plan between the Yi community and the university, the co-developed curriculum system will be implemented in Wuding's Yi community and at the university in ways that are adapted to each environment, context, and specific needs.

Courses (Free Elective Course)	Concept	Participants	Time
Appreciation of Yi Costume Art	Form (Style, Craft, Pattern, Color) + Meaning of Yi costumes	≥100 Yi people/year, mainly aged 20-40	32 hours/year
Experience of Yi Embroidery skills	Crafts + Patterns + Meaning	≥100 Yi people/year, mainly aged 20-40	32 hours/year
Experience of Yi paper-cutting skills	Crafts + Patterns + Meaning	≥100 Yi people/year, mainly aged 20-40	32 hours/year
Yi embroidery derivative product design	Form + Meaning + Design Methods	≥50 Yi Artisans/year	32 hours/year
Digital communication of Yi costume culture	Form + Meaning + Digital Communication Methods	≥50 Yi Artisans and Official inheritors/year	32 hours/year

Table 2 Yi Community Application of Teaching Materials

Source: by the author

In the Yi community, based on the cooperation agreement, the courses aim to help Yi youth reconnect with their costume culture and support the community in establishing a culture-related educational system. University instructors will visit the Yi community twice a year to conduct training, with no fewer than 100 participants annually. Participants are organized by the Yi Embroidery Association, primarily on a voluntary basis, combined with the involvement of artisans, and mainly target youth aged 20 to 40. Additionally, learners are selected according to course content and intended outcomes. For example, the course *Yi Embroidery Derivative Product Design* is recommended for Yi artisans, while *Digital Communication of Yi Costume Culture* is recommended for both Yi artisans and official inheritors. (Table 2)

At the university, the courses are implemented according to the institution's Free Elective Course system. Courses are open to all undergraduate students, with each semester spanning 12 weeks and a total of 36 or 18 instructional hours. Student eligibility is recommended based on the nature of each course: *Appreciation of Yi Costume Art*, *Experience of Yi Embroidery Skills*, and *Experience of Yi Paper-cutting Skills* are open to students of all disciplines; *Yi Embroidery Derivative Product Design* is recommended for undergraduates from the College of Arts, specifically Design and Fine Arts majors; *Digital Communication of Yi Costume Culture* is recommended for undergraduates from the Colleges of Media, Information, Arts, and Education. (Table 3)

Courses (Free Elective Course)	Concept	Students (from the colleges)	Time
Appreciation of Yi Costume Art	Form (Style, Craft, Pattern, Color) + Meaning of Yi costumes	Undergraduates from all colleges	36 hours/semester
Experience of Yi Embroidery Skills	Crafts + Patterns + Meaning	Undergraduates from all colleges	18 hours/semester
Experience of Yi Paper-cutting Skills	Crafts + Patterns + Meaning	Undergraduates from all colleges	36 hours/semester
Yi Embroidery Derivative Product Design	Form + Meaning + Design Methods	Undergraduates from art college (Design, Fine Arts)	36 hours/semester
Digital Communication of Yi Costume Culture	Form + Meaning + Digital Communication Methods	Undergraduates from Media, Information, Art, Education colleges	36 hours/semester

Table 3 University Application of Teaching Materials

Source: by the author

Regarding teaching execution, the courses *Appreciation of Yi Costume Art*, *Experience of Yi Embroidery Skills*, and *Experience of Yi Paper-cutting Skills* adopt a co-teaching model with university instructors and official Yi inheritors and artisans, ensuring the authenticity of cultural content and the effectiveness of instruction. The other two courses are primarily instructor-led, aiming to help learners from diverse

backgrounds develop innovative design and digital communication skills.(Figure 92)

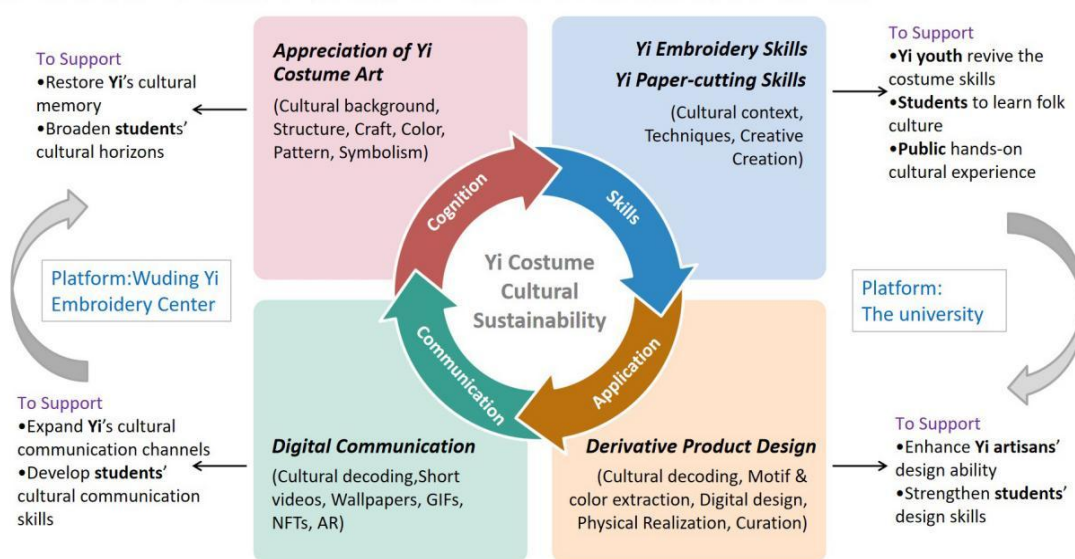


Figure 92 Curriculum Functions and Stakeholder Support

Source: by the author

4.3.2 Evaluation 1: Expert Review

To verify the scientific rigor and feasibility of the curriculum, the complete teaching materials of the five courses were submitted to the university curriculum review committee for expert evaluation. The submitted materials included the syllabus, handouts, digital courseware, and course application forms for each course. The review procedure consisted of material submission, expert evaluation, written feedback, revision of course materials, on-site defense by the applicant, and final approval.

4.3.2.1 Review Procedure

The specific process was as follows: On May 20, 2025, the research team submitted the syllabi, handouts, digital courseware, and course application forms for the five courses; on May 30, three curriculum review experts provided written feedback; on June 9, the course team revised the materials based on the feedback and successfully obtained final approval through an on-site defense. The courses were officially incorporated into the university's interdisciplinary elective course offerings.

4.3.2.2 Expert Feedback and Material Revision

The expert feedback addressed five dimensions: course content, learning objectives, teaching methods, curriculum structure, and assessment mechanisms. The following revision suggestions were provided:

- **Yi Costume Art Appreciation:** It was recommended to construct a "four-dimensional appreciation framework" (Form / Wisdom / Symbols / Insights) and to add assessment criteria to evaluate students' cultural understanding and analytical abilities.

- **Experience of Yi Embroidery Skills:** Experts suggested including an introductory segment on basic knowledge, strengthening the cultural interpretation of typical patterns, and improving teaching tools and materials to make embroidery

instruction more operational and structured.

- **Experience of Yi Paper-cutting Skills:** Recommendations included clarifying the cultural connections between paper-cutting, Yi costumes, and embroidery, emphasizing the identification of symbolic motifs, and enhancing students' cultural cognition.

- **Yi Embroidery Derivative Product Design:** It was advised to reinforce the analysis of the visual and value aspects of Yi costume culture, ensuring that design activities center on Yi costume wisdom and core cultural values.

- **Digital Communication of Yi Costume Culture:** Experts recommended optimizing the course structure according to the logic of “Experience—Cognition—Practice—Innovation,” with clearly defined learning objectives and assessment criteria.

4.3.2.3 Review Results

The course developers revised the materials according to expert feedback and participated in an on-site defense. Upon re-evaluation, all five courses were approved and incorporated into the university's interdisciplinary elective course offerings. This outcome validates the scientific rigor, systematic design, and educational value of the curriculum prototype, demonstrating an effective transition from design to formal implementation. Additionally, the researcher will further refine the teaching tools and materials for the embroidery experience course to enhance its feasibility and effectiveness.

4.3.3 Evaluation 2: Pilot Teaching in Yi Community

4.3.3.1 Overview of the Pilot Teaching

To examine the applicability and effectiveness of the education plan and its associated course materials in a community setting, an experimental teaching session was conducted on June 12, 2025, at the Wuding Yi Embroidery Center. The purpose of this session was to assess the impact of the courses on community members' cultural understanding, skill development, and engagement, while also collecting suggestions for course improvement to inform subsequent iterations.



Figure 93 University Educators Conduct Pilot Teaching

Source: by the author

The participants included three educators and 25 Yi community members, representing a range of age groups (2 participants over 50 years old, 6 participants over 40, 14 participants over 30, and 3 participants over 20).

The experimental teaching covered two main modules: the cultural background of Yi costume and design principles for cultural derivative products. Each module lasted one hour, with a total duration of two hours.

The teaching procedure was as follows: First, university educators delivered the “Cultural Background of Yi Costume” module, systematically introducing the history and cultural context of Yi costume for one hour. This was followed by the “Design Principles for Cultural Derivative Products” module for one hour, guiding participants on how to transform cultural elements into innovative design works. After the course, eight Yi learners were randomly selected to participate in focus group interviews to collect feedback on their learning experience and cultural perceptions. Subsequently, individual interviews were conducted to gather further suggestions and opinions on the courses. (Figure 93)

4.3.3.2 Data Collection

To comprehensively evaluate the effectiveness of the experimental teaching, multiple qualitative research tools were employed for data collection:

- Teaching Observation Notes: Researchers recorded participants’ classroom behavior, interaction frequency, initiative in speaking, and overall engagement on-site, capturing learning behaviors and classroom dynamics.

- Focus Group Interviews: After the teaching session, eight Yi learners participated in focus group discussions to share their experiences, knowledge acquisition, and cultural perceptions.

- In-depth Interviews: Individual interviews were conducted with Yi costume inheritors and artisans to gather detailed suggestions on course design, teaching methods, and the effectiveness of cultural transmission.(Figure 94)



Figure 94 Focus Groups & Interviews After Pilot Teaching

Source: by the author

4.3.3.3 Data Analysis

The collected observation notes and interview data were transcribed and organized. The data were then coded and categorized using Braun and Clarke's (2006) six-phase thematic analysis method. Six core themes were extracted for structured analysis, focusing on: Points of Interest, Cultural Understanding, Knowledge and Skill Enhancement, Engagement Level, Transformative Impact, and Feedback & Suggestions. (Figure 95)

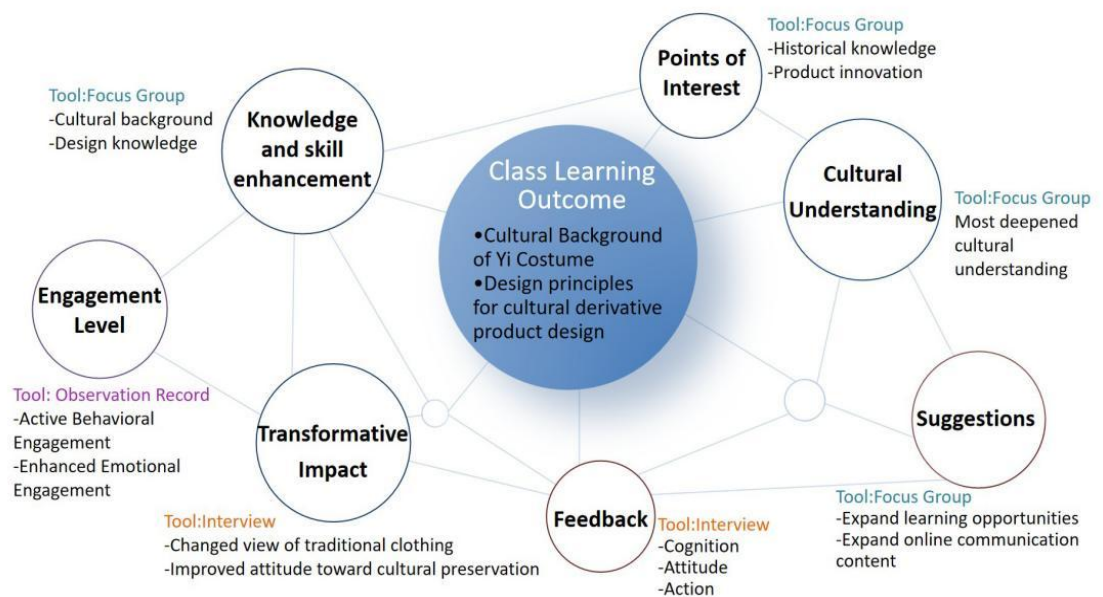


Figure 95 Thematic Analysis of Feedback

Source: by the author

The results of the experimental teaching indicate that participants exhibited positive changes across multiple dimensions:

- Points of Interest:** Most participants showed strong interest in Yi historical knowledge and innovative cultural derivative design. Many reported that it was their first time learning about the history of Yi costumes and the origins of embroidery.

“I used to think these clothes were just beautiful, but I never realized our costumes have such a long history.” (Yi participant 03, female, 32)

“If these patterns were made into jewelry, young people would definitely like them.” (Yi participant 12, female, 36)

- Cultural Understanding:** Through the course, most participants reported a deeper understanding of the cultural meaning behind Yi costumes, as well as enhanced cultural identity.

“I like wearing traditional costumes because the embroidery is pretty, but now I understand they have profound cultural significance.” (Yi participant 07, female, 29)

“Only after learning this did I realize that the clothes we wear contain so much culture.” (Yi participant 11, female, 35)

- Knowledge and Skill Enhancement:** Participants gained both traditional cultural knowledge and modern design skills. The introduction of cultural derivative product design principles was widely welcomed, and many expressed a desire to continue learning in depth.

“It’s the first time I realized that ancient costumes can be transformed into fashion products, and with digital tools, it can be done very quickly.” (Yi participant 18, female, 46)

- Engagement Level:** Teaching observations showed that the majority of participants maintained high attention throughout the class. During discussions, 4 participants spoke proactively; in focus group interviews, 6 participants actively shared their ideas; in in-depth interviews, 5 participants expressed their opinions voluntarily.

“I really want to study design at the university.” (Participant 09, female, 35)

“I will definitely attend the next training session.” (Participant 01, male, 30)

- Transformative Impact:** Interviews revealed that several participants changed their perception of traditional culture from “outdated” to “worthy of preservation,” and expressed willingness to apply traditional elements in modern product design.

“I used to think these old things were outdated, but now I see them as treasures.” (Yi participant 22, female, 24)

“I used to think making clothes was too difficult and time-consuming, but now I feel I can try designing simple, stylish products.” (Yi participant 05, female, 34)

- Feedback & Suggestions:** Participants hoped for more learning opportunities in the future and suggested expanding the educational reach so that more young people in the community could participate. They especially emphasized the need for training in digital media, online communication, and innovative product design skills.

“More Yi young people should be able to learn this content.” (Official inheritor A, female, 55)

“I want to post our works on Douyin so that more people can see them.” (Yi

participant 15, female, 43)

4.3.3.4 Results

The proportion of participants reporting positive changes across five dimensions reflects the overall effectiveness of the experimental teaching: Cultural Understanding 88%, Design Skill Awareness 76%, Cultural Identity 80%, Participation 84%, and Continued Interest 60% (Data source: participant self-report feedback from the experimental teaching). (Figure 96)

These results indicate that the experimental teaching effectively enhanced Yi community members' understanding and knowledge of costume culture, strengthened cultural identity and engagement, and, to some extent, stimulated continued interest in learning.

The community-based experimental teaching validated the feasibility and positive impact of the educational prototype in the Yi community, providing empirical support for course refinement and promotion. Feedback from classroom observations, focus groups, and interviews revealed that collaborative learning effectively fosters participation and agency, while the strong demand for digital communication and innovative product design training highlights key directions for iterative design and sustainable cultural inheritance.

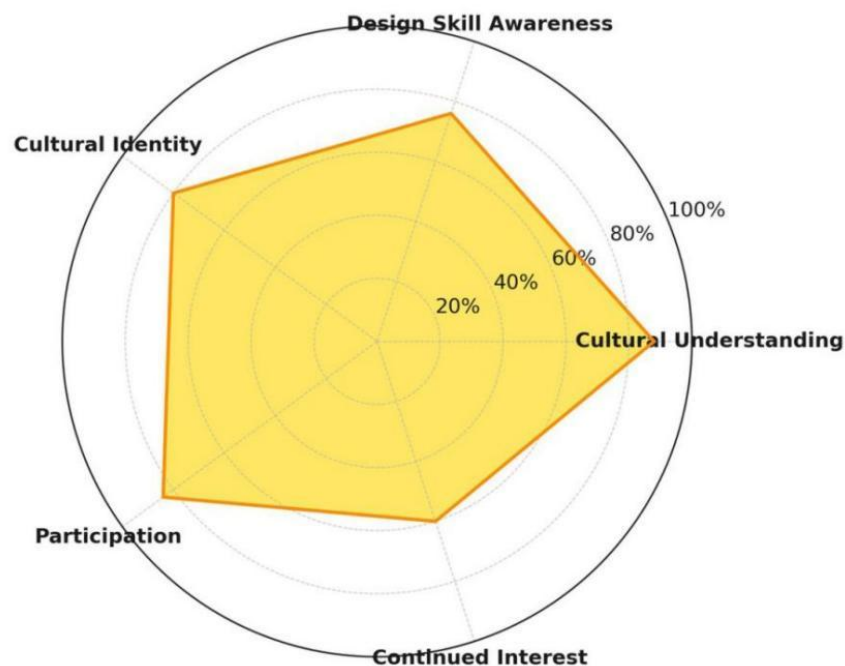


Figure 96 Teaching Effectiveness Evaluation
Source: by the author

4.4 Development of Demonstration and evaluate

4.4.1 Evaluation 3: Embroidery Experience Activity

4.4.1.1 Overview of the Embroidery Experience Activity

To further evaluate the applicability of the embroidery teaching toolkit and the effectiveness of the instructional methods developed in this study, the third validation

activity was conducted on June 16, 2025, at the Wuding Yi Embroidery Center. This validation assessed the operability and learning outcomes of the toolkit and teaching methods among adult learners through a hands-on embroidery experience.

The main objectives of this validation were to: Test the applicability of the medium-difficulty embroidery teaching toolkit in practical operation; Evaluate participants' changes in cognition, skill acquisition, method applicability, user sentiment, and emergence of cultural identity; Provide empirical evidence for optimizing teaching content and for subsequent iterations of the curriculum.

(1) Embroidery Experience Activity Details

- Embroidery Theme: Medium-difficulty Yi “Ma Yinghua” (horse tassel flower) pattern, using the satin stitch technique;

- Learning Duration: 4 hours of intensive learning, including introductory instruction and hands-on practice;

- Teaching Tools: The embroidery teaching toolkit developed in this study, comprising drawing templates, step-by-step illustrated guides, needles, threads, fabric, scissors, and embroidery hoops.

(2) Participant Selection and Profiles

•Participant Selection Criteria

Experience: No prior learning or training in Yi embroidery.

Cultural Exposure: Limited or no familiarity with Yi costume culture.

Interest and Willingness: Demonstrates some interest in embroidery and is willing to actively participate in the experiential activities.

•Participant Profiles

All participants were visitors at the Wuding Yi Embroidery Center and voluntarily enrolled in the study.

Participant A: Female over 40, non-local visitor; no prior exposure to Yi embroidery or costume culture, but interested in ethnic handicrafts.

Participant B: Over 40, non-local visitor; no experience with Yi embroidery; moderate interest in embroidery, motivated mainly by curiosity.

Participant C: Local resident in their 30s; some exposure to Yi costume culture but lacks embroidery experience; participation aimed at deepening understanding of Yi embroidery techniques and cultural significance. (Figure 97)



Figure 97 Visitors Embroidery Experience

Source: by the author

4.4.1.2 Data Collection

To comprehensively evaluate the effectiveness of the embroidery experience, this study employed multiple data collection methods, including pre-test and post-test assessments as well as classroom observation notes. The pre-test recorded participants' skill levels, cognitive understanding, and cultural identity before the experience; the post-test assessed changes across these dimensions after the experience; classroom observations were conducted by the researcher to document participants' operational performance, encountered difficulties, and interactions.

Data collection covered five dimensions, detailed as follows:

- Cognitive Change: Evaluates the extent of participants' improvement in understanding Yi costume culture, scored through the extraction and comparison of key cognitive terms before and after the activity.

- Skill Acquisition: Measures whether participants mastered basic embroidery procedures, including stitching techniques, thread usage, and completion quality of the finished product.

- Method Applicability: Assesses the operability and suitability of the teaching methods and toolkit, evaluated through finished products and the degree of task completion.

- Sentiment: Records participants' engagement, interest, and satisfaction during the experience, quantified through sentiment word extraction and satisfaction ratings.

- Cultural Identity Emergence: Evaluates whether participants developed respect for and interest in Yi culture, determined through analysis of pre- and post-test cognitive keywords and evaluation terms.

4.4.1.3 Data Analysis

This study combined quantitative scoring with qualitative analysis to analyze participants' pre- and post-test data across the five dimensions. The analysis steps were as follows:

- Quantitative Scoring: Each dimension was scored on a scale of 0–5, where 0 indicates no relevant performance and 5 indicates full mastery, high recognition, or high cognitive understanding.

- Comparative Analysis: Changes in scores before and after the embroidery experience were compared for the three participants to identify improvements in each dimension and potential differences.

- Result Interpretation: Based on score changes and participants' completed works, combined with observation notes, the impact of the teaching methods, toolkit, and activity process on learning outcomes was analyzed.

Example of scoring results (Maximum score: 5): (Table 4)

Participant	Time Point	Cognitive	Skill	Method	Sentiment	Identity
Participant 1	Before	1	0	0	2	0
	After	3	5	4	5	4
Participant 2	Before	1	0	0	3	0
	After	4	4	4	5	4
Participant 3	Before	3	1	1	3	2
	After	4	5	5	5	3

Table 4 Scoring Table for Before - After Embroidery Experience
Source: by the author

In the pre-experience assessment, the overall performance of the three participants was generally low, with a total of nine items scoring 0 across the five dimensions, accounting for 60% of all ratings. Among them, the dimensions of Skill Acquisition, Method Applicability, and Cultural Identity received the lowest scores, with all three participants scoring 0 in these areas. This indicates that before the embroidery experience, the visitors lacked relevant knowledge and practical foundations, and their cultural cognition was relatively weak.

After the experience, scores across all five dimensions increased significantly, with the average score rising from 1.1 before the activity to above 4.4 afterward. All participants achieved scores of 4 or higher in the dimensions of Skill Acquisition, Method Applicability, Sentiment, and Cultural Identity, demonstrating substantial learning outcomes and enhanced cultural perception within a short experiential period. Notably, the most significant improvements occurred in Sentiment and Cultural Identity, reflecting the positive role of the embroidery experience in fostering cultural resonance and strengthening identity awareness.

A paired-sample t-test was conducted to analyze the pre- and post-experience

data. The results showed that score differences across all five dimensions were statistically significant ($p < 0.001$), indicating that the embroidery experience effectively enhanced participants' knowledge comprehension, skill mastery, methodological application, and cultural identity construction. Overall, this short-term cultural experience successfully stimulated participants' learning interest and emotional engagement, providing empirical evidence for the design of culture-based experiential education.

4.4.1.4 Results

The analysis showed that, despite the small sample size, the embroidery experience produced clear positive effects across all dimensions:

- Cognitive and Skill Improvement: Participants demonstrated significant progress in both cultural understanding and embroidery techniques. Non-native learners were able to master intermediate-level skills within six hours, whereas traditional learning typically requires about six months, indicating the effectiveness and transferability of the teaching methods and toolkit.

- Tool and Method Applicability: The embroidery toolkit was easy to use, with clear step-by-step instructions, effectively supporting independent learning. Stepwise tutorials, templates, and material kits significantly enhanced skill acquisition efficiency.

- User Sentiment and Cultural Identity: Participants had positive experiences, showing interest in learning embroidery as well as respect for and curiosity about Yi culture.

- Suggestions for Improvement: The instructional time for intermediate-level tasks is relatively long and may not fully suit university classrooms or general hobbyist sessions. To accommodate beginners and short-term experiences, developing a low-difficulty toolkit is recommended to improve accessibility, operability, and participant engagement.(Figure 98)

Overall, this validation activity provides strong empirical support: the embroidery teaching toolkit and methods developed by the researcher proved applicable and transferable for non-native learners, effectively conveying cultural skills in a short time and fostering cultural identity. Furthermore, the results provide a practical foundation for developing future low-difficulty toolkits.

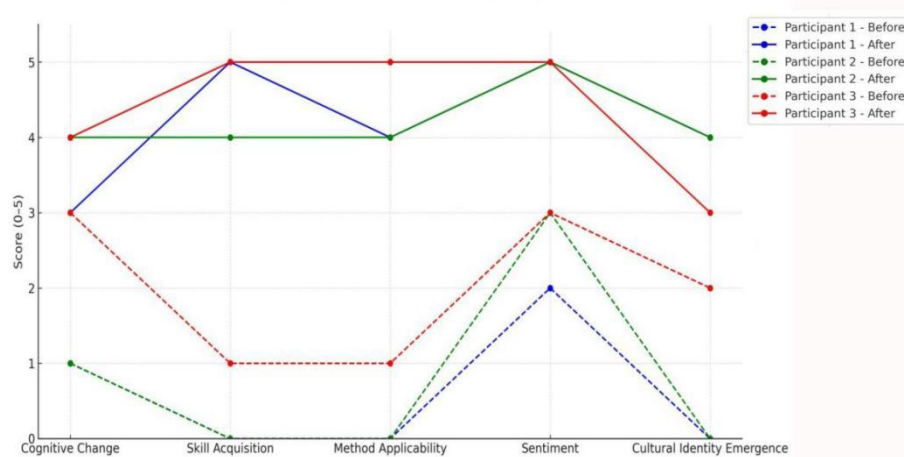


Figure 98 Before - After Changes from Embroidery Experience

Source: by the author

4.4.2 Evaluation 4: Pilot Teaching in the University

4.4.2.1 Pilot Teaching Overview

Based on the findings from Evaluation 3, medium-difficulty embroidery tasks were found to be time-consuming and unsuitable for short classes or novice learners. Therefore, this study developed an Embroidery Toolkit – Beginner Level to enhance usability and learning efficiency. To further verify the toolkit's applicability and effectiveness, a pilot teaching session was conducted at the university on September 16, 2025. The session primarily aimed to assess the usability of the toolkit and the effectiveness of the teaching methods for beginner learners.

The objectives of the evaluation included: testing the practical applicability of the Beginner Level Embroidery Toolkit; assessing participants' changes in cognition, skill acquisition, method applicability, user sentiment, and cultural identity emergence; and providing empirical evidence for optimizing teaching content. (Figure 99)

(1) Pilot Teaching Content

- Embroidery Theme: Beginner-level Yi “Ma Ying Hua” (Horse Tassel Flower) embroidery, using outline stitch and satin stitch techniques.

- Duration: A 4-hour intensive session, including introductory instruction and hands-on practice.

- Teaching Tools: The researcher-developed embroidery toolkit, which included illustrated step-by-step guides, video tutorials, drawing templates, needles, threads, fabric, erasable pens, and thimbles.

(2) Participants

- Number and Demographics: The pilot Teaching involved eleven master's students (ten females and one male), who all participated voluntarily.

- Experience: One student had previously participated in a folk embroidery workshop; the rest were beginners.

- Cultural Exposure: Two students had limited prior knowledge of Yi colors or costume; the others were unfamiliar with Yi costume culture.

- Instructor: One researcher provided guidance on embroidery techniques and cultural background.



Figure 99 Pilot Teaching in the University
Source: by the author

4.4.2.2 Data Collection

To comprehensively evaluate the embroidery experience, multiple data collection methods were employed, including pre-tests, post-tests, and classroom observation. Pre-tests recorded participants' skills, cognitive levels, and cultural identity before the session; post-tests assessed changes across all dimensions; and classroom observations captured participants' performance, encountered difficulties, and interactions.

Data collection covered five dimensions:

- Cognitive Change: Evaluated the improvement in participants' understanding of Yi costume culture by analyzing pre- and post-test key concepts.
- Skill Acquisition: Measured participants' mastery of basic embroidery procedures, including stitching techniques, thread usage, and the quality of completed work.
- Method Applicability: Assessed the usability and applicability of the teaching methods and toolkit through evaluation of completed works and task completion.
- User Sentiment: Recorded participants' engagement, interest, and satisfaction during the session, quantified through sentiment and satisfaction scoring.
- Cultural Identity Emergence: Assessed whether the session fostered respect and interest in Yi culture, determined through analysis of pre- and post-test responses and evaluation keywords.

4.4.2.3 Data Analysis

This study employed a combination of quantitative scoring and qualitative analysis to examine participants' pre- and post-test data across five dimensions. The

analysis procedures were as follows:

- Quantitative Scoring: Participants' performance in each dimension was scored on a scale of 0–5, where 0 indicated no relevant performance and 5 indicated full mastery or high agreement.

- Comparative Analysis: Pre- and post-test scores of all 11 participants were compared to identify the magnitude of improvement and potential differences across dimensions.

- Interpretation of Results: Score changes were analyzed alongside the quality of completed works and classroom observation records to evaluate the effects of teaching methods, toolkit usability, and activity procedures on learning outcomes.

Scoring results (maximum score 5): (Table 5)

Student	Time Point	Cognition	Skill	Method	Sentiment	Identity
student1	Before	1	0	0	0	0
	After	5	4	5	5	5
student2	Before	0	0	0	0	0
	After	4	4	4.5	5	4
student3	Before	0	0	0	0	0
	After	4	4.5	5	5	4.5
student4	Before	1	3	0	1	0
	After	5	5	5	5	5
student5	Before	2	0	0	3	0
	After	5	4.5	5	5	5
student6	Before	0	0	0	0	0
	After	4	↓	5	4	4.5
student7	Before	0	0	0	0	0
	After	4	4.5	5	4.5	4.5
student8	Before	0	0	0	0	0
	After	4	4.5	5	4	4
student9	Before	0	1	0	0	0
	After	4	5	5	5	4
student10	Before	0	0	0	0	0
	After	4	4	4.5	4	4
student11	Before	0	0	0	0	0
	After	5	5	5	5	4.5

Table 5 Scoring Table for Before – After Pilot Teaching

Source: by the author

In the pre-test evaluation, most participants demonstrated a low baseline level, with over 80% of scores across the five dimensions concentrated between 0 and 1. Notably, in the dimensions of Skill Acquisition, Method Applicability, and Cultural Identity, approximately nine participants scored 0, indicating a general lack of prior knowledge and practical experience in Yi embroidery before the pilot teaching.

After the teaching intervention, scores in all dimensions increased significantly.

The average score rose from less than 1 point in the pre-test to above 4.5 points in the post-test, with more than 90% of participants scoring 4 or higher across all five dimensions. Among them, Sentiment and Cultural Identity showed the most substantial improvement, suggesting that participants developed positive emotional engagement and a strengthened sense of cultural identity during the learning experience.

The paired-sample t-test revealed significant differences between pre- and post-test scores in all five dimensions ($p < 0.001$), indicating that the pilot teaching effectively enhanced learners' cognitive understanding, technical skills, methodological application, and cultural empathy. Overall, this teaching model demonstrated high effectiveness in improving learners' multidimensional cultural literacy and practical competence, providing empirical evidence for the feasibility of participatory cultural education.

4.4.2.4 Results

Analysis revealed positive effects across all dimensions:

- Cognitive and Skill Improvement: Participants showed significant progress in cultural understanding and embroidery techniques. Students mastered beginner-level embroidery skills within 4 hours, whereas traditional learning typically requires about one month, indicating the effectiveness of the teaching methods and toolkit.

- Toolkit and Method Applicability: The toolkit was easy to use, with clear step-by-step instructions; video tutorials supported repeated learning and autonomous practice, significantly enhancing skill acquisition efficiency. All participants completed their works, including the one male student, and expressed interest in embroidery.

- User Sentiment and Cultural Identity: Participants reported positive experiences, showing increased interest in embroidery and Yi costume culture, as well as respect and appreciation for Yi cultural heritage.

- Classroom Adaptability: The duration and difficulty of beginner-level embroidery tasks were well suited for university classes and novice learners.

Overall, the pilot teaching provided empirical support that the beginner-level embroidery toolkit and associated teaching methods are highly applicable for beginners and non-native learners, enabling efficient skill acquisition and fostering cultural identity within a short learning period. (Figure 100)

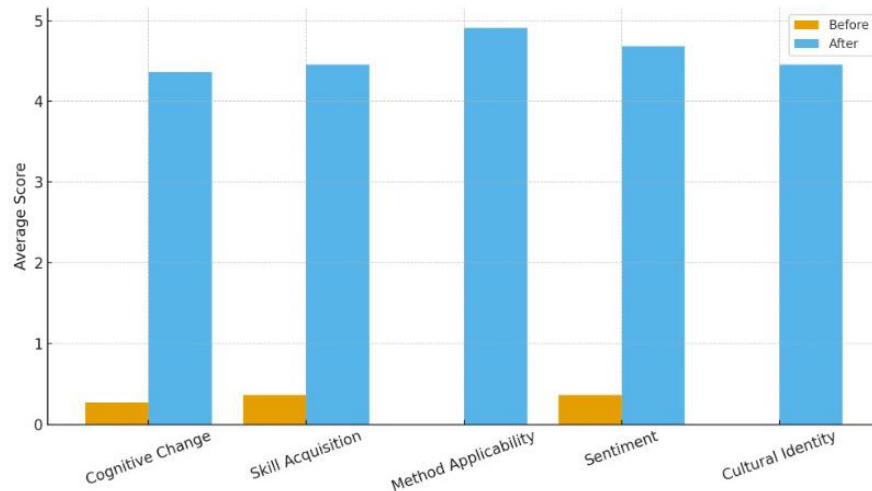


Figure 100 Before-After Changes from Pilot Teaching
Source: by the author

4.4.3 Design Iteration

Based on the results of the four validation rounds, the course system, teaching materials, and toolkits were iteratively optimized to enhance usability, adaptability, and cultural transmission effectiveness.

(1) Course Content Optimization

- Strengthened the digital modules in Digital Communication of Yi Costume Culture, including short video production and creative digital projects, to enhance learners' cultural dissemination skills.

- Adjusted module duration and pacing to improve class efficiency and engagement.

- Increased cultural background explanations and symbolic motif analysis to foster deeper understanding and recognition of Yi costume culture among students and community participants.

(2) Teaching Materials and Toolkit Optimization

- The embroidery course was developed with two levels of difficulty—beginner and intermediate—to accommodate short-term classes and learners with varying skill levels. A modular embroidery toolkit, including illustrated tutorials, instructional videos, drawing templates, and materials, was designed to suit university courses, community training, and workshop settings.

- Optimized operational steps and visual instructions to enhance autonomous learning and completion rates for non-specialist learners.

(4) Iteration Outcomes

The optimized courses and toolkits demonstrated strong adaptability in both community and university settings. The beginner and intermediate toolkits met diverse learning needs, while enhanced digital content and cultural cognition modules effectively promoted skill acquisition and cultural recognition, realizing the sustainable transmission value of the educational prototype.

4.4.4 Summary

This study adopted *Participatory Design* as its core methodology to construct an

educational prototype—the Two-way Education Program—aimed at achieving the sustainable inheritance of Yi ethnic costume culture. The design team consisted of three officially recognized inheritors and two artisans from the Wuding Yi community, as well as four university educators, thereby forming a cross-cultural and cross-disciplinary collaborative design mechanism.

Based on the participatory design process model proposed by Wilkinson (2011), the program development underwent multiple iterative cycles, including *Requirement Analysis*, *Prototype Design Solutions*, *Design and Development*, and *Evaluation and Analysis*. The process was continuously advanced through mechanisms of *Collaborative Ideation*, *Collaborative Design*, and *Collaborative Reflection*.

On this basis, the research outputs include:

- **Network Building** — Established a sustainable educational and cultural exchange network between the Yi community and the university;
- **Curriculum System and Teaching Materials** — Developed a five-course system and corresponding instructional materials tailored to both community-based and university learning environments;
- **Teaching Toolkits** — Modular embroidery toolkits for Yi costume crafts, designed at two difficulty levels (beginner and intermediate), adaptable for university courses, Yi community training, and public cultural experience activities.
- **Implementation Mechanism** — Built a two-way collaboration and feedback system between the community and the university for the implementation of education.

Through multi-dimensional validation—comprising expert review, pilot teaching in the Yi community, pilot teaching at the university, and public experience workshops—the results demonstrate that the research outputs effectively address the Research Problems:

First, by reconstructing a costume culture resource system centered on cultural value, the program effectively repaired the broken chain of cultural inheritance.

Second, the Education Program enabled Yi youth and learners to develop a holistic understanding of the culture's form, craftsmanship, and meaning, thereby alleviating the cultural identity crisis.

Finally, the program established a *Multivalent Model* of cultural inheritance that fosters cultural continuity and social sharing.

In conclusion, the findings of this chapter verify the feasibility and effectiveness of Participatory Design in the inheritance of ethnic culture. Through a co-creative and iterative design process, this study established a *Culture–Education–Design* collaborative mechanism that not only responds to the core issues of cultural identity crisis and the breakdown of family-based inheritance mechanisms, but also provides a transferable design research model for the sustainable development of minority cultures. (Figure 101)

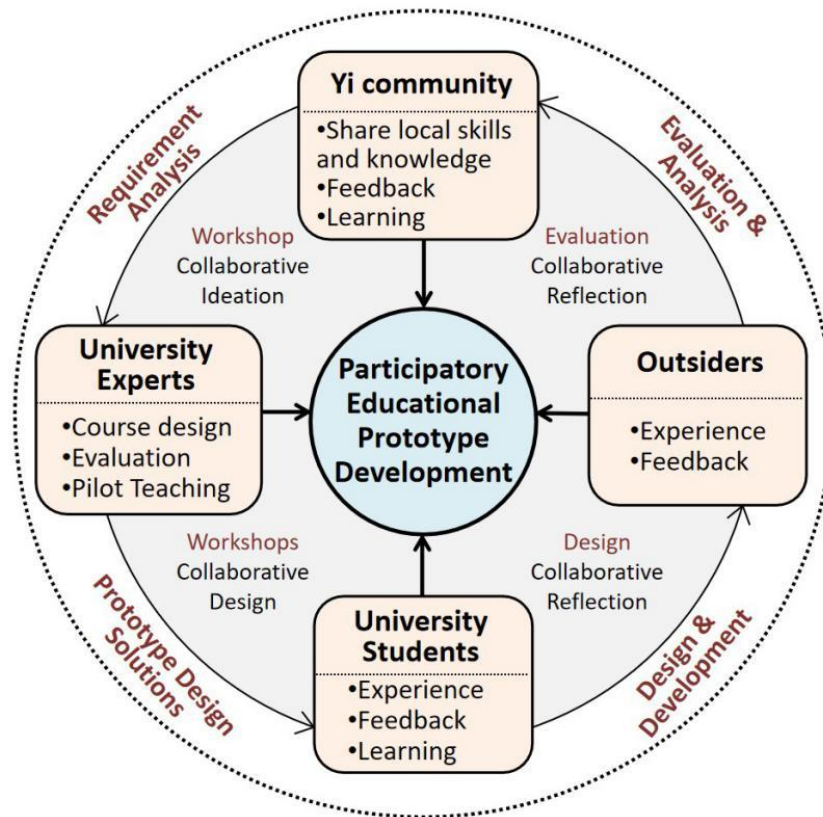


Figure 101 Participatory Design Model of the Yi Costume Education Prototype

Source: by the author

CHAPTER 5 CONCLUSION AND DISCUSSION

5.1 Finding following with Research objectives

The research set out three primary research objectives, all of which were systematically addressed throughout the research process.

First, regarding Research Objective 1, which aimed to investigate the tangible wisdom (forms, crafts, and techniques) and intangible wisdom (history, customs, beliefs, and values) embedded in Wuding Yi traditional costumes, the study employed fieldwork, semiotic analysis, and cultural anthropology to clarify both the tangible and intangible values of Wuding Yi costumes. In addition, a comprehensive set of educational materials on Yi costume culture was developed. This included systematically collected images of representative Wuding Yi costumes, alongside the extraction and cultural interpretation of embroidery techniques, paper-cutting skills, representative styles, patterns, and colors. This process not only contributed to the preservation and safeguarding of the core cultural resources of Wuding Yi costumes but also revealed the historical, technical, and cultural wisdom embodied in these

garments, thereby laying a solid foundation for subsequent research, inheritance, and development.

Second, regarding Research Objective 2, which sought to analyze the cultural value of Yi costume knowledge, its current state of inheritance, the causes of cultural loss, and the role of community participation in its revival, the study found that Yi costumes carry multidimensional cultural values. These include expressions of social identity and roles, carriers of historical memory, reflections of religious beliefs and values, symbols of ethnic identity, and embodiments of ecological wisdom. The research also identified inheritance challenges, including skill gaps, cognitive deficits, and weakened sustainability. Furthermore, the study revealed that community-based transmission was limited and participation levels were insufficient. By introducing participatory design—a social innovation approach that enables multiple stakeholders to co-create value—and combining it with a “Community of Practice” collective learning model, the research established long-term, contextually grounded educational and practical activities. This approach effectively empowered the community, strengthened the connection between the community and its cultural heritage, and promoted the sustainable transmission of Yi costume culture.

Finally, regarding Research Objective 3, which focused on designing participatory prototypes, including participatory activities, two-way education programs, and supporting teaching materials as alternative solutions, the study conducted workshops and participatory design sessions to establish a collaborative network between the Yi community and universities. Together, they developed the two-way education program and its supporting teaching materials. This process not only created an education-based collaborative inheritance mechanism but also opened new pathways for the transmission of Wuding Yi costume culture within contemporary social contexts.

In summary, all three research objectives were largely achieved. The study provided both theoretical and practical outcomes, and it also confirmed the research hypothesis that participatory design can effectively facilitate the sustainable inheritance of Wuding Yi costume culture.

5.2 Total of research results and evaluates

This research aims to explore the sustainable transmission of Wuding Yi costume culture by developing educational resources and practical activities through participatory design, and by validating their effectiveness. Throughout the research process, a wealth of outcomes was generated, which not only systematically clarified the core values of Yi costume culture but also provided actionable models and theoretical foundations for community practice and cultural education.

5.2.1 Overview of Key Research Outcomes

Through multi-level and multi-dimensional exploration, this study gradually formed a systematic set of research outcomes.

First, at the theoretical level, the research constructed a comprehensive knowledge framework for Wuding Yi costume culture, encompassing both tangible wisdom (forms, crafts, techniques, and colors) and intangible wisdom (history,

customs, beliefs, and values). On this basis, a symbolic and interpretable cultural resource system was established.

In terms of educational resource development, the study created a two-way education curriculum system comprising five courses and accompanying teaching materials, forming a complete set of educational resources including cultural interpretation documents, image archives, and teaching toolkits. This system not only provides opportunities for community members to learn about their culture but also offers interdisciplinary cultural learning for university students, while supplying systematic teaching resources for cultural experience activities, thus achieving the systematic and educational transformation of knowledge.

Furthermore, at the level of design and practice, the research established a collaborative mechanism among community members, university students, and experts through seminars, participatory design workshops, and the two-way education framework, creating an educational and practical platform that integrates both long-term sustainability and contextual relevance. This platform not only expands the pathways for the transmission of Wuding Yi costume culture but also establishes multi-channel, multi-level inheritance models, providing a socially innovative model that combines operability and sustainability, and serving as a demonstrative example for the protection and development of ethnic costume culture.

Overall, the research outcomes cover three main areas: knowledge synthesis, educational development, and design prototypes. They realize a systematic cycle from academic research to educational transformation and community practice, laying a solid foundation for the sustainable transmission of Wuding Yi costume culture.

5.2.2 Validation and Evaluation Methods

To ensure the scientific rigor, effectiveness, and practical applicability of the research outcomes, this research established a multi-level, multi-stakeholder, and multi-scenario validation and evaluation system following the development of the results. This system aims to comprehensively examine the research outcomes from different dimensions, including academic standards, community practice, cultural experience, and educational application.

First, at the academic level, the teaching materials were reviewed and evaluated by a university expert committee. The focus of the expert review included the scientific accuracy, systematic organization, educational logic, and feasibility of implementation. Based on written feedback and defense sessions, the research revised and refined the curriculum proposals through two rounds of modifications, ultimately receiving approval for inclusion in the university's interdisciplinary elective course catalog, thereby ensuring the content's scientific validity, systematic structure, and practical operability.

Second, at the community level, the research conducted a small-scale pilot teaching program in the Wuding Yi community, involving 25 community members. Feedback was collected through focus group discussions and in-depth interviews. This process not only tested the applicability of the curriculum within the community inheritance environment but also revealed differences in participation and interest among learners of different ages and skill levels. The pilot results indicated that the

educational resources successfully stimulated community members' learning interest and promoted cultural identity as well as intergenerational knowledge inheritance.

Third, at the cultural experience level, a medium-difficulty embroidery experience test was designed for interested adults. Through pre- and post-test comparisons, the research validated the usability and learning effectiveness of the teaching toolkit developed for non-professional learners. The results showed that participants were able to quickly acquire basic skills and, through the patterns and symbols, understand the underlying cultural meanings, thereby achieving the dual objectives of “skill acquisition—cultural cognition.”

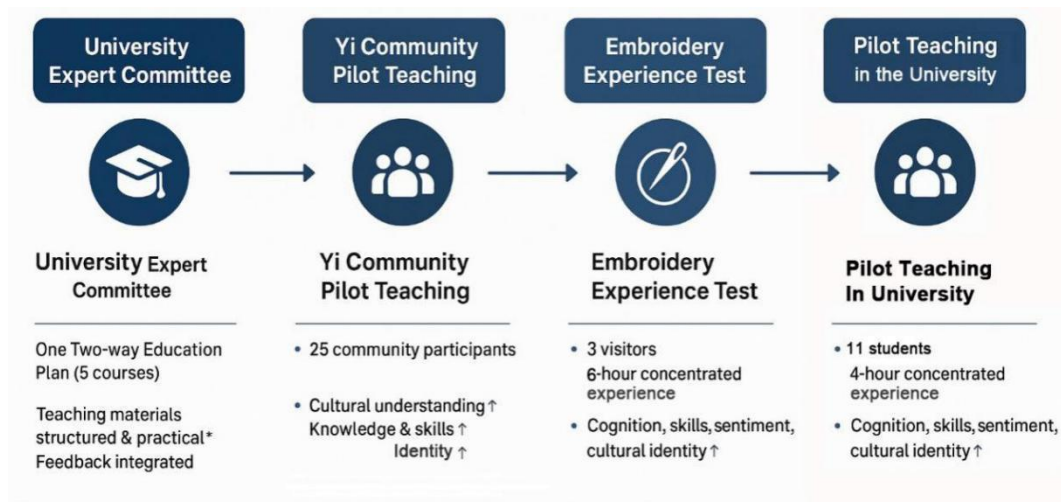


Figure 102 Evaluation Methods

Source: by the author

Finally, at the educational application level, the research organized a pilot study involving 11 students, focusing on testing the beginner-level embroidery learning toolkit. Using a combination of pre- and post-tests and interview feedback, the research assessed learning outcomes and user experience. The results demonstrated that students could quickly get started under the guidance of the toolkit and, in the process, enhanced their interest in and understanding of Yi costume culture. This not only confirmed the feasibility of the teaching materials for interdisciplinary education but also indicated their potential for broader application.(Figure 102)

In summary, through a multi-level validation mechanism, this research ensured that the outcomes were applicable and effective across different groups and scenarios. The validation process not only enhanced the practical value of the outcomes but also provided strong support for the application of participatory design in the study of cultural inheritance.

5.2.3 Evaluation of Research Outcomes

From the perspective of effectiveness, the research successfully established a symbolic system for Wuding Yi costume culture, developed a two-way education curriculum with accompanying teaching materials, and created community cultural spaces and service design prototypes. The application of participatory design in practice validated its effectiveness in cultural inheritance, providing practical

experience for collaborative inheritance mechanisms between communities and universities.

From the perspective of academic value, this research contributes to the integration of cultural sustainability theory and participatory design methods, offering a new theoretical perspective and methodological reference for the study of minority costume culture. Additionally, through the educational transformation of traditional cultural knowledge, the research systematized and rendered it teachable, providing a replicable model for subsequent academic research and curriculum development.

From the perspective of practical value, the research provided communities with sustainable alternatives for cultural inheritance, enhancing community members' cultural identity, preservation capability, participation awareness, and sense of responsibility. For universities, the research transformed Wuding Yi culture into academic resources that are teachable and researchable, while also promoting cultural innovation and offering experiential references for interdisciplinary education and social practice.

In summary, the research achieved positive outcomes across multiple dimensions, including theoretical construction, practical application, educational transformation, and community empowerment. It provides a systematic, operable, and scalable model for the sustainable inheritance of Wuding Yi costume culture and offers valuable experience for the protection and innovation of minority cultures.

5.3 Research results and how to solve the research problem

5.3.1 Overview of Problem Identification and Corresponding Strategies

Based on systematic literature review and field investigations, this research identified and thoroughly analyzed the core challenges in the inheritance of Wuding Yi costume culture and proposed corresponding strategies.

Problem 1: Investment-driven benefits prioritize economic gains over cultural wisdom. Current policies and the development of the Yi embroidery industry tend to emphasize economic returns while overlooking the cultural wisdom and knowledge systems embedded in the costumes, leading to a gradual erosion of their cultural value. In response, this research proposed an inheritance mechanism centered on cultural value, emphasizing the cultural significance of traditional symbols, techniques, and knowledge systems in educational and design practices to ensure the effective continuation of Yi costume cultural wisdom during the inheritance process.

Problem 2: Crisis of cultural identity. The younger generation is gradually losing skills and cultural understanding related to costume making, resulting in a noticeable decline in recognition and engagement with traditional costumes. To address this, the research established a "Two-way Education Program" (Yi Culture Training + University Education + Teaching Resources), which provides ongoing skill training and knowledge transmission within the community to reinforce cultural inheritance. Simultaneously, through university courses, interdisciplinary teaching resources, and design innovation, the program facilitates cross-generational and cross-cultural exchange, enabling the younger generation to reconstruct cultural identity through learning and practice.

Problem 3: Weakened cultural sustainability. Large-scale outmigration for education and work has severely disrupted traditional family- and community-based inheritance mechanisms, making stable intergenerational transfer difficult. To tackle this, the research designed an education and practice model based on multi-party collaboration, particularly through joint development, implementation, and maintenance of educational programs between the community and universities, thereby establishing more flexible and adaptable inheritance pathways and enhancing cultural sustainability.

In summary, by clearly identifying the problems and proposing systematic strategies, this research preliminarily constructed a comprehensive solution centered on education, facilitated by collaborative mechanisms, and guided by cultural value. This provides a practical framework for the sustainable inheritance of Wuding Yi costume culture.

5.3.2 The Role of Participatory Design in Problem Solving

In this research, participatory design served not only as a research methodology but also as a crucial pathway for addressing identified challenges. Its role can be summarized in the following aspects:

(1) Activating collaboration and interaction among multiple stakeholders. Through seminars and workshops, this research facilitated interaction among community members, university experts, and scholars, establishing a collaborative relationship between the community and the university and reaching consensus on co-creating educational programs. This multi-stakeholder collaboration transformed the challenges from the difficulties of a single group into shared issues jointly addressed across groups.

(2) Collective learning and co-construction of knowledge. “Collective Learning by Doing” was the core mechanism of this research. Through joint practice, community members shared traditional techniques and symbolic knowledge, university students contributed interdisciplinary design perspectives, and experts provided guidance on methods and theoretical frameworks. Participants not only acquired skills but also developed shared cultural understanding and value recognition. Through co-creation, collective interactions generated knowledge systems, learning approaches, and tools, enhancing the practicality and contextual relevance of learning while fostering participants’ sense of identity and engagement.

(3) Ensuring culturally value-driven educational content. Participatory design ensured that the development of educational materials and course design centered on Yi culture. Official inheritors and artisans participated in co-creating the courses, guaranteeing authenticity and cultural orientation, while university students and design professionals introduced modern design languages and communication methods. This approach maintained a “culture-first, innovation-inclusive” principle, effectively preventing distortion of cultural content during educational processes.

(4) Establishing a co-create–co-implement–co-maintain educational mechanism. In the development of courses and teaching materials, participatory design extended into implementation and subsequent maintenance, ensuring long-term support from the university, sustained progress of educational programs, and integration into

university curricula and academic research. This collaborative mechanism illustrates the positive role of social participation in the sustainable inheritance of ethnic culture.

In summary, participatory design not only enhanced the practicality and cultural orientation of the research outcomes but also strengthened their sustainability through institutionalized and systematic mechanisms, providing an actionable pathway for the long-term inheritance of Wuding Yi costume culture.

5.3.3 Mechanism Analysis and Effectiveness

The “Two-way Education Plan” and its associated collaborative mechanisms proposed in this research demonstrated multidimensional effectiveness in practice, as reflected in the following aspects:

(1) Sustainability of the education and collaboration mechanism

Through co-creation of courses and teaching materials, the research established a “community–university–society” tripartite collaborative framework, ensuring that cultural inheritance no longer relies solely on individual groups or families but gains new vitality through cross-group collaboration. Courses are implemented in the community as training programs and in universities as interdisciplinary elective courses, thereby achieving a dual pathway of “contextualized–institutionalized” inheritance. This mechanism demonstrates that cultural inheritance can be sustained long-term through institutional embedding and cross-sector collaboration.

(2) Diversification of cultural inheritance pathways

The inheritance of traditional costume culture has typically relied on oral transmission or family-based education. This research expanded new pathways through the education plan. For example, in the community, costume appreciation, embroidery, paper-cutting, and design courses became public activities for both youth and adults; in universities, students learned about costume culture through coursework and engaged in innovative design. Through this mechanism, traditional costume culture not only continues within local communities but also enters broader academic and social spaces, thereby broadening the possibilities for inheritance.

(3) Feedback and acceptance across different groups

- Community members: Generally reported that the courses helped them understand the history and cultural significance of traditional Yi costumes and acquire practical skills, while also enhancing their cultural identity. Some youth indicated that the courses allowed them to re-evaluate the value of traditional costumes, stimulating their interest in cultural activities and inheritance.

- University students: Through workshops and courses, students gained new experiences in cross-cultural learning and design innovation. They not only learned traditional techniques but also deepened their understanding of the importance of cultural inheritance through interaction with the community, expanding their sense of social responsibility.

- Expert groups: Experts considered the model to be highly operable and scalable in both methodology and outcomes, offering transferable insights for the education and inheritance of other ethnic cultures.

(4) Mechanism innovation and social value

The education and collaboration mechanisms developed in this research addressed challenges such as “skills gaps,” “cultural identity loss,” and “fragile inheritance mechanisms.” By leveraging interdisciplinary and cross-sector collaboration, the research explored a replicable social innovation model. This model provides a new perspective for cultural protection and development, transforming cultural inheritance into actionable, sustainable social practice through education and collaborative mechanisms.

In summary, this research, guided by the core research questions presented in Chapter 1 and grounded in fieldwork, semiotic analysis, and cultural anthropology, systematically revealed the practical challenges facing the inheritance of Wuding Yi costume culture in terms of economic orientation, cultural identity, and sustainability. Through the application of participatory design, corresponding strategies were proposed and implemented. By innovating the mechanism of “co-creation–co-learning–co-utilization,” this research achieved a deep integration of education and cultural inheritance, establishing an educational and collaborative platform involving the community, universities, and multiple stakeholders. This platform has endowed Wuding Yi costume culture with sustainable vitality under new social conditions, addressing the urgent need for cultural knowledge inheritance and resolving the core issues initially identified in this research.

However, the significance of the research outcomes extends beyond problem identification and strategy formulation. Its further value lies in the multidimensional impacts on the social level. The educational model and collaborative mechanisms developed in this research have not only enhanced the community’s capacity for self-directed inheritance and cultural confidence but also promoted interdisciplinary and cross-group cultural exchange and understanding. The following section will provide a more systematic analysis and discussion of the research outcomes from the perspective of social impact.

5.4 Research results and its Social Impact

This research, grounded in Cultural Sustainability Theory, explores the impact of the research outcomes on the inheritance of Yi costume culture and the broader social system within the social, economic, and ecological dimensions of sustainable development. Centered on cultural values, the study emphasizes the living continuity of cultural heritage, community empowerment, and the transformation of multiple values. Theoretically, drawing on the perspectives of Meireis & Rippl (2019), Poullos (2014), and Loulanski (2007), this research constructs a Cultural Sustainability Intervention Model, which employs participatory design as the approach and education as the medium.

5.4.1 Social Impacts of the Research

(1) Social Dimension

At the social level, this study echoes Meireis and Rippl’s (2019) proposition that “sustainability must be understood within a cultural perspective.” Through the

methodology of Participatory Design (PD), it establishes a cultural learning and inheritance system centered on the Two-way Education Program, transforming cultural transmission from a one-way process into a multi-actor co-creative knowledge network.

Through a collaborative mechanism between universities and communities, the study builds an organic linkage among educational institutions, academic research, and community practices. On the one hand, universities contribute by constructing course systems, promoting interdisciplinary research, and developing teaching resources, thereby systematically integrating Yi ethnic costume culture into academic and educational frameworks. On the other hand, the community actively participates in course instruction, skill demonstrations, and cultural interpretation, revitalizing traditional knowledge embedded in everyday practices and transforming it into academic and educational resources. This mechanism allows traditional costume culture to become not only an object of study but also an essential element of academic production and educational innovation.

This two-way interactive model strengthens young people's understanding of the holistic cultural knowledge of Yi costumes—form, craftsmanship, and meaning—helping them reconstruct their cultural identity within the modern context. Consequently, it effectively mitigates the *Cultural Identity Crisis* and the *Breakdown of family-based inheritance mechanisms*.

Meanwhile, the ongoing operation of the educational program promotes community empowerment by enhancing members' initiative and confidence in cultural preservation, education, and dissemination. Through co-creation of courses and shared resources, cultural inheritance gradually shifts from an individual and family-based activity to a collective and socialized endeavor, forming a self-sustaining community-based cultural support system. This system not only strengthens the community's cultural self-organization capacity but also provides a new model for local cultural revitalization and social sustainability.

Overall, through educational innovation and the collaborative pathway between universities and communities, this study transforms Yi ethnic costume culture into a socially impactful resource, fostering the reconstruction of cultural identity and promoting the sustainable development of regional culture.

(2) Economic Dimension

The findings of this research substantiate Loulanski's (2007) concept of cultural heritage as *a multivalent resource*, further revealing the multifaceted values of cultural heritage in economic, cultural, and social development. The research redefines Yi costume culture as a form of *Development Capital*—not only as a symbol of cultural identity and a carrier of knowledge systems, but also as an activatable resource for economic and social growth.

In the past, the Yi community attempted to develop the Yi embroidery industry. However, as the development was largely profit-oriented and neglected cultural connotations and design innovation, the products became highly homogenized and lacked market competitiveness. Meanwhile, Yi artisans, as the cultural bearers, had limited capacity in design transformation and modern communication, which placed

them at the margins of the industrial chain and prevented them from gaining substantial economic benefits.

The *Two-way Education Program* developed in this research provides a new pathway for transforming cultural capital into economic capital through educational intervention. Its curriculum integrates traditional craftsmanship, contemporary design thinking, and digital communication modules, enabling community members to preserve traditional cultural expressions while acquiring the design, innovation, and communication skills essential for the cultural and creative industries. Through this empowerment process, Yi artisans are able to create Yi embroidery products and derivative works with market potential, building upon traditional patterns and stitching techniques.

At the same time, the university plays a long-term supporting and collaborative role in this system. As a mediator of knowledge and resources, it continually provides intellectual support for design innovation, market insight, and brand development through academic research, teaching activities, and student creations. The outstanding design works produced by university students during the courses also become valuable resources for the Yi community to develop embroidery products and cultural derivatives, establishing a shared mechanism between knowledge and practice.

Consequently, the research establishes a long-term, cyclical support system based on participatory design—where universities empower communities through education and research, while communities, in turn, feed back cultural resources and practical experience to enrich education and innovation. This *knowledge–skills–values* two-way circulation mechanism enhances the potential for the transformation of cultural capital into economic capital.

(3) Environmental Dimension

At the environmental level, the research emphasizes the Yi culture's core values of *Animism and Respect and Harmony with Nature*. These traditional beliefs not only embody the intrinsic spiritual connection between humans and nature but also constitute the philosophical foundation of the Yi culture's continuous development. This perspective echoes Meireis and Rippl's (2019) assertion that values are at the *core of cultural sustainability theory*. The Yi worldview of learning from nature and coexisting with it has maintained the stability and continuity of ecological ethics across generations.

This ecological philosophy aligns with Poullos's (2014) concept of *Living Heritage*, which highlights that the vitality of culture derives from its ongoing interaction with the environment. Through the curriculum content and community co-creation processes within the educational program, this study integrates the Yi people's ecological wisdom into teaching design and learning experiences. For instance, in embroidery and paper-cutting courses, learners come to understand the use of natural dyes, material recyclability, and the natural symbolism embodied in traditional patterns, thereby rediscovering the interconnectedness between nature, craft, and everyday life. This educational process thus becomes not only a means of skill transmission but also a reproduction of ecological values.

At the university level, through a systematic curriculum structure and interdisciplinary pedagogy, this study further facilitates the dissemination of

ecological ethics from the community to a broader social audience. As students learn traditional crafts, they come to understand the interdependence among culture, ecology, and society, thereby developing a shared recognition of the value of *cultural and environmental co-sustainability*. This educational pathway reinterprets and revitalizes the ecological wisdom of traditional culture within the contemporary social context, building a positive and enduring bridge for cultural sustainability across educational, community, and societal dimensions.

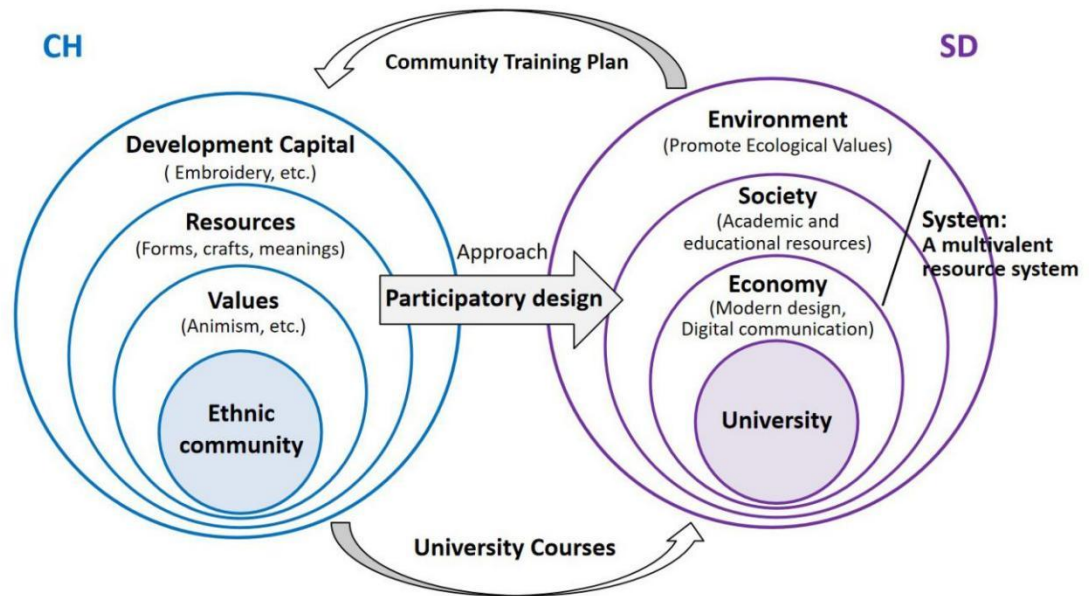


Figure 103 Model of Cultural Sustainability for Ethnic Traditional Culture

Source: by the author

Overall, this research, grounded in Cultural Sustainability Theory, constructs a culture-oriented intervention model centered on Participatory Design (PD), emphasizing the multidimensional value of culture and cross-sector collaboration. Through the establishment of educational mechanisms and the reconstruction of resource systems, the research promotes a transformation of Yi costume culture from “passive preservation” to “active development.” It verifies the theoretical proposition of “Culture as the Fourth Pillar of Sustainability” and demonstrates the feasibility and innovation of participatory educational design in the living transmission of cultural heritage.(Figure 103)

In conclusion, the research results reveal that the sustainability of cultural heritage lies not only in the preservation of techniques but also in the continued symbiosis of values, traditional practices, and community connections. Through co-creation and educational design interventions, this research achieves the transformation of cultural resources into social, economic, and ecological capital, forming a transferable model for cultural sustainability through design research, and providing new theoretical and practical insights for the long-term inheritance of ethnic minority cultures and socially sustainable development.

5.4.2 Research Limitations

Despite achieving significant outcomes, this research has certain limitations:

- Scope of Research Objects: The focus was limited to the Yi costume culture of Wuding County, with a restricted sample area and lineage representation. Therefore, the findings may not be fully applicable to other regions or ethnic groups.

- Research Duration and Longitudinal Evaluation: The participatory design workshops and course pilots were relatively short, lacking long-term tracking data, which makes it difficult to assess the sustained effectiveness of the courses and practical activities.

- Applicability of Theoretical and Methodological Approaches: Although this research integrated methods and theories from design, cultural anthropology, and education, the operability and applicability of these approaches in different cultural contexts and community environments still require further validation.

In conclusion, the research outcomes demonstrate positive impacts across social, environmental, and economic dimensions, addressing the inheritance challenges of Yi costume culture while providing theoretical support and practical experience for cultural sustainability. At the same time, reflecting on these limitations points toward directions for future research.

5.5 Suggestions

Based on the practical experience and limitations identified in this research, the following recommendations are proposed at both research and practice levels, aiming to provide reference for the sustainable inheritance of Wuding Yi costume culture and other minority cultural heritages in the future.

(1) Expansion of Research Objects

This research focused on the Yi costume culture of Wuding County. Although it has established a relatively systematic knowledge framework and accumulated educational practice experience, limitations remain in terms of geographical coverage and lineage representation. Future research could expand to Yi costumes from additional regions and lineages, or conduct horizontal comparisons with other minority costume cultures, in order to explore the commonalities and differences in cultural inheritance across diverse contexts. Moreover, attention should be paid to variations among community members of different ages, genders, occupations, and social groups in participatory activities, investigating their engagement, skill acquisition, and cultural identification, so as to enhance the diversity and specificity of cultural inheritance pathways.

(2) Applicability of Methods and Practices

Participatory design played a key role in this research; however, its adaptability in cross-cultural contexts, communities of varying sizes, and different social structures requires further exploration. Future research could compare the effectiveness of participatory design across different communities and types of cultural projects, analyzing its advantages, limitations, and operability. In addition, the potential of digital tools, online teaching platforms, and other technologies in participatory cultural education could be investigated to improve the sustainability and dissemination efficiency of practical interventions.

(3) Longitudinal Evaluation in Educational Research

At the educational practice level, this research primarily relied on pilot teaching and workshop validation, lacking long-term tracking data. Future research could adopt longitudinal research methods to evaluate the long-term effectiveness of the two-way education courses, including changes in community members' and university students' knowledge acquisition, skill inheritance, cultural identification, engagement, and social impact. By establishing a regular evaluation system and data recording mechanism, the sustained value of educational practices can be assessed more accurately, providing a scientific basis for curriculum optimization and educational strategy adjustments.

(4) Interdisciplinary Integration and Theoretical Development

This research involved a comprehensive application of design, cultural anthropology, and education, yet there remains room for deeper theoretical development and interdisciplinary integration. Future research should strengthen dialogue with fields such as sustainable development and social innovation, constructing a more complete theoretical framework to guide the scientific and systematic development of cultural inheritance practices. By fostering interaction between theory and practice, it is possible to further promote the synergistic development of cultural education, community empowerment, and social innovation.

(5) Future Development Trends of Research Outputs

In the process of constructing a sustainable inheritance system for Wuding Yi costume culture, this research has generated a series of outputs encompassing knowledge reconstruction, educational practice, and industrial transformation. In the future, these outputs will continue to evolve and expand along three developmental paths.

First, as an academic outcome that systematically organizes the tangible wisdom (forms, crafts, and techniques) and intangible wisdom (history, customs, beliefs, and values) of Wuding Yi costume, the course *Appreciation of Yi Costume Art* reconstructs the cultural knowledge framework of Wuding Yi costume in a systematic manner. With the continuous advancement of academic research, the course will be regularly updated with new visual materials, textual content, and cultural interpretations, forming a dynamically developing knowledge base that supports the preservation and protection of Wuding Yi costume's core cultural resources.

Second, as an educational practice outcome promoting ethnic identity and skill continuity, the courses *Experience of Yi Embroidery Techniques* and *Experience of Yi Paper-cutting Techniques*, together with their corresponding teaching materials and toolkits, will be continuously improved based on teaching feedback. More types of toolkits will be developed to meet the diverse learning needs of universities, communities, and experiential teaching environments.

Finally, the course *Yi Embroidery Derivative Product Design*, which aims to cultivate learners' cultural design abilities, has been officially launched in September 2025. The resulting design works will be exhibited in December of the same year, with selected pieces provided to the Wuding Yi community as design resources for cultural and creative product development. This will also enhance the social dissemination and industrial promotion of Wuding Yi costume culture. In the future, the five-course educational system will operate regularly, with two intensive training sessions each year jointly conducted by university educators and official Yi cultural

inheritors within the community, while gradually offering all courses within the university. This will establish a normalized educational mechanism and a sustainable pathway for cultural transmission.

Based on the constructive interaction between the university and the local government during the research, the collaborative relationship among the university, government, and community will be further strengthened. Building upon the mutual trust established during the development of the educational system, a long-term cooperation framework has been established, including the creation of a university research and teaching practice base in Wuding, focusing on Yi costume culture and the Yi embroidery industry. In addition, a university–county cooperation agreement has been signed to jointly advance cultural and creative projects driven by research, education, and design innovation, thereby promoting the healthy development of the Yi costume and embroidery industries.

In conclusion, future research and practice should continue to advance through the expansion of research scope, the deepening of methodologies, and interdisciplinary integration, thereby promoting the systematic study and sustainable inheritance of Wuding Yi costume culture and other minority cultural heritages. Meanwhile, the developmental trend of the research outputs demonstrates a dynamic progression from academic reconstruction to social collaboration and cultural innovation, forming a replicable and sustainable model of cultural transmission that provides a practical pathway for integrating heritage preservation with design research.



REFERENCES

1. Yi cultural background

- Bai, X. (2014). *A Cultural History of the Yi Ethnic Group*. Yunnan People's Publishing House.
- Cui, C. (2012). Spatial statistical analysis of population distribution in Chuxiong Yi Autonomous Prefecture. *Management and Technology of Small and Medium Enterprises*, (3), 209-210.
- Li, M., Li, S., Fu, C., & Yang, J. (2022). *Selected Customs of Luowu Yi Weddings*. Contemporary Culture and Art Press.
- Chuxiong Prefecture Statistics Bureau. (2024). Statistical bulletin on the resident population of Chuxiong Prefecture, 2024.
<https://tjgb.hongheiku.com/xjtjgb/xj2020/61684.html>
- Wuding County People's Government. (2025). Overview of Wuding County.
<https://www.cxz.gov.cn/info/1238/36695.htm>
- Wuding County Local Chronicles Compilation Committee Office. (2016). *Fascinating Wuding*. Yunnan People's Publishing House. <http://www.ynpph.com.cn>
- Yang, F., & Yang, Y. (2016). The origin and evolution of Chuxiong Yi culture. *Journal of Chuxiong Normal University*, 31(10), 64-70.
- Yang, F. W. (2017). *History of the Yi Ethnic Group in Chuxiong*. Kunming: Yunnan People's Publishing House.
- Yang, H. (1987). *Theory of Totem Hierarchies*. Yunnan People's Publishing House.
- Yunnan Normal University. (2025). School profile.
<https://www.ynnu.edu.cn/xxgk/xxjj.html>
- Yunnan Yearbook. (2024). Population and ethnic groups.
https://www.yn.gov.cn/yngk/gk/201904/t20190403_96251.html

2. Yi ethnic costume culture

- A, M. (2017). *Yi embroidery*. Yunnan People's Publishing House.
- Bai, W., & Xu, J. (2013). Analysis of octagonal patterns of Chuxiong Yi nationality in Yunnan. *Forward Position*, (12), 172-173.
- Dynasty to the Republic of China. *Heilongjiang Chronicles*, (09), 85-87.
- Guo, X. (2018). Understanding its cultural concepts from Yi costume patterns. *Folk Art*, (01), 75-81.
- Hao, Y. (2008). Types and cultural connotations of Chuxiong Yi nationality costumes. *Journal of Yunnan Minzu University*, 25(02), 84-86.
- Jin, Y. (2014). Interpretation of Yi costumes in Chuxiong Prefecture from the Qing
- Jin, Y. (2014). Study of Yi costumes in Chuxiong Prefecture during the Qing Dynasty. *Silk Road*, 279(14), 24-27.
- Li, Y., & Tong, C. (2011). *The Yi Ethnic Group in Yunnan*. Kunming: Yunnan People's Publishing House.
- Pa Nan. (2021). *Yi embroidery: Three lifetimes embroidered on your heart*. People's Publishing House.
- Shao, P. (2016). *Interpretation of Chuxiong Yi Clothing*. Kunming: Yunnan People's Publishing House.
- Shen, L., & Zhao, Y. (2008). Brief analysis of horse cherry blossom patterns in

- Chuxiong Yi costumes. *Journal of Yunnan Institute of Socialism*, (01), 52-55.
- Wuding County CPPCC. (2016). *Wuding ethnic costumes*. Yunnan People's Publishing House.
- Yang, F., & Qu, K. (1999). The cultural connotations of Yi clothing art. *Research on Ethnic Art*, 1999(05), 34-37.
- Yan, Z. (2017). Minority cultural communication and value reshaping in the new media era. *Radio & TV Journal*, (04), 111-112.
- Zhang, L. (2020). Analysis and design transformation of cultural genes in Chuxiong Yi patterns. *Art Panorama*, (07), 144-145.
- Zhang, Y., & Hua, R. (2022). Analysis of the current state of research on Yi ethnic clothing. *Chemical Fiber and Textile Technology*, 51(04), 108-110.
- Zhong, S., & Zhou, W. (2006). *The Yi Nationality's Costumes and Ornaments of China*. Yunnan Fine Arts Publishing House & Morning Light Publishing House.

3. Participatory design

- Cornish, F., & Breton, N. (2023). Participatory action research. *Nature Reviews Methods Primers*, 3(34). <https://doi.org/10.1038/s43586-023-00214-1>
- Fals-Borda, O. (1987). The application of participatory action-research in Latin America. *International Sociology*, 2(4), 329–347.
- Hansen, N. B., Dindler, C., Halskov, K., Iversen, O. S., Bossen, C., Basballe, D. A., & Schouten, B. (2019). How participatory design works: Mechanisms and effects. In *Proceedings of the 31st Australian Conference on Human-Computer Interaction (OZCHI '19)* (pp. 1–12). ACM. <https://doi.org/10.1145/3369457.3369460>
- Kindon, S., Pain, R., & Kesby, M. (2007). *Participatory action research approaches and methods: Connecting people, participation and place*. Routledge.
- Sanoff, H. (2006). Multiple views of participatory design. *The Journal of the Faculty of Architecture, Middle Eastern Technical University*, 23(2), 11-21.
- Yasuoka-Jensen, M., & Kamiyama, T. (2016). How participation is practiced? – Extension of participatory design model. In N. Morelli, A. de Götzen, & F. Grani (Eds.), *Service design geographies: Proceedings of the ServDes.2016 Conference* (pp. 279–291). Linköping University Electronic Press.

4. Theory

- Barthes, R. (1999). *The principles of semiotics*. Beijing: SDX Joint Publishing Company.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE.
- Geertz, C. (2014). *The Interpretation of Cultures*. Yilin Publishing House.
- Khanal, T. (2016). Interview in ethnographic study: Issues and challenges. *International Journal of Contemporary Applied Sciences*, 3(4). <http://www.ijcas.net>
- Krannich, A.L., & Reiser, D. (2021). *Encyclopedia of Sustainable Management*. Springer Nature Switzerland AG. https://doi.org/10.1007/978-3-030-02006-4_178-1
- LouLanski, T. (2007). Cultural Heritage and Sustainable Development. *The Journal of International Media, Communication, and Tourism Studies*, (5), 37-58. <https://www.researchgate.net/profile/Tolina-Loulanski/publication/>

- Meireis, T., & Rippl, G. (Eds.). (2019). *Cultural Sustainability*. Routledge.
- Poulios, I. (2014). Discussing strategy in heritage conservation. *Journal of Cultural Heritage Management and Sustainable Development*, 4(1), 16-34.
- United Nations. (2015). Transforming our world: The 2030 agenda for sustainable development. <https://www.un.org/sustainabledevelopment/development-agenda/>
- United Nations Educational, Scientific and Cultural Organization. (2001). World Declaration on Cultural Diversity. <https://baike.baidu.com/item/World%20Declaration%20on%20Cultural%20Diversity>
- UNESCO. (2003). Convention for the Safeguarding of the Intangible Cultural Heritage. <https://whyj.whsu.edu.cn/>
- Wu, B. A. (2010). *Theories and methods of intangible cultural heritage protection*. Culture and Art Publishing House.
- Wilkinson, C. (2011). *Evaluating the role of prior experience in inclusive design*. Wolfson College, Cambridge.

5. Case study

- Chen, G., & Suwanthada, P. (2024). Qiang costumes in Maoxian, Sichuan Province: The revival of Chinese minority identity for application in design. *Journal of Ethnic and Cultural Studies*, 11(2), 1-24. <http://dx.doi.org/10.29333/ejecs/1768>
- Marques, B., Grabasch, G., & McIntosh, J. (2021). Fostering landscape identity through participatory design with Indigenous cultures of Australia and Aotearoa/New Zealand. *Space and Culture*, 24(1), 37–52. <https://doi.org/10.1177/1206331218783939>
- Mazzarella, F., & Black, S. (2023). Fashioning change: Fashion activism and its outcomes on local communities. *Fashion Practice*, 15(2), 230-255. <https://doi.org/10.1080/17569370.2022.2095729>
- Salvesen, L. B., & Keitsch, M. (2021, September 9-10). Preservation and promotion of intangible cultural heritage: A participatory design approach. In *International Conference on Engineering and Product Design Education*, VIA Design, VIA University College, Herning, Denmark.
- Sarobol, A. (2014). Costume development model for tourism promotion in Mae Hong Son Province, Thailand. *SHS Web of Conferences*, 12, 01053. <https://doi.org/10.1051/shsconf/20141201053>
- Yeh, J. H.y., Lin, S.c., & Lai, S.c. (2021). Taiwanese indigenous cultural heritage and revitalization: Community practices and local development. *Sustainability*, 13(1799). <https://doi.org/10.3390/su13041799>.



VITA

NAME

Mrs.Yi SHI

**INSTITUTIONS
ATTENDED**

Yunnan Normal University – Bachelor

Yunnan Normal University – Master

Silpakorn University – Ph.D. Culture-based Design Arts

PUBLICATION

1.Revitalizing Yi Clothing Culture: A Review of Participatory Design and Cultural Sustainability in Wuding County, China - Interdisciplinary Academic and Research Journal

2.Cultural Gene Analysis of Wuding Yi Costumes-Journal of Sinology

