



Chinese Archery Cultural Heritage: Illustrations Designs for Youth Learning in Educational Institutions

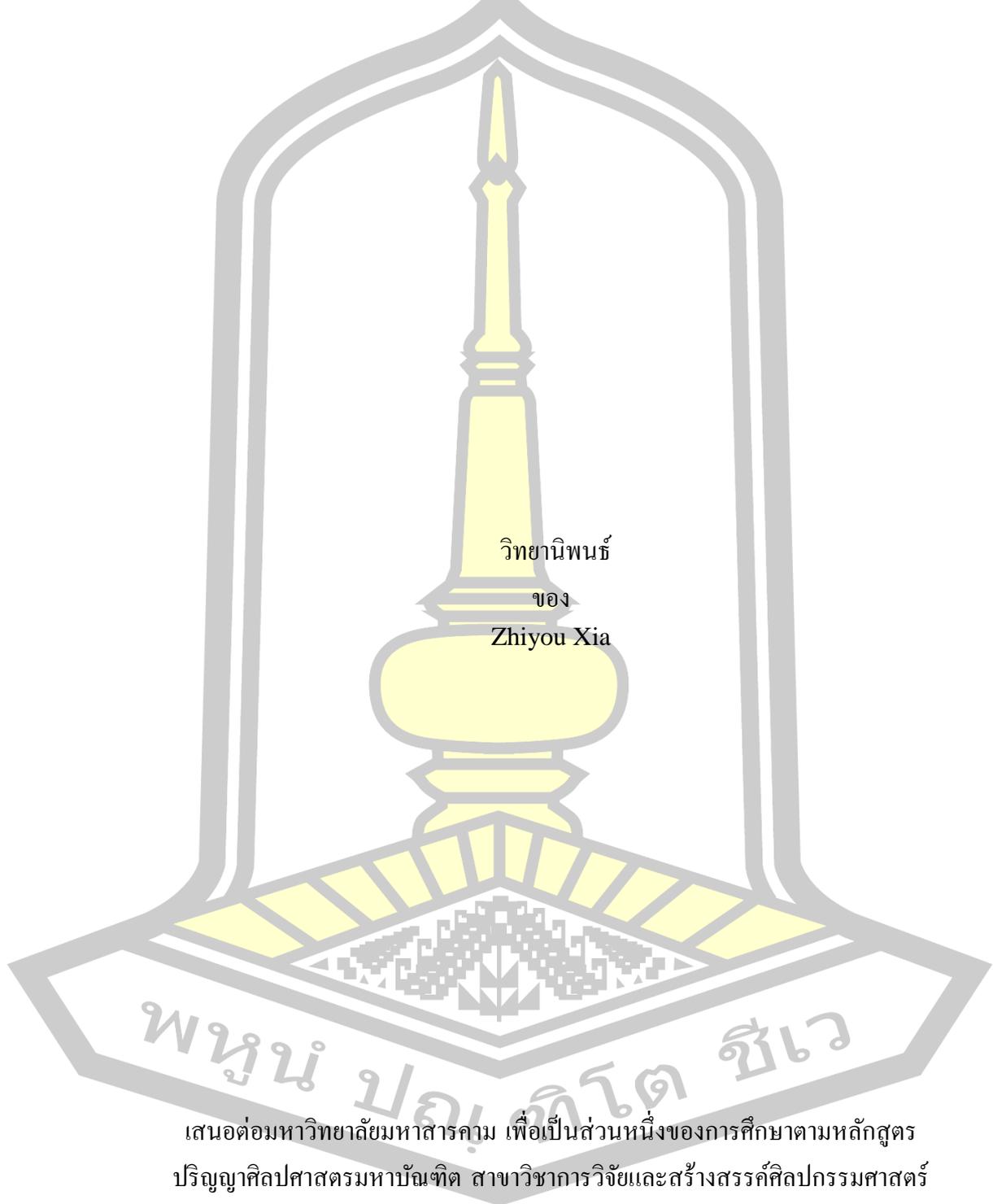
Zhiyou Xia

A Thesis Submitted in Partial Fulfillment of Requirements for
degree of Master of Arts in Fine and Applied Arts Research and Creation

January 2025

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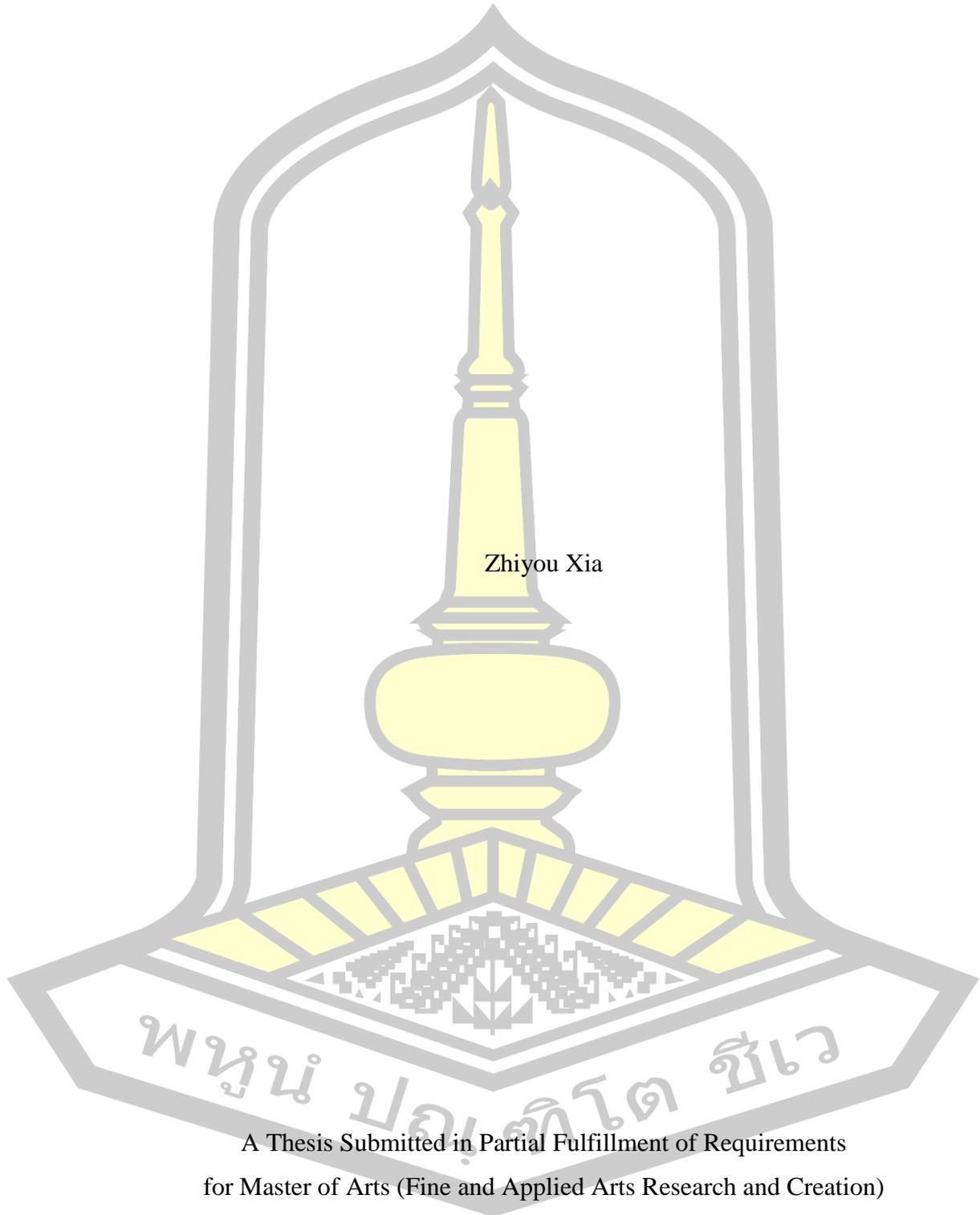


เสนอต่อมหาวิทยาลัยมหาสารคาม เพื่อเป็นส่วนหนึ่งของการศึกษาตามหลักสูตร
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Educational Institutions



Zhiyou Xia

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January 2025

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The examining committee has unanimously approved this Thesis, submitted by Mr. Zhiyou Xia , as a partial fulfillment of the requirements for the Master of Arts Fine and Applied Arts Research and Creation at Mahasarakham University

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ABSTRACT

This research is basic research. Using qualitative research methods, This paper actively interprets and explores the bow and arrow culture, which is of great significance to enrich the traditional national sports theory and inherit and carry forward the traditional national culture. At the same time, it designs a set of archery drawings suitable for teenagers to practice according to the physical quality of contemporary teenagers There are three research objectives:

- 1) Research and collect relevant information on traditional Chinese archery culture, including the physical fitness of Chinese adolescents in archery learning and the problems they encounter during learning.
- 2) Research and analyze the principles, techniques, and processes of archery training, as well as how to instill good personality traits in students, such as good training and competitive etiquette. Using excellent Chinese philosophical ideas or teaching methods for learning media design.
- 3) Illustrate the learning of young people in educational institutions, promote archery culture, and use the relevant knowledge of archery learning to illustrate based on the learning process and behavioral norms of academic youth.

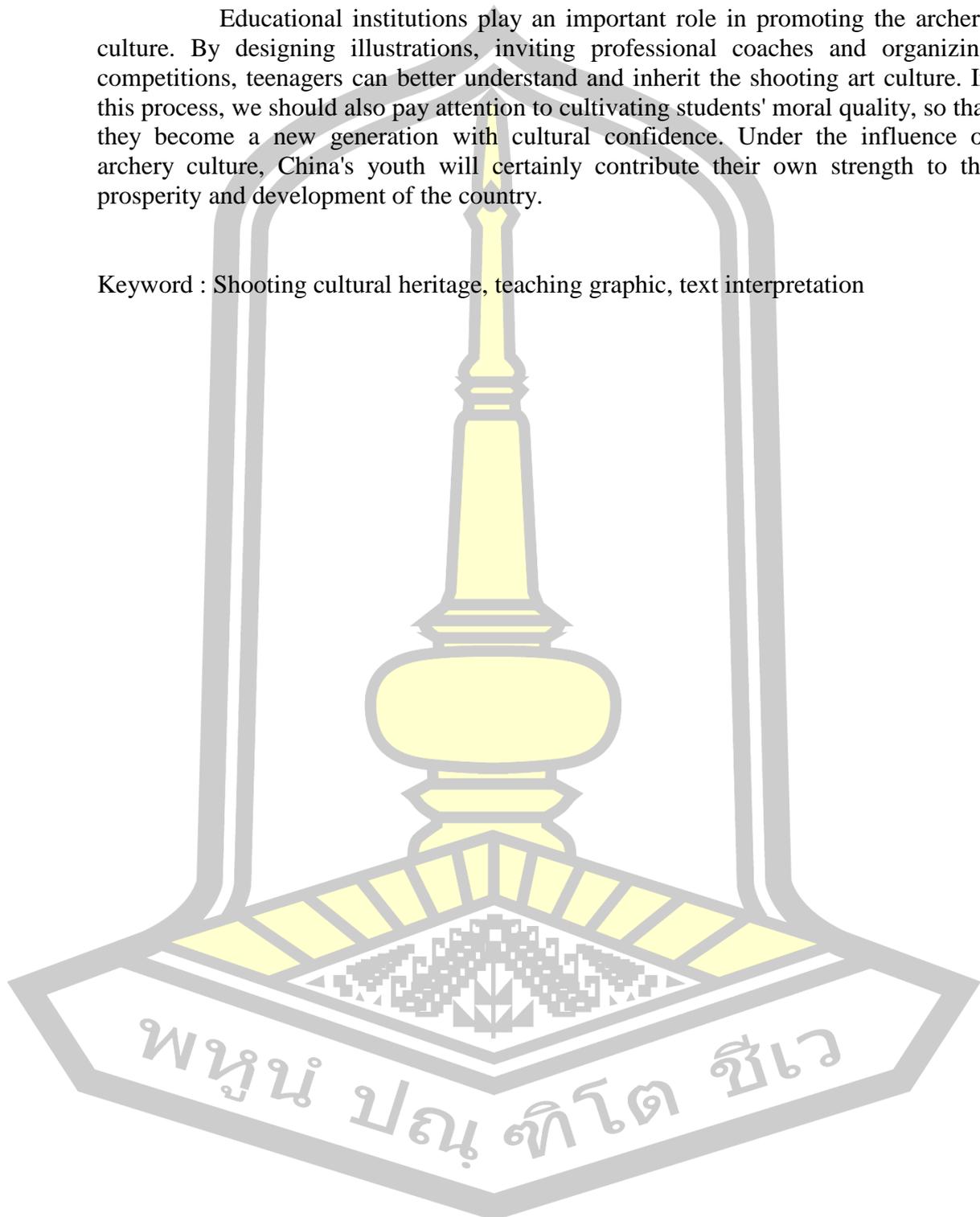
It makes the dissemination of shooting art culture more targeted, and educational institutions can make corresponding teaching plans in combination with the learning stage and interests of teenagers. For example, in the primary school, the story of archery heroes can stimulate the interest of teenagers in archery; in the middle school, combine physics and mathematics to explain the principles of archery skills and archery equipment; in the university school, archery club activities can continue to learn and exercise archery skills in their spare time.

When promoting archery culture in educational institutions, we should also pay attention to cultivating the moral quality of young people. The archery movement emphasizes the principle of "fairness, justice and openness", which is consistent with the core socialist values in China. By learning archery, teenagers can

develop good norms of conduct and establish correct values.

Educational institutions play an important role in promoting the archery culture. By designing illustrations, inviting professional coaches and organizing competitions, teenagers can better understand and inherit the shooting art culture. In this process, we should also pay attention to cultivating students' moral quality, so that they become a new generation with cultural confidence. Under the influence of archery culture, China's youth will certainly contribute their own strength to the prosperity and development of the country.

Keyword : Shooting cultural heritage, teaching graphic, text interpretation



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I've thought countless times about what it would be like when I graduate from a master's program, and I look forward to completing my thesis as soon as possible. But when I actually finished it, I was excited but also a little reluctant to give up. I thought I should write the acknowledgments section, but actually I have a lot of ideas and I don't know where to start. After completing this master's thesis, it could be another starting point in my life. It is difficult to express its meaning in words, but it will be remembered for a lifetime.

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Secondly, I want to express my deepest love to my parents. My parents are my eternal spiritual support and safe haven. They tolerate my bad temper and tolerate everything about me. Because of their unconditional love, I have become the optimistic and positive person I am today. Because of their unconditional support, I was able to resist all pressure and become who I am today. Thanks to my parents, they provided a solid foundation for my dreams and life. Secondly, I would like to express my deepest love to my parents. My parents are a safe haven for my eternal spiritual support and safety. They tolerate my shortcomings and everything around me. Because of their unconditional love, I have become my optimistic and positive person today. Because of their unconditional support, I was able to resist all the pressure and be who I am today. Thanks to my parents who provided a solid foundation for my dreams and life.

I am also grateful to my wife, Ms.Wang Lamei, for taking care of the children while working during my master's degree, so that it gave me more time to learn to write the paper, and accepted that I did not fulfill some due obligations during this period

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Finally, I would like to thank myself, thank myself for my optimism, persistence and dreams, thank myself for working hard in the past, and hope that I can continue to uphold this love and embrace a bright future.

Zhiyou Xia

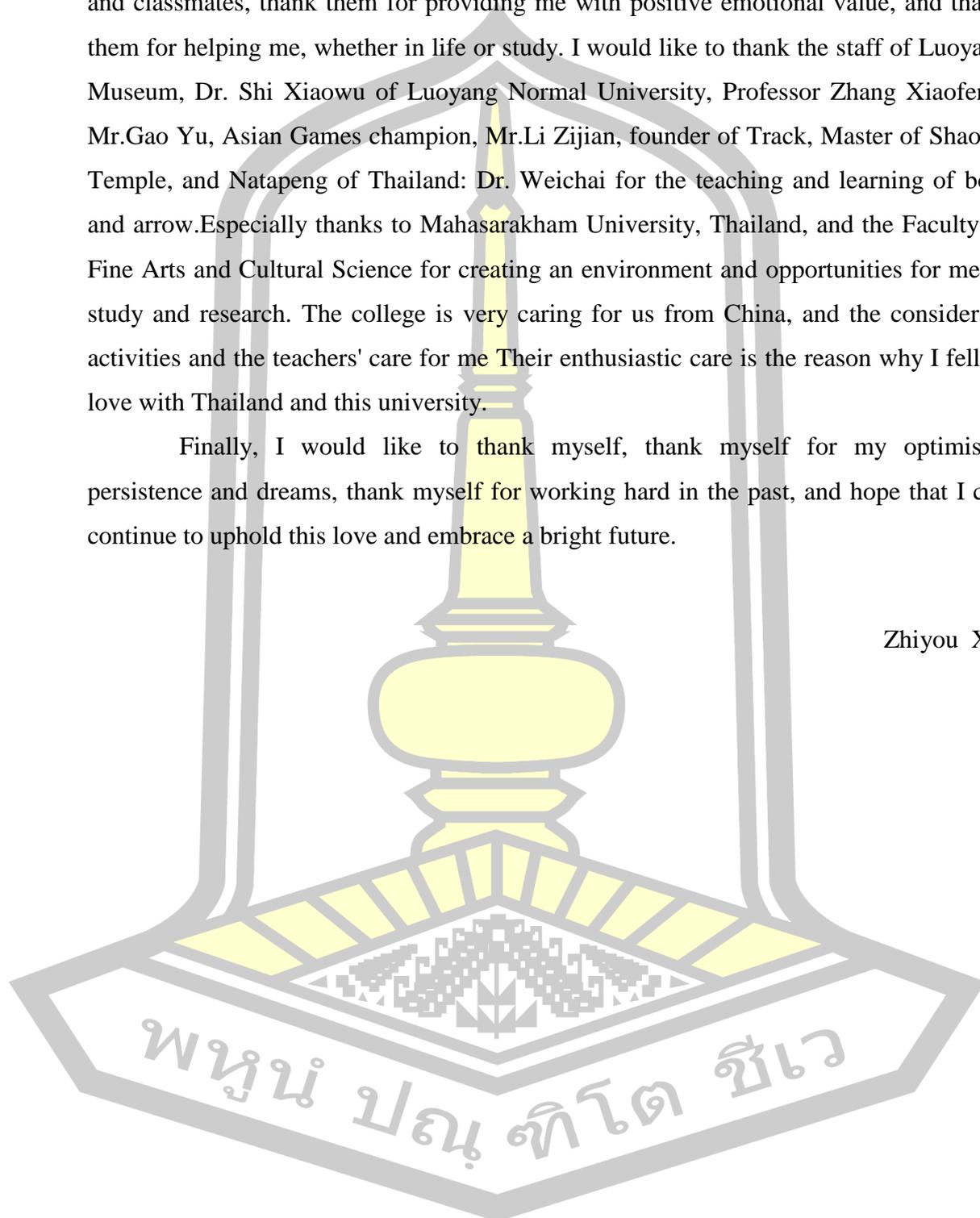
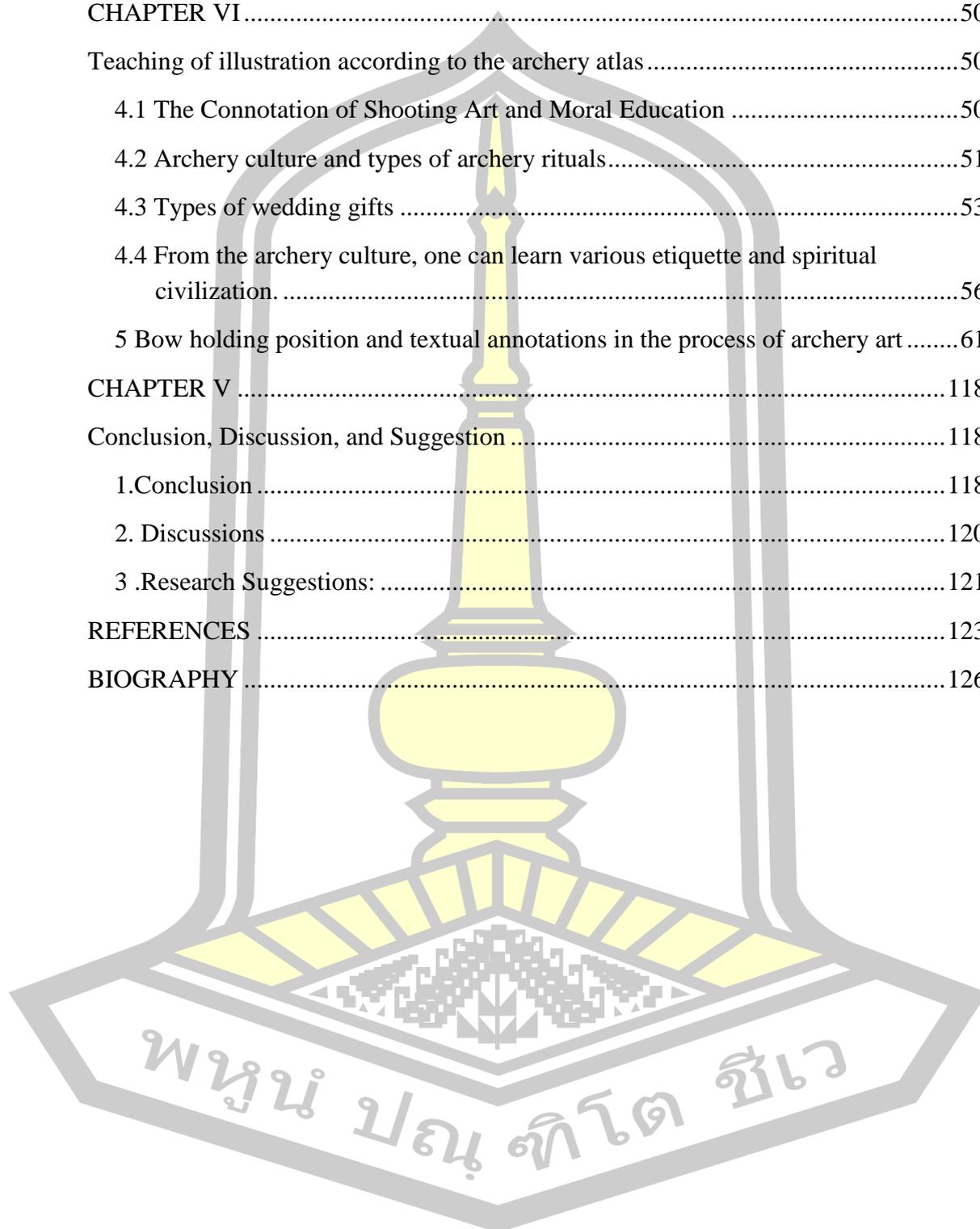


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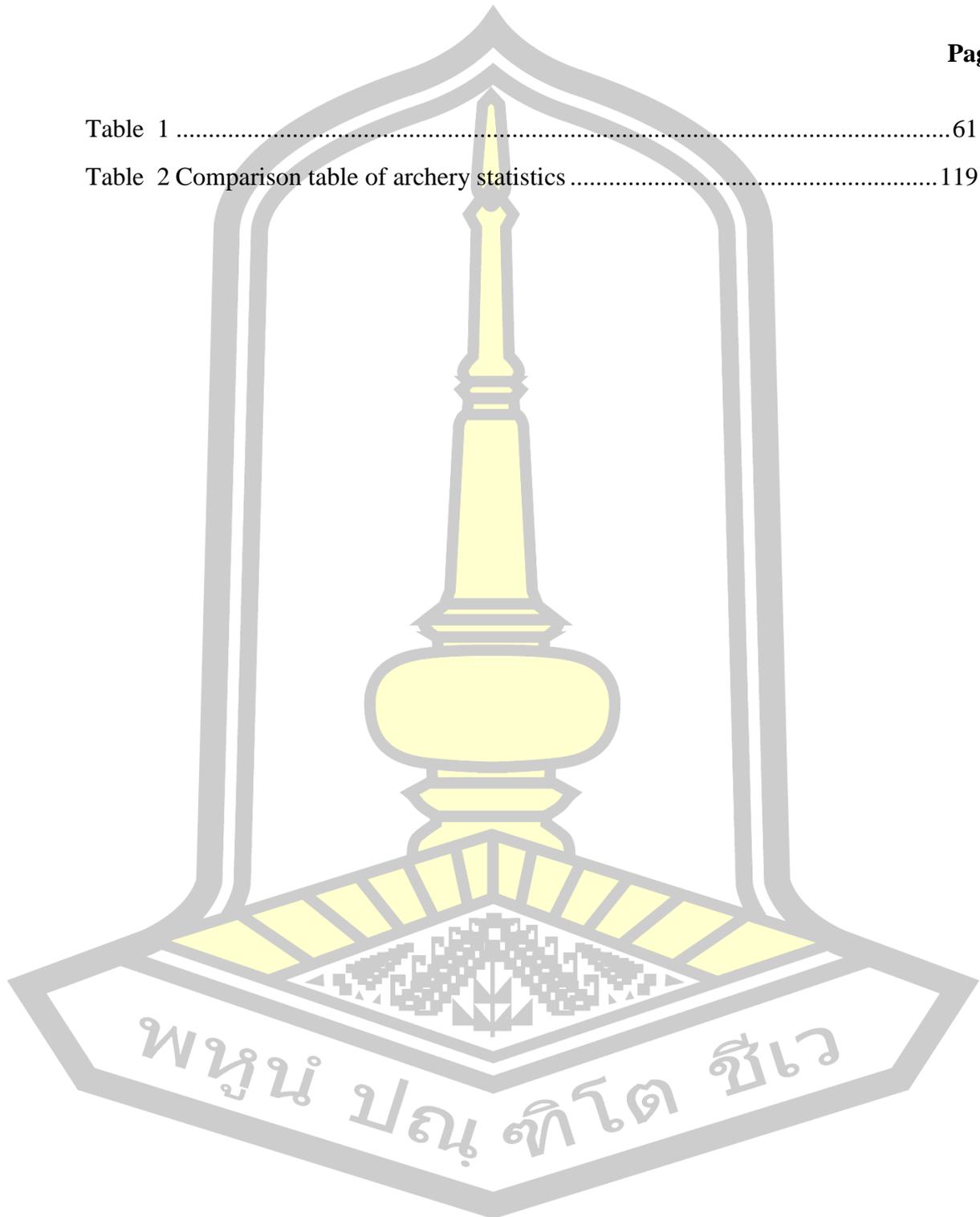
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CHAPTER I

Introduction

1. Background of Research

China is one of the four major ancient civilizations in the world, with a long history and culture. It is also the only country in the world that the four ancient civilizations and cultures have not stopped., China has safeguarded and passed down numerous historical and cultural legacies, including many famous heritage sites. With society constantly evolving and time marching forward, the country supports the development of sports culture and provides significant opportunities for the revival and propagation of traditional culture, hailing as an immense artistic opportunity.[Mao Haiyan, & Cai Zhong. A comparative study of the development of Chinese traditional archery and Japanese bowway. Compilation of paper abstracts of the 11th National Sports Science Conference]

Traditional ethnic sports are sports passed down by various ethnic groups in modern times. To learn the traditional sports of a country, one must understand its roots and follow its origins. The Chinese nation is composed of many ethnic groups. They have spread many traditional sports, and archery is one of them .[Yu Xuebin. (2022). Study on the characteristics and inheritance of traditional sports and entertainment: based on the investigation of the ethnic groups in the Heilongjiang River Basin. China's Intangible Cultural Heritage (3), 8.]Traditionally defined modern indigenous sports form the primary content of physical exercise. However, there was no concept of sports in ancient China. It was only introduced into China from Japan during the Westernization Movement after the Opium War in 1840. Therefore, when exploring ancient Chinese sports, one should proceed from history to seek images of modern traditional sports that have evolved over time. From the arrowheads unearthed in Panjiuye 30,000 years ago, we can infer the existence of bows and arrows at that time. But at that time, the bow and arrow were primarily the focus of our inquiry, which we could only say marked the origin of traditional sports within our nation's heritage. Traditional folk sports originated from aspects of life, production, labor, military warfare, religious rituals, leisure and entertainment, worship of totems and ancestors, and celebration of major festivals. In ancient China, bows and arrows were used in warfare, serving as one such leisurely and recreational tool. In the Shang-Zhou period, "archery" was a festive ceremony and sacrificial ritual; whereas during the Qin-Han era, "the Autumn Shoot" was an annual archery competition held in the autumn.[Wang Dingming, and & Li Xiyun. (2016). Integration and development of Tibetan traditional sports and modern sports under the background of social change. Contemporary sports technology, 6 (34), 3.] "Da Liu" is a tradition that originated in the Tang Dynasty. In brief, archery occupies a significant position in traditional Chinese sports. It has a well-documented history in traditional Chinese archery projects and is also a focus of research in national traditional sports projects.

Traditional Chinese archery is a sport that utilizes traditional Chinese bows and arrows. After the 1957 "National Archery Championship" held in the Beijing Sports Gymnasium, there were no official traditional archery competitions or events for some time, causing traditional Chinese archery to disappear. It wasn't until around

2002, with the joint efforts of renowned scholar Ma Mingda, former national team archery coach Xu Kai, Xie Sufang, and other traditional Chinese archery enthusiasts, that it began to gain recognition again. Now, traditional archery in China is undergoing full development, with the first traditional archery competition held in Qinghai Province in 2006. The scale of traditional archery competitions is growing, with an increasing number of participants. From the rise of traditional archery to the organization of large-scale competitions in modern China, traditional archery is not only expanding in the archery field but also gaining prominence in the study of traditional archery culture.

Since the 18th National Congress of the Communist Party of China, General Secretary Xi Jinping has repeatedly mentioned 'cultural confidence' while expressing his cultural thoughts and viewpoints. He has emphasized the importance of strengthening confidence in the path, theory, and system of socialism with Chinese characteristics and ultimately upholding cultural self-confidence. The significance of traditional Chinese culture is profound, especially the traditional archery culture in China. From the "Six Arts" and "Etiquette Archery" of the Western Zhou Dynasty to the development of strong bows and crossbows during the Spring and Autumn Period, Warring States Period, Qin and Han Dynasties, followed by the establishment of the martial arts system.

Traditional ethnic sports are a form of entertainment activity that has been passed down from ancient times. It can also be considered a sport, embodying the customs and cultural background of a country. Traditional ethnic sports is a broad category that includes traditional ethnic sports events, theories, and tools.[Nan Xiangzhe. (2021). Analysis of the inheritance path of national traditional sports culture. Sports-Leisure: mass sports, 000(002),P.1-1.]Every country has its own unique sports. To study a country's sports, one must pay attention to its culture, history, way of life, and customs. Archery is a traditional sport among many Chinese ethnic groups, with different characteristics in terms of game evaluation methods and bow and arrow manufacturing techniques. Researching ethnic archery without investigating ethnic history is incomplete. Studying the history of archery is most important through the study of archaeological objects. Due to the materials used in making bows, bowstrings, shafts, and arrow feathers, such as bamboo, wood, and feathers, it is difficult to preserve bow materials for a long time. Only arrows made mostly of corrosion-resistant materials such as metal, stone, and bone can be preserved for a long time. Therefore, the study of arrows is an important part of researching archery and bows of various ethnic groups.

Weapons refer to the total name of weapons and equipment used in actual combat in ancient China from the late primitive society to the end of the feudal society, and are a symbol of a powerful country. Tang Shunzhi, a martial artist of the Ming Dynasty, said, "Thirty-six, bow leads the way; eight out of ten, the bow comes first." [Li Jiyuan, & Xie Yelei. From by quan: research on the development of Chinese martial arts.]

Many scholars, such as Zhou Wei, Yang Hong, Li Yi, Mei Wen, Zhu Jianjun, Guo Yanli, Shi Yan, etc., have considered bows and arrows as an important part of their research, indicating the position of bows and arrows among weapons. However, the study of bows and arrows cannot be separated from arrowheads. In the 20 weapon articles, the introduction of the human arrows in the prehistoric primitive society and the study of the shape of the bronze arrows in the northern Qin period all show that

the study of the arrows is an integral part of the study of ancient Chinese weapons. From the perspective of traditional ethnic sports, the study of ancient weapons can be a study of cultural relics of traditional ethnic sports, as well as a study within the scope of weapon science. Looking at the origin of traditional ethnic sports, traditional ethnic sports originated from ancient military warfare, folk activities, and leisure entertainment. As an important tool in military warfare, the study of weapons can be seen as an exploration of ancient Chinese traditional ethnic sports. From the perspective of weapon science, although the weapons used in ancient warfare have been obsolete for about 100 years, the study of ancient weapons can unearth ancient military culture and contribute to the promotion of modern military thinking.[Cong Mlin, & Deng Xinghua. (2019). Northern nomads of riding and archery culture. Compilation of paper abstracts of the 11th National Sports Science Conference.]

The ultimate purpose of this article is to design a set of pictures and text explanations for students to learn. Its purpose is to enable students to better and faster accept the three techniques of archery learning and rapid growth.

2. Research Objectives

- 1) To study and collect literature materials; study the history and culture of archery and related content.
- 2) To study and analyze archery techniques, how to design a manual for teenagers to learn archery, Create illustrations of archery skills for learning.
- 3) To design and produce an archery manual, using illustrations for

Teenagers in Educational

3. Research Question

- 1) What is the traditional Chinese archery culture, how to introduce the bow and arrow culture, as well as the history and culture of archery and the knowledge of bow and arrow? And the use process of bows and arrows.
- 2) How is the archery cultural heritage used to pass it on to the younger generation? What is the essence of young people's learning? How do they transfer their knowledge through their images?
- 3) In the learning process, it is important to consider how students can quickly integrate into the archery culture. How to help students master archery techniques more quickly. With detailed textual and visually driven explanations, should teaching actions be more precise and standardized?

4. Research Methods

This study employed a qualitative research approach. I described the elements of the research methodology as follows.

4.1 Population:

The population sample of Chinese archery learning youth refers to the young people in educational institutions obtained through specific sampling, with the students from Luoyang Normal University as the population sample 4.1.1 Young people from Chinese educational institutions (taking college students as an example)

Example of experiences of students at Luoyang Normal University: A group of young people majoring in physical education and non-physical education were purposefully sampled.

4.1.2 Local Government and Related Departments

Luoyang Museum, the Palace Museum, Henan Provincial Museum, the Terracotta Warriors and Horses of the First Emperor of Qin, Anyang Yin Xu site, Luoyang Normal University, Shaolin Temple, etc.

4.2 Data Collection

4.2.1 On-site Work and Data Collection

- 1) Interview: formal interview, informal interview, focus group interview
- 2) Visit: Normal observation (or general observation), participatory

observation

4.2.2 Document and Data Collection

Collect books related to archery, such as Shooting Classics, Learning and Shooting Records, and collect bow and arrow materials in museums

4.2.3 Tools or Equipment for Data Collection :Questionnaire, interview, assessments

4.3. Data Integration and Analysis

I use this research framework as an introductory classification tool for data synthesis and data collection. I organize the information in detail based on the summary of each chapter in the research paper. Then, I describe the analysis using the concepts of the research. A corresponding learning plan is developed for adolescents' cognition and learning of archery culture.

5. Museum

In the study of the bow and arrow culture, I went deep into the data of many museums in China for many times, including the style of bow and arrow, the related documents, related books, and the paintings of bow and arrow with historical characteristics. including the Luoyang Museum, National Museum of China, Luoyang Erlitou Archaeological Museum, Henan Museum, and Anyang Yin Xu Museum, collecting data related to bows and arrows.

6. Research Scope

6.1 Study Area

According to the content of the article, a large amount of data on archery techniques and archery modeling systems has been collected, and some physical objects have been inspected and studied on site. Some bows and arrows collected by the museum can be traced back to ancient times from the collections of museums such as the Henan Museum, the Palace Museum in Beijing, the Military Museum of China, the Luoyang Museum, the Erlitou Museum, and the Yin Xu Museum.

Ancient texts related to bow and arrow making and archery, such as "The Art of Archery", "Records of Archery Studies", "History of Archery", "Research on Archery Rituals in the Two Zhou Dynasties", "Authentic Martial Arts Archery", "Wide Records of Matters", "Records of Finger Whistling and Arm Wrestling", new books on bow and arrow, and technical guides on archery

6.2 Time

Research duration: August 2023 to April 2024.

The historical period studied is based on the shape, characteristics, and archery techniques of bows and arrows from the pre-Qin to the Qing feudal history. Images are collected, and textual explanations and annotations are provided based on the actions in the images.

7. Concepts and Conceptual Framework

7.1 Research Concepts

7.1.1 Chinese Archery Cultural Heritage

Archery culture is an important part of traditional Chinese culture. Chinese archery art has a deep historical background and unique artistic charm. It is not only a sport competition, but also a spiritual pursuit to cultivate personal morality and emotions. The history of archery can be traced back to ancient times, and it is closely related to the civilization history of the Chinese nation. It is one of the treasures of ancient Chinese culture.

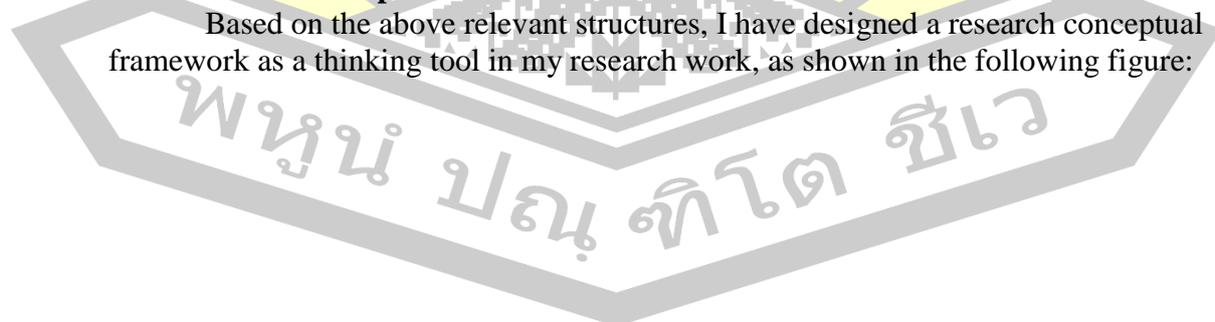
The origin of archery can be traced back to ancient times, when people needed to master archery skills for survival and hunting. Over time, archery evolved into a form of entertainment and sport, and became an important component of military skills. In ancient China, the art of archery was considered a noble art, widely used in warfare, hunting, sports competitions, and ceremonial occasions.

The art of shooting is not only a sport, but also a way to cultivate personal ethics. During the process of archery, the shooter needs to be calm, focused, and patient, and the cultivation of these qualities helps shape the shooter's character. At the same time, the art of shooting also emphasizes etiquette and ethics. Archers should adhere to strict rules and etiquette during the archery process, which helps cultivate self-discipline and respect for others.

In traditional Chinese culture, arts such as archery, poetry, painting, and calligraphy are integrated with each other, forming a unique cultural phenomenon. Many ancient literati considered archery as an elegant form of entertainment, using it to express their emotions and cultivate their sentiments. In the poetry of these literati, there are often praises and descriptions of the art of archery, which further enrich the cultural connotations of archery art.

7.2 Research Conceptual Framework

Based on the above relevant structures, I have designed a research conceptual framework as a thinking tool in my research work, as shown in the following figure:



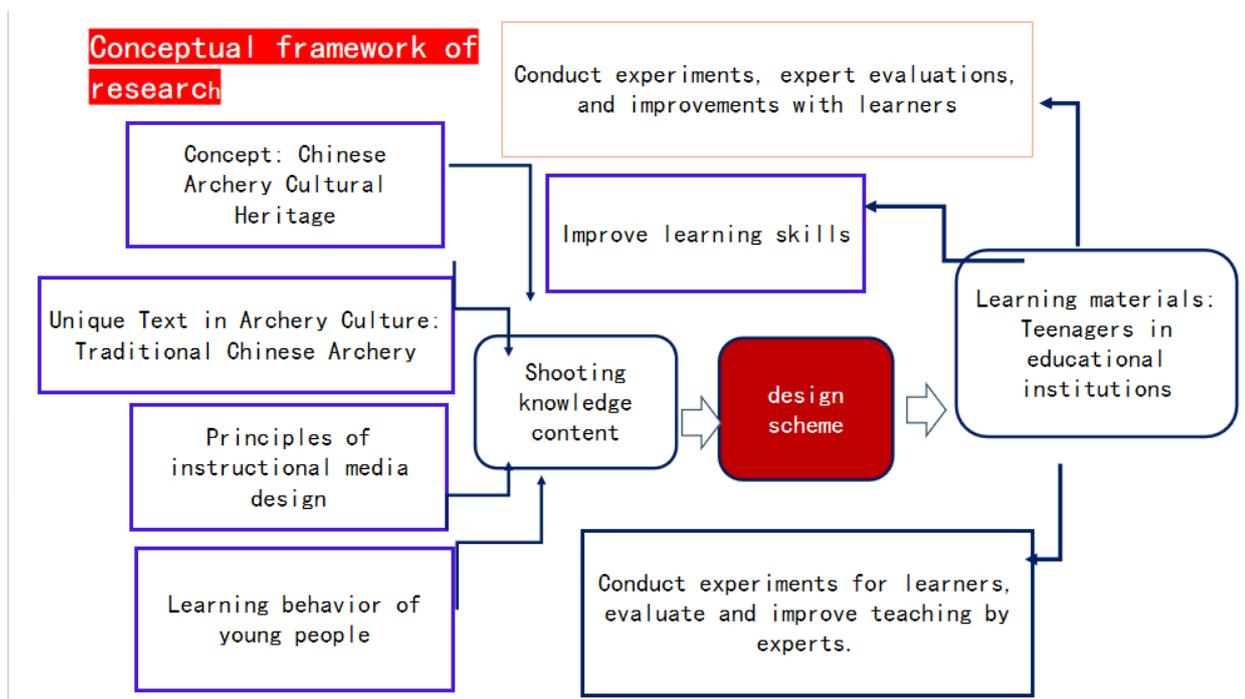


Figure 1 Conceptual Framework

In the process of research, I went to some universities and clubs offering archery, visited experts and professors studying bow and arrow culture and folk archery masters. And get guidance and question answers. And got the questions about archery skills. Among them, Mr.Li Zijian from Zhulin Town, Gongyi, explained to me the development process of firing method and some technical problems. Mr.Qiao Fengjie, professor of Tsinghua University, gave guidance and improvement on teaching evaluation. In the process of classroom teaching, Dr. Xiao Wu and Professor Zhang Xiaofeng from Luoyang Normal University came to guide the shortcomings in the teaching process. More detailed and explicit guide to this study according to the structure diagram.



CHAPTER II

As research on Chinese archery culture deepens, the introduction of Chinese archery culture from an artistic perspective is gradually becoming more in-depth. This chapter first provides an overview and analysis of the historical and cultural background of the selected texts to guide the cultural study of archery. It explores the connection between the Six Arts culture and archery through textual explanation, and also delves into the culture of archery separately. The chapter summarizes the various functions of archery and the current cultural status, while introducing the bows and arrows of different periods in Chinese history and providing detailed descriptions of their functions.[Wang Dan. (2019). Ancient hunting studies —— martial arts history perspective. Compilation of paper abstracts of the 11th National Sports Science Conference.].

2.1 Historical Background

The invention of the bow and arrow is undoubtedly a sign of progress in social productivity. Engels, the founder of Marxism, a great philosopher, thinker, and educator, said, "The bow and arrow are the decisive weapons of the ignorant age, just as the iron sword is to the barbaric age, and fire to the civilized age." As the "longest-used weapon on ancient Chinese battlefields," the bow and arrow played different roles in different periods. The bow and arrow were hunting tools for primitive humans, essential weapons on ancient battlefields, and entertainment tools in people's daily lives. In modern times, it is a piece of sports equipment, with its styles, uses, and manufacturing materials evolving¹The "Royal Hunting Map Hunting" by Emperor Qianlong of the Qing Dynasty is a dynamic moment where he and his relatives, princes, and ministers shoot wild rabbits at the Southern Hunting Ground. Through accurate and vivid depictions of characters riding horses and rabbits running, Emperor Qianlong's proficient horseback riding skills and creative themes of martial arts and archery were successfully demonstrated



Figure 2 Royal Hunting map"

Source: The Palace Museum; Photographed by Xia Zhiyou, 2017

1) Manchu Imperial Tradition: Hunting was a traditional activity of the Qing Dynasty imperial family. In the early days, the Manchu people relied on hunting for a living. Although they later became the ruling class of a feudal dynasty, hunting activities survived and gradually evolved into a form of entertainment and recreation suitable for the royal family.



Figure 3 'Emperor Qianlong Hunting and Banquet Scene' by the Palace Museum

Source: The Palace Museum; Photographed by Xia Zhiyou, 2017

2) Manchu Ethnic Culture: Hunting has a deep foundation in Manchu culture. The ancestors of the Manchu people hunted in Changbai Mountain to obtain food and supplies, so hunting was an important means of their survival. However, over time, hunting gradually evolved into a new cultural tradition and a symbol of status.





Figure 4 Qing Yuling's "Hunting Picture", Palace Museum,

Source: The Palace Museum; Photographed by Xia Zhiyou, 2017

1.National Policies:

During the Qing Dynasty, hunting was not only an activity of the royal family, but also a state policy. The rulers of the Qing Dynasty hunted to demonstrate their authority and control over the people, as well as to showcase the unity and strength of the Manchu people.

Emperor Qianlong himself also had a strong interest in hunting. He not only seeks entertainment and challenges in hunting activities, but also demonstrates his personal courage and strength through hunting. During the fifty years of Emperor Qianlong's reign, many large-scale hunting activities were held, and some famous paintings depicting hunting scenes were left behind.

2. Social Environment:

In the mid-Qing Dynasty, the social environment was relatively stable, and the economy had reached its peak. In the stable social background of relatively stable economic and political conditions, it provided favorable conditions for Emperor Qianlong to hold large-scale hunting activities.

In this superior environment, the historical background of the Qing Dynasty Qianlong hunting map is a complex and diverse intertwined body, reflecting not only the authority and tradition of the royal family,

but also the cultural and economic conditions of the society at that time, (Figure 5) The ice hee e picture is a scene of hunting on the ice in winter.



Figure 5 Clear "Ice Smile Map" by the Palace Museum,
Source: The Palace Museum; Photographed by Xia Zhiyou, 2017

1.2. Painting Style of the Qing Dynasty During the Qianlong Period

According to the modern painting of the Qing Dynasty Qianlong period, it can be summarized based on the painting style, which can be divided into the following aspects:

- 1) Exquisite and delicate brushwork: The painting style of the Qianlong period inherited the essence of traditional Chinese painting. Exquisite brushstrokes and attention to detail in expression. Enable painters to demonstrate superb painting skills through intricate depictions of themes such as flowers, birds, and characters. This style





Figure 6 Qing Lang Shinin's "Flower and Bird Painting", by the Palace Museum
Source: The Palace Museum; Photographed by Xia Zhiyou, 2017

2) Pursuit of elaborate decoration: Many paintings from the Qianlong period aimed at achieving strong decorative effects to showcase the royal style of that time. The colors, lines, composition, etc. in the paintings were carefully designed, displaying a strong courtly style. This style not only reflected the wealth of the royal family but also the aesthetic preferences of the society at that time.





Figure 7 Emperor Yongzheng of the Qing Dynasty, by the Palace Museum
Source: The Palace Museum; Photographed by Xia Zhiyou, 2017

Integration of Western techniques: During the Qianlong period, with the rise of the Industrial Revolution in Western countries and the Renaissance in Western Italy, the exchange between Chinese and Western painting became more frequent. Western painting techniques began to influence local painting styles. Some artists started to incorporate Western techniques into traditional Chinese painting, creating paintings with certain light and shadow effects and a sense of three-dimensionality. This style was widely used in court painting and portraiture at that time.

The Renaissance of literati painting: During the Qianlong period, literati painting gradually revived and became a major trend in the painting world. Literati painters focused on nature as their main theme, pursued a simple and elegant painting style, and emphasized the artistic conception and emotional expression in painting. This style formed a sharp contrast with the court painting style of the time, reflecting the different cultural backgrounds and aesthetic pursuits of different social

classes.[Wang Wang. The "artistic conception" in literati painting and the "artistic conception" in image painting. (Doctoral dissertation, Sichuan Fine Arts Institute).]The painting style of the Qianlong period exhibited diversity and fusion, continuing traditional meticulous brushwork and decorative styles, as well as incorporating Western techniques and reviving literati painting. These styles together formed the unique painting style of the Qianlong period of the Qing Dynasty.



Figure 8 Qianlong's Hundred Horses Painting, by the Palace Museum

Source: The Palace Museum; Photographed by Xia Zhiyou, 2017

2. Research on archery culture

2.1 Archery

2.2.1 The Connection between the Six Arts and Archery Culture

The six arts of ritual, music, archery, charioteering, calligraphy, and mathematics were the core content of the education system for ancient Chinese slave-owning aristocrats. Among them, archery, as one of the six arts, was given a high social status by the ruling class. In the process of development of ancient Chinese society, the culture of archery has gradually transformed from a simple martial life skill to a cultivation method with rich humanistic spirit. During the Shang and Zhou dynasties, archery was endowed with deeper ritual connotations and gradually developed into archery ceremonies, becoming an indispensable part of the daily life of the nobility at that time.[Gai Wenliang, & Wang Baojin. (2021). Exploration of the cultivation path of humanistic spirit in university physical education teaching. Contemporary Sports Technology, 011 (004), 86-87,90.]Archery also played an important role in ancient warfare. For example, the crossbow shooting technique during the Spring and Autumn Period and the Warring States Period became the deadliest long-range weapon in the era of cold weapons. As history progressed, the archery culture continued to be inherited and developed. During the Tang Dynasty and Wu Zhou period, Wu Zetian listed archery as an important item in martial arts examinations, further developing shooting skills in the military field. In the Song Dynasty, archery

gradually popularized among the common people and became a folk sport. After the Ming Dynasty, archery was regarded as a traditional folk culture and gradually integrated into people's daily lives. In modern society, archery culture has always been a new inheritance and innovation. Many schools and educational institutions have incorporated archery into physical education courses as an important means to cultivate students' comprehensive qualities. In addition, the art of shooting has also become an important carrier of international cultural exchanges. Many international friendly exchange activities use archery as the opening or closing ceremony. Based on this, the art of archery is gradually revitalized, attracting more and more people to engage in archery sports, thereby promoting the inheritance and development of archery art and culture.

2.2.2 Introduction to Archery Culture

The level of archery includes the types of bows, the making of arrows, archery postures, and techniques. In ancient China, there were many types of bows, such as wooden bows, horn bows, bronze bows, among which the horn bow was the most precious. The production of arrowheads was also very delicate, with specific production processes for arrow shafts, arrowheads, arrow feathers, etc. Archery postures and skills include raising the bow, drawing the bowstring, aiming, and shooting arrows, with detailed teaching and training guidance for each step.[Yi Degang. (2007). Analysis of ancient Chinese bow and arrow making literature. Journal of Inner Mongolia Normal University: Natural Science in Chinese, 36 (6), 5.]

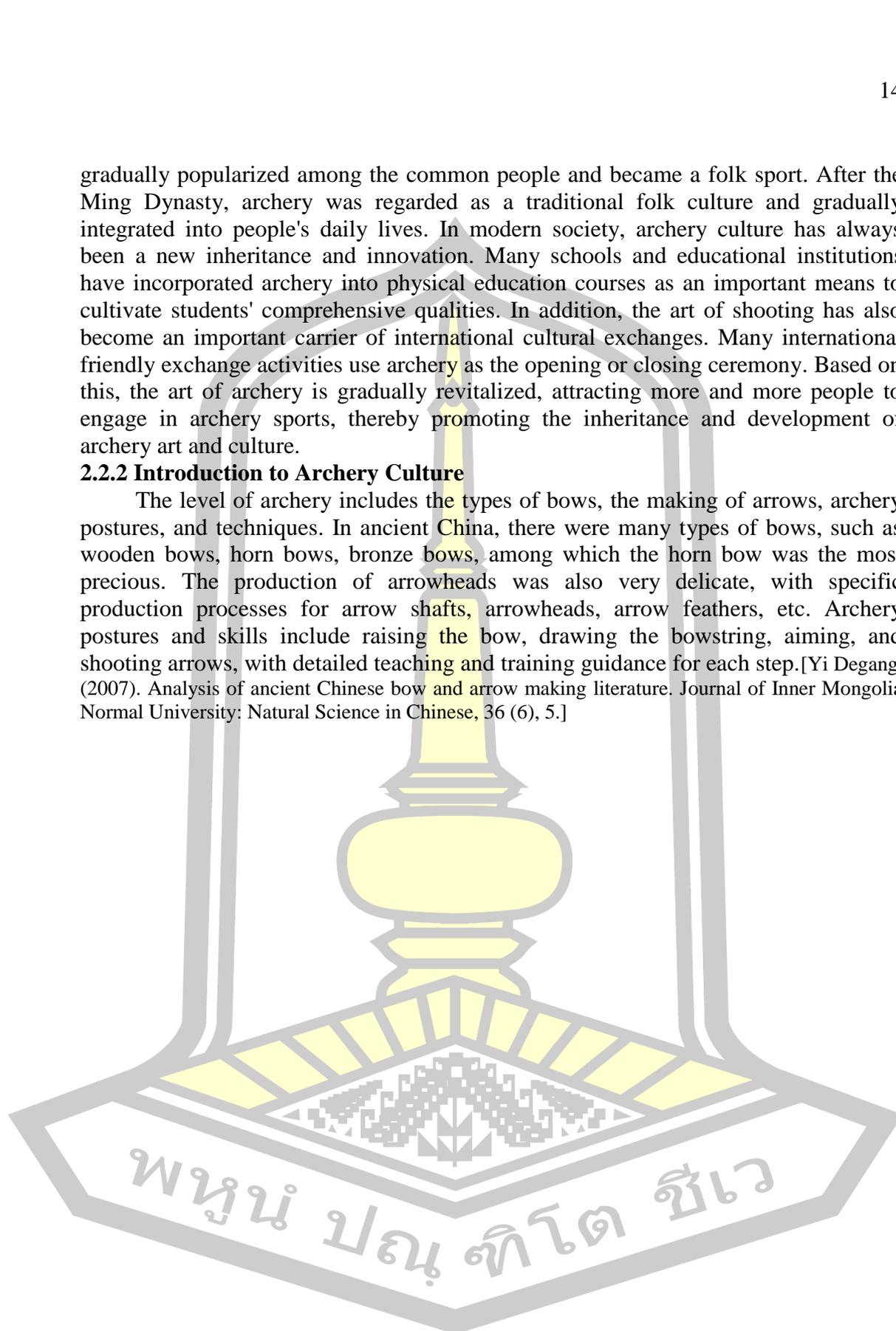




Figure 9 Long shoot bow (self-use) Xia Zhiyou,
Source: Luoyang home; Photographed by Xia Zhiyou, 2023

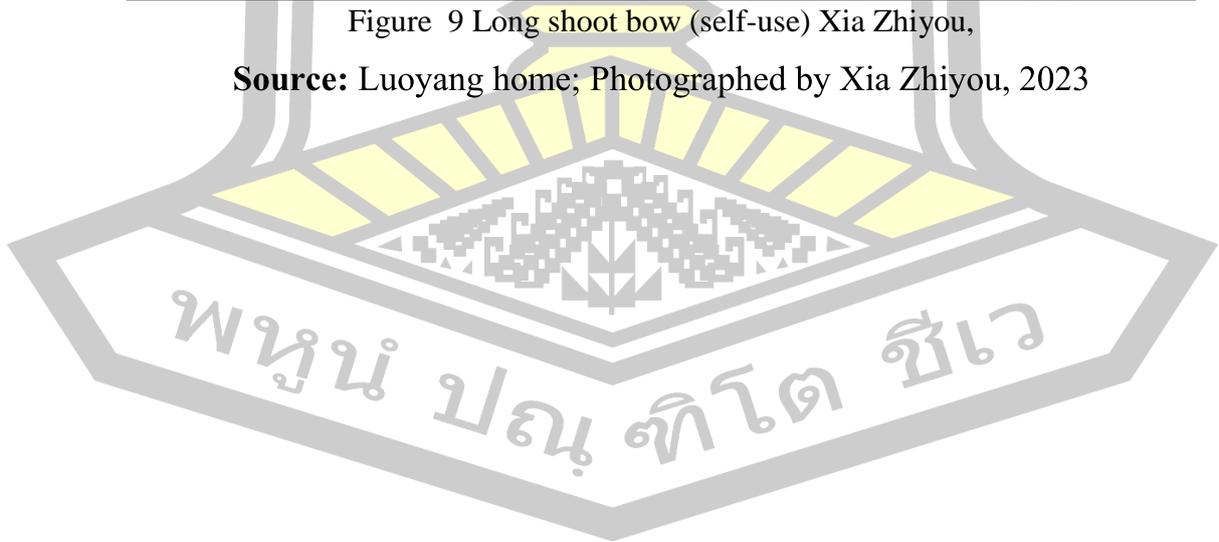




Figure 10

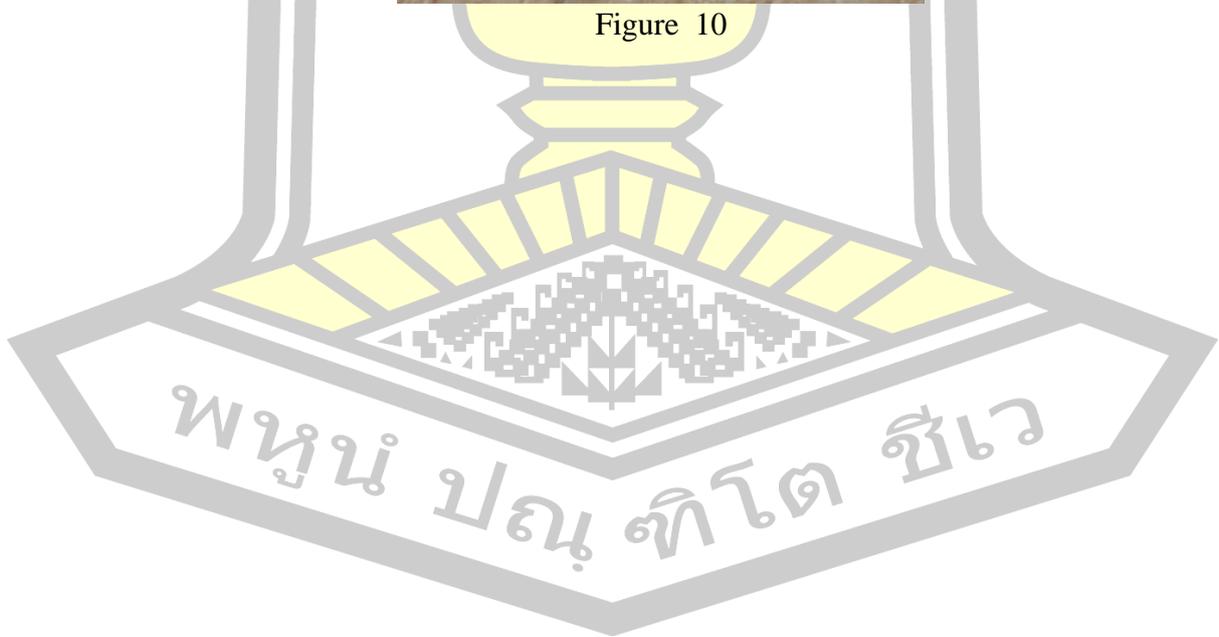




Figure 11 Agate arrow HEAD

Source: Luoyang home; Photographed by Xia Zhiyou, 2023

When it comes to archery etiquette, it mainly includes the process of archery and the norms that participants should follow. The shooting ceremony process is divided into welcoming, bowing, shooting, target evaluation, reward, and other links, each of which has strict etiquette requirements. Participants must follow rules such as respecting the bow and arrow, respecting opponents, and following game rules.

The spiritual aspect of archery mainly manifests in the shaping of one's character and spiritual qualities. Archery requires qualities such as calmness, focus, and decisiveness. Through archery, people can train their minds and cultivate qualities such as humility, caution, and self-discipline. Additionally, the art of archery also emphasizes fair competition, promoting the spirit of friendship first and competition second.

The art of archery has always been an important carrier of cultural dissemination throughout Chinese history. Through wars, trade, and cultural exchanges, it has spread to neighboring countries and regions. In modern times, the dissemination of archery culture mainly occurs through school education, sports competitions, cultural exchange activities, etc., so that more people can understand and participate in the art of archery.

2.1.3 The Function and Significance of Archery Sports

Archery plays different roles and holds different meanings in modern society. After reading literature and books, a brief summary of the culture of archery art is as follows:

1. Promoting traditional culture: As one of the Six Arts in ancient Chinese Confucian culture, archery is an important part of traditional Chinese culture. In-depth study and inheritance of the art of archery can help promote national culture, enhance national confidence, and strengthen national cohesion.

2. Talent cultivation: Integrating archery skills into the education system helps to cultivate students' physical, psychological, and moral qualities. The spiritual qualities of self-discipline, concentration, and fair competition have positive significance for the talent cultivation needed in modern society.

3. Promoting international exchange: Archery, as a vehicle for international cultural exchange, can enhance understanding and friendship among people of different countries, promoting international cultural exchange and cooperation.

4. Sports competition: Archery is a competitive sport that can improve people's physical fitness and athletic skills, as well as cultivate a competitive spirit.

5. Leisure and Entertainment: Archery, as a traditional sport, has high appreciation and interest, providing the public with a healthy and enjoyable way of leisure and entertainment. At the same time, archery has also led to the development of throwing games.

6. Social education: The promotion and popularization of archery can help enhance the public's understanding and respect for traditional culture, improve social morality and fashion, and promote social harmony and stability.

7. National Defense: Archery played an important role in ancient warfare. In modern society, the study and inheritance of archery can provide historical experience and reference for national defense construction.

Archery plays different roles and holds different meanings in modern society. In-depth research and promotion of archery are of great significance for promoting Chinese culture, nurturing talents, enhancing international exchanges, and contributing to national defense. In the context of the new era, archery will bring forth new vitality and contribute its unique value to the development of society.

3. Current Situation of Archery Culture

The development of archery culture in China is showing a positive trend. On the one hand, traditional archery has made significant achievements in academic research, educational promotion, cultural exchange, and other aspects; on the other hand, modern archery has become popular among the public.

In the academic research field, archery has always been highly regarded by domestic experts and scholars. Many academic papers and monographs have delved into the history, techniques, etiquette, and spiritual connotations of the art of archery, providing theoretical support for the inheritance and development of archery. In addition, various archery seminars, lectures, and forums in China have further promoted in-depth research on archery.

In terms of educational promotion, archery has gradually entered campuses. Many schools have included archery as a physical education course or extracurricular activity to cultivate students' interest and skills. In addition, some social training

institutions have also offered archery courses, providing a platform for young people to learn shooting skills.

Archery plays an important role in cultural exchanges. In international friendly exchange activities, the art of archery is often an important part of Chinese culture, allowing foreign friends to understand and appreciate the charm of traditional Chinese archery. At the same time, archery also provides opportunities for sports exchanges between China and other countries in international archery competitions and other events.

Modern archery sport has developed rapidly in China. Various archery competitions have been held to select and train excellent archers. The Chinese archery team has achieved outstanding results in domestic and international competitions, bringing honor to the country. The popularization of modern archery sport has enriched the development of archery culture.

In the process of inheritance and development, archery culture also faces some challenges. For example, modern society needs to improve its understanding of traditional archery skills, the allocation of archery education resources is uneven, and the popularity of archery is relatively low in some regions. Therefore, we need to strengthen the protection and inheritance of archery culture, and enhance the status and influence of archery culture in modern society.[Shao Jianxun, & Huang Xin. (2019). The contemporary value of traditional archery art and its realization path. Compilation of paper abstracts of the 11th National Sports Science Conference]

Archery culture has been widely disseminated and inherited in contemporary Chinese society. In the context of the new era, archery culture will continue to demonstrate vitality and vigor, making contributions to the social development of China and international cultural exchange. Faced with the challenges of artistic and cultural development, we must strive to promote the inheritance and innovation of art, making art shine even more in the new era.

4. Literature Review

4.1 Research on Research Texts

Li Xiaohua and Wang Zhen have discussed the inheritance and protection of traditional Chinese archery culture in military warfare, which elevated the historical status of archery. Due to the frequent wars in ancient times, the function of archery shifted from hunting to military purposes, leading to its widespread use. Throughout the era of cold weapons, archery existed as an important military weapon. In the Southern Song Dynasty, Hua Yue's "Cui Wei's Northern Expedition Record" stated: "There are thirty-six military weapons, with the bow being the most important; there are eighteen martial arts, with archery ranking first." As early as in primitive society, the military significance of archery was already evident. It is said that during the battle between the Yellow Emperor and Chi You at Zhuolu, the Yellow Emperor defeated Chi You with the advantage of archery, laying the foundation for the Han Chinese. With the emergence of class society, the appearance of armies greatly highlighted the shooting function of archery in killing enemies. During the pre-Qin period, due to frequent wars, various vassal states introduced the highly skilled "archery etiquette" into military training for their own interests. In this context, some complex hierarchical systems related to archery etiquette were gradually abolished, and the "archery skills" required by wars began to develop among the common people,

who actively learned to use them for their survival. In the Han Dynasty, the combination of archery and horseback riding in warfare greatly enhanced the military power. Historical records show that Liu Bang once led 320,000 troops to attack the Xiongnu, but was surrounded by their cavalry archers, almost leading to the total annihilation of his army. Later, Liu Bang learned the cavalry archery techniques of nomadic peoples, significantly increasing the combat effectiveness of his army and achieving victory in the war. During the Tang Dynasty, the martial examination system was implemented during the reign of Empress Wu Zetian, where archery was a crucial component with five different types of shooting techniques, highlighting the importance of archery in military use during that era. The long-term preservation and use of archery in the course of history can be largely attributed to the needs of warfare, which in turn solidified the important role of archery in military affairs. History has proven the necessity and significance of archery in warfare, demonstrating its pivotal historical position when used in battles.

In the article "Analysis of Factors Affecting Archery Step Movements", Liu Qizhi and Wang Luyao conducted research on the factors influencing archery steps, using three-dimensional motion capture technology and surface electromyography technology. They proved that different modes of archery steps have different training effects. Among them, the effects of step length and rear foot height are most significant. A long-distance archery step increases the load on the anterior cruciate ligament and posterior cruciate ligament of the front leg, and the greater the step distance, the higher the activation levels of the gluteus maximus, quadriceps femoris, hamstrings, adductor magnus, rectus femoris, and gastrocnemius muscles in the lower limbs. Additionally, a high rear foot in the archery step can increase the activation levels of the quadriceps femoris, adductor magnus, gluteus maximus, and gluteus medius muscles. In the study of front foot height in the archery step, raising the front foot height reduces the muscle activation levels in the lower limbs and training effects, but increases the activation level of the quadriceps femoris.

In the study of the lunge movement, research on unstable surfaces is the most common. Different stability methods can lead to different training effects, which cannot be generalized. However, training the lunge movement on an unstable surface can reduce ankle injuries and improve body balance and stability.

Zhou Fang and Ma Yongtao provide a detailed description of the cultural value of archery in their research on "The Socialization Value of Archery Rituals and Contemporary Inheritance Paths".

1. The social value of archery etiquette: The core educational value of archery etiquette - observing virtues through archery. The educational principles of archery etiquette - external and internal reflection. The educational methods of archery etiquette - harmonizing ritual and music, cultivating both internal and external qualities. The educational purpose of archery etiquette - self-reflection and selecting talents.

2. The contemporary inheritance value of archery ceremony: Upholding the rich cultural and spiritual connotations of traditional archery ceremony nurtures the core socialist values of contemporary society and promotes the indigenous Chinese sports spirit.

3. The Contemporary Inheritance of Archery Etiquette: Academic Inheritance: Increase the scientific research on archery rituals and enrich theoretical research results.

4. Institutional Inheritance: Formulating policies and regulations for the protection and development of traditional archery.

5. Education Inheritance: Promote Traditional Archery into Campus Program and strengthen the practical inheritance foundation.

6. Media Inheritance: Increase the promotion of traditional etiquette through new media.

7. Industrial Inheritance: Developing industrial promotion pathways for traditional archery.

4.2 Archery Culture

Overview of the Six Arts Culture: The six skills of ritual, music, archery, charioteering, calligraphy, and mathematics were collectively known as the core content of the education system for ancient Chinese slave-owning aristocrats. Among them, archery, as one of the six arts, was endowed with high social status by the ruling class. In the development process of ancient Chinese society, archery culture has gradually evolved from a simple martial life skill to a cultivation method with rich humanistic spirit. [Lin Sitong. (1984). "Shooting" and "royal" in the Western Zhou school education. *Sports Science* (2), 7-12] During the Shang and Zhou dynasties, archery was endowed with deeper ritual significance and gradually developed into archery ceremonies, becoming an indispensable part of the daily life of the nobility at that time. At the same time, the art of archery also played an important role in ancient warfare. For example, crossbow shooting techniques during the Spring and Autumn period and the Warring States period became the deadliest long-range weapons of the era of cold weapons. As history progressed, the culture of archery continued to be passed down and developed. During the Tang and Wu Zhou periods, Empress Wu Zetian included archery as an important part of martial arts examinations, further developing shooting skills in the military field. In the Song dynasty, archery gradually spread to the common people and became a popular folk activity. After the Ming dynasty, archery was regarded as a traditional folk culture and gradually integrated into people's daily lives. In modern society, the culture of archery has always been a new form of inheritance and innovation. Many schools and educational institutions have incorporated archery into physical education curriculum as an important means of cultivating students' overall qualities. In addition, the art of shooting has also become an important medium for international cultural exchange. Many international friendly exchange activities feature archery as a performance in opening or closing ceremonies. Based on this, the art of archery has gradually revived, attracting more and more people to engage in archery sports, thereby promoting the inheritance and development of archery art and culture.

Introduction to Archery

Including types of bows, arrow making, archery posture, and techniques. In ancient China, there were many types of bows, such as wooden bows, horn bows, iron bows, etc., among which horn bows were the most precious. The production of arrowheads was also very delicate, with specific production techniques for arrow shafts, arrowheads, arrow feathers, etc. Archery posture and skills include raising the

bow, drawing the bow, aiming, releasing the arrow, and so on, with detailed teaching and training guidance for each step.

In terms of archery etiquette, it mainly includes the process of archery and the norms that participants should follow. The process of the shooting ritual is divided into welcoming, bowing, shooting, target evaluation, reward, and other links, each of which has strict etiquette requirements. The rules that participants must follow include respecting the bow and arrow, respecting opponents, and following the game rules.

The spiritual aspect of archery mainly manifests in the shaping of one's character and spiritual qualities. Archery requires qualities such as calmness, focus, and decisiveness. Through archery, people can train their minds and cultivate qualities such as humility, prudence, and self-discipline. Additionally, the art of archery also emphasizes fair competition, promoting the spirit of friendship first and competition second.[Shao Jianxun, & Huang Xin. (2019). The contemporary value of traditional archery art and its realization path. Compilation of paper abstracts of the 11th National Sports Science Conference.]

Archery has always played a significant role in the dissemination of Chinese culture throughout history. Through wars, trade, and cultural exchanges, it has spread to neighboring countries and regions. In modern times, archery culture is mainly disseminated through school education, sports competitions, and cultural exchange activities, allowing more people to appreciate and participate in this art form.

4.2.3 Function and Significance of Archery as a Sport

Archery plays various roles and holds different meanings in modern society. After reviewing literature and books, a brief summary of archery culture is as follows:

1. Promoting traditional culture: As one of the Six Arts in ancient Chinese Confucian culture, archery is an essential part of traditional Chinese culture. In-depth study and inheritance of the art of archery can help promote national culture, enhance national confidence, and strengthen national unity.

2. Talent cultivation: Integrating shooting skills into the education system helps cultivate students' physical fitness, psychological qualities, and moral qualities. The spirit of self-discipline, concentration, and fair competition is of significant importance for talent cultivation in modern society.

3. Promoting international exchange: Archery, as a vehicle for international cultural exchange, can enhance understanding and friendship among people of different countries, and promote international cultural exchange and cooperation.

4. Sports competition: Shooting is a competitive sport that can improve people's physical fitness and athletic skills, as well as cultivate a competitive spirit.

5. Leisure and entertainment: Archery, as a traditional sport, has a high level of appreciation and interest, providing the public with a healthy and fun way to relax and enjoy themselves. At the same time, it has also spawned games involving throwing darts.

6. Social education: The promotion and popularization of archery can help improve the public's understanding and respect for traditional culture, enhance social morality and fashion, and promote social harmony and stability.

7. Defense construction: Archery played a vital role in ancient warfare. In modern society, the study and inheritance of the art of archery can provide historical experience and reference for defense construction.

Archery plays diverse roles and holds significant meaning in modern society. In-depth research and promotion of archery art are of great significance for promoting Chinese culture, cultivating talents, promoting international exchanges, and national defense construction. In the context of the new era, archery art will unleash new vitality and vigor, contributing its unique value to the development of society [Wang Sifa. (2019). On the inheritance and innovation of Dunhuang Art in high school teaching. Cultural industry (21), 2.]

4.3 The Current Status of Archery Culture

In contemporary times, the development of Chinese archery culture has shown a positive trend. Traditional archery has achieved significant achievements in academic research, educational promotion, cultural exchange, and modern archery has become popular among the masses.

In the field of academic research, archery has always been highly regarded by domestic experts and scholars. Many academic papers and monographs have conducted in-depth discussions on the history, techniques, etiquette, and spiritual connotations of the art of archery, providing theoretical support for the inheritance and development of archery art. In addition, various archery seminars, lectures, and forums in China have further promoted in-depth research on archery.[Chen Kang. (2003). Study on archery images of Dunhuang frescoes. Northwest Ethnic Studies (4), 5.]In terms of educational promotion, archery has gradually entered campuses. Many schools have included archery as a physical education course or extracurricular activity to cultivate students' interest and skills. In addition, some social training institutions have also offered archery courses, providing a platform for young people to learn shooting skills.

Archery plays an important role in cultural exchanges. In international friendly exchange activities, archery is often an important part of Chinese culture, allowing foreign friends to understand and appreciate the charm of traditional Chinese archery. At the same time, archery also provides opportunities for sports exchanges between China and other countries in international archery competitions and other events.

Modern archery sport has developed rapidly in China. Various archery competitions have been held to select and train excellent archers. The Chinese archery team has achieved outstanding results in domestic and international competitions, bringing honor to the country. The popularization of modern archery sport has enriched the development of archery culture.

In the process of inheritance and development, archery culture also faces some challenges. For example, the modern society needs to improve its understanding of traditional archery skills, there is uneven distribution of archery education resources, and the popularity of archery is relatively low in some regions. Therefore, we need to strengthen the protection and inheritance of archery culture, and enhance the status and influence of archery culture in modern society.

In conclusion, the art of archery has been widely disseminated and inherited in contemporary Chinese society. Against the backdrop of the new era, archery culture will continue to demonstrate vitality and vigor, contributing to the social development of China and international cultural exchange. Faced with the challenges of artistic and cultural development, we must strive to promote the inheritance and innovation of art, making art shine even brighter in the new era.

Literature Review on Archery Culture

China is one of the earliest countries to invent bows and arrows in the world. Since the birth of primitive society, bows and arrows have had a significant impact on various aspects of human society and still exist as a sport. As a cultural carrier, bows and arrows reflect the social status and institutional characteristics of the time, forming different types of bow and arrow cultures centered around archery. The bow and arrow culture originates from bows and arrows. We can divide the Qin bow and arrow culture into four types: hunting culture, ritual archery culture, archery art education culture, and military archery culture.[Zhou Yating. Research on the archery movement in the pre-Qin period. (Doctoral dissertation, Soochow University).]Currently, research monographs on this topic mainly include "Chinese Archery Research" - "Archery Books", "Yang Baiqiang", and Feng Hui's "Chinese Archery Culture". Among them, Chinese archery books provide a comprehensive discussion of ancient Chinese archery from multiple perspectives. "Chinese Archery Culture" is a commentary book on archery culture, systematically showcasing the development background and characteristics of Chinese archery culture. Since bows and arrows were a type of cold weapon in ancient times, they are also discussed in some monographs on ancient weapons. Mr. Zhou Wei used Mr. Yang's theory of China's ancient weapon Bushi in the draft of ancient Chinese weapons. He discussed the origin of bows and arrows in the Former Qin and Han dynasties, the shape and use by Mr. Li Yuese, military technology in ancient China, the bow in Volume V, and the origin, development, and social role of bows and crossbows in the two-six parts in depth. In addition to the works listed above, there are also numerous research papers discussing archery culture. The main research papers include those by Wu Puzhao and Wang Zhongjun. This article discusses the key military use of bows from the origin of archery practice to the Spring and Autumn Period, the Warring States Period, and the Han Dynasty, combining discussions on the acquisition of wind and the preliminary research on archery by Lv Jinfeng. Mr. Ma Mingda's "Examination of Ancient Chinese Archery Books" rigorously studies Chinese archery works recorded before the Qing Dynasty that have been passed down to this day. Research papers on "shooting ceremonies" include Mr. Yang Kuan's "Shooting Ceremonies", Xin Tan's in-depth study of the content of Zhou Dai's shooting ceremonies, and the viewpoints on shooting ceremonies from Tian Li.

5.Introduction to Bows

5.1 Introduction to the History of Bows and Arrows

1.1 Ancient Bow and Arrow

In ancient times, humans invented bows and arrows for survival and hunting. Bows and arrows during this period were mainly made of natural materials such as tree branches and bamboo, with arrows made of wood or bamboo and arrowheads made of stone or animal bones. Although rudimentary, bows and arrows already had basic functionality. In China, bows and arrows were referred to as "stone bows" in ancient times and were important tools for production and life at that time.[Yi Degang, & Zhang Baichun. (2003). Investigation on the production method of "Juyuan" bow and arrow in Beijing. Historical materials of Chinese science and Technology, 24 (4), 19.]

With the development of society, the production technology of bows and arrows has also been improved. In ancient times, bows and arrows were mainly made of materials such as wood, horn, and copper, and they were more diverse, such as wooden bows, horn bows, copper bows, etc. The production of arrows was also more refined, with special craftsmanship requirements for arrow shafts, arrowheads, arrow feathers, etc. Bows and arrows during this period were not only used for hunting but also played an important role in warfare.

1.2 Bows and Arrows in the Xia, Shang, and Zhou Dynasties

During the Xia, Shang, and Zhou dynasties, bows and arrows were important weapons and hunting tools, and their production and use were closely related to the military, social, and cultural aspects of that time. In terms of production, during the Xia, Shang, and Zhou periods, due to technological limitations, bows and arrows were mainly made of wood and bone. Bows were generally made have of elastic wood such as mulberry, oak, or bamboo, processed through cutting, grinding, and baking. Bowstrings were wrapped around the bow using animal gut or hemp thread, and bows and arrows were made of stone, bone, or bronze, with bamboo and wood cut into sharp points for arrows.

In terms of usage, bows and arrows are mainly used for hunting and warfare. In hunting, bows and arrows are effective long-range weapons that can quickly shoot prey. In warfare, bows and arrows are used to attack enemies from a distance, causing casualties and morale impact on the enemy.

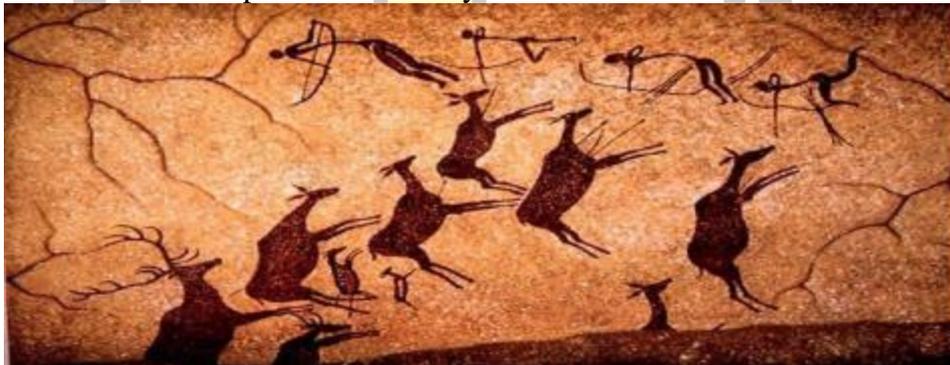


Figure 12 Hunting Scene at Yanshan Stone Carving"

Source : The Yanshan; Photographed by Xia Zhiyou, 2017

The bows and arrows of the Xia, Shang, and Zhou dynasties also had cultural significance. In ancient times, bows and arrows were part of rituals and were sometimes used to indicate status and identity. In ancient funerals, the deceased's weapons and tools, including bows and arrows, were placed in the tomb. The bows and arrows of the Xia, Shang, and Zhou periods were versatile weapons and tools that held significant importance in various aspects of society, military, and culture at that time.



Figure 13 The Legend of Hou Yi Shooting the Sun'

Source : Baidu gallery

1.3 Bow and Arrow in the Warring States Period

During the Warring States period, wars were constantly occurring between states, and the production technology of bows and arrows was further improved. The main body of the bow began to use composite materials, such as bamboo and other woods, while the bowstring was made from animal tendons. This combination significantly increased the elasticity and range of the bow. At the same time, with the continuous advancement of iron smelting technology, arrowheads were made more refined. The arrows were made of iron, with bamboo and wood used for the arrow shafts, and bird feathers for the arrow fletching. This configuration greatly improved the stability and accuracy of the arrows. During this period, there were also specialized archery units, and the role of bows and arrows in warfare became increasingly important.

The Qin and Han dynasties were an important period in Chinese history. During this time, the famous Qin-Han culture was formed, becoming one of the representatives of Chinese culture. Throughout this period, wars were constantly being fought between states, regions, agricultural civilizations, and nomadic tribes. Among them, the bow and arrow played a crucial role as an important military and hunting tool, and saw widespread application and development.[Cong Mlin, & Deng Xinghua. (2019). Northern nomads of riding and archery culture. Compilation of paper abstracts of the 11th National Sports Science Conference.]



Figure 14 Qin cross crossbow of Qin Shihuang

Source : Photo taken by Xia Zhiyou in the summer of 2019

In terms of shape, the bows and arrows of the Qin and Han dynasties mainly had two forms, namely the single bow and the composite bow. The single bow was made of a single material, generally relatively simple, suitable for folk hunting and daily life, while the composite bow was more complex, but more powerful, with a long range and deadly, making it more suitable for military warfare.[Guo Guangyi, & Qian Yaopeng. (2022). See the vibration reduction mode of the bow in the Yin and Shang dynasties. *Wenbo* (4), 50-57.]

During the Qin and Han dynasties, with the frequent occurrence of wars, bows and arrows became important tools in warfare. The use of sophisticated bows in the military provided long range, high accuracy, and strong lethality, posing a significant threat to enemies from a distance. At the same time, many famous archers emerged during the Qin and Han dynasties, such as Li Guang, Lu Bu, and Huang Zhong. Besides military purposes, bows and arrows in the Qin and Han dynasties were widely used in hunting, fishing, competitions, and other activities closely related to archery. Archery also became an important sport, with various competitions and training programs developing. Bows and arrows in the Qin and Han dynasties saw extensive development in craftsmanship, application areas, and cultural significance. They were not only tools for warfare and hunting, but also representatives of sports and culture.

1.4 Bows and Arrows in the Three Kingdoms Period

The Han Dynasty was a dynasty that had a profound influence on Chinese history and culture, playing a transitional role between the past and the future. It was a dynasty known for its martial prowess, with military campaigns against neighboring countries leading to advancements in iron smelting technology. As warfare evolved, the use of bows and arrows as long-range weapons saw significant development. In response to invasions from nomadic tribes in the north and northwest, who were skilled horseback archers, the Han Dynasty placed special emphasis on the use of

bows and arrows as a means of defense. The longbow was one of the most famous representations of archery in the Han Dynasty.



Figure 15 Han Chang's long bow

Source : Photographed in July 2022 Xia Zhiyou

1.4 Bows and Arrows in the Wei, Jin, Southern and Northern Dynasties

During the Wei, Jin, Northern and Southern Dynasties, significant improvements were made in the production skills of bows and arrows. Not only were the bows more sturdy and durable, but the arrows were also more accurate and sharp.

At that time, the main materials for making bows and arrows were bamboo, wood, horn, sinew, leather, bone, etc., with bamboo and wood being the most commonly used materials. Bows were usually made of multiple bamboo or wooden pieces, processed through careful scraping, roasting, bending, and other techniques to give them enough elasticity and strength. Arrows were composed of arrowheads, shafts, and feathers, mainly made of bamboo or wood, with arrowheads made of materials like iron. Arrow feathers were made of bird feathers to increase the stability and range of the arrows.

During the Wei, Jin, and Northern and Southern Dynasties in ancient China, in addition to the improvement of production skills, archery also gained wide application. In warfare, archery was one of the main long-range weapons that could effectively weaken the enemy's combat effectiveness. Archery was also an important tool for hunting and archery competitions. Many nobles and scholars were enthusiastic about archery competitions to showcase their martial arts and style.

During this period, the development of archery was also influenced by cultural and social backgrounds. In the Wei and Northern and Southern Dynasties of China, scholarly culture flourished. Many scholars considered the bow and arrow as an elegant skill and cultural expression. They not only showcased their skills in archery

competitions but also presented bows and arrows as gifts to friends and family as a gesture of friendship and respect. The bows and arrows of the Wei and Northern and Southern Dynasties not only had practical value but also rich cultural significance. They were not just weapons and tools, but also symbols of culture and spirit.



Figure 16 The bow of the Wei and Jin Dynasties in the Xinjiang Museum,

Source : Photographed by Xia Zhiyou in the summer of 2015

1.5 Bow and Arrow in the Sui and Tang Dynasties

During the Sui Dynasty, the manufacturing and application of bows and arrows reached a relatively high level. During this period, bows and arrows mainly included longbows, horn bows, short bows, and lattice bows, each serving different functions. Longbows were used in warfare during marches, horn bows were used on horseback, while short bows and lattice bows were used for hunting and defense. Additionally, the Sui Dynasty saw the emergence of composite bows, made up of layers of wood or bone, resulting in greater resilience and shooting power. In terms of arrows, the Sui Dynasty also had a variety of arrows. Arrows were typically made of bamboo, while arrowheads were made of iron and copper.

In actual combat, bows and arrows are used in various ways, either individually or in conjunction with melee weapons. When using bows and arrows, archers need to have high shooting skills and tactical awareness, and be able to choose the appropriate shooting angle and distance based on factors such as the enemy's situation and terrain. At the same time, the Sui army attached great importance to the training and equipment of bows and arrows, considering them as one of the most important long-range weapons. The Sui Dynasty made great progress in the production technology, shooting techniques, and practical application of bows and arrows, making important contributions to military victories and defense at that time. It also provides more important reference value for the manufacture and use of bows and arrows in later generations.



Figure 17 Tang Dynasty Jiaogong Military Museum,
Source : Photographed by Zhiyou Xia Summer 2017

1.6 Bows and Arrows in the Song and Yuan Dynasties

The Song and Yuan dynasties were an important period in the history of Chinese archery, during which many different types of bows and arrows emerged, exerting a profound influence on the development of archery in later generations.

During the Song Dynasty, due to frequent wars with minority ethnic groups such as the Khitan, Jurchen, and Tangut in the north, bows and arrows became important weapons. Significant innovations were made in the production technology and materials of bows and arrows during the Song Dynasty. Bows and arrows in this period were made of composite materials, such as gluing two to three types of wood together and then subjecting them to processes like heating, bending, and solidifying. Additionally, bows and arrows were equipped with aiming devices to accurately calculate range and angle, improving shooting accuracy and efficiency.

During the Yuan Dynasty, the Mongols introduced new types of bows and arrows, such as the 'Mongol bow' and 'Mongol long arrow', which surpassed traditional Chinese bows and arrows in range and power. In addition, a rocket called the 'fire dragon arrow' appeared in the Yuan Dynasty, posing a significant threat to enemies.



Figure 18 Mongolian crab bow,

Source : Photographed by Xia Zhiyou, 2019

During the Song and Yuan dynasties, bows and arrows saw significant developments and innovations in production technology, materials, types, and tactics. These bows and arrows not only played a crucial role in warfare at that time but also had a profound influence on the production and tactical use of bows and arrows in later generations.

1.7 Bows and Arrows in the Ming and Qing Dynasties

During the Ming and Qing dynasties, bows and arrows played an important role in Chinese history, and their design and manufacturing techniques saw significant advancements.

During the Ming Dynasty, the manufacture of bows and arrows peaked. The bows and arrows of the Ming Dynasty are famous for their high-quality materials and exquisite craftsmanship, and their design pays more attention to the practical combat performance. The Ming Dynasty bow body was usually made of composite materials, covered with ox horns or other materials, making it stronger and more durable. At the same time, the Ming army's bows and arrows also paid more attention to the accuracy of the shooting, using various sights and techniques to enable the shooter to aim more accurately.



Figure 19 century Ming Dynasty small recurve bow,
Source : Luoyang Museum, Photographed by Xia Zhiyou, 2021

During the Qing Dynasty, the development of archery gradually shifted towards the development of archery culture. Archery in the Qing Dynasty was not only a weapon, but also a symbol of culture and an art form. The manufacturing technology of the Qing Dynasty was still exquisite, but more emphasis was placed on the appearance and decoration of the bows and arrows. At the same time, the archery culture of the Qing Dynasty also emphasized the skills and physical fitness of the archers, requiring long-term training and practice to master advanced shooting skills. During the Ming and Qing dynasties, bows and arrows represented one of the peaks of bow and arrow manufacturing technology in Chinese history. Their design, production, and use all reflected the highest level of traditional Chinese weaponry. At the same time, bows and arrows played an important role in Ming and Qing culture and society, exerting a profound influence on the warfare, society, and culture of that time.



Figure 20 Qing bow Luoyang Museum
Source : .Photographed by Xia Zhiyou,2021

6. The Function of Bow and Arrow

6.1. Archery Sacrifice Function

In ancient times, bows and arrows had important ritual functions. In various religious ceremonies, bows and arrows were considered sacred tools that could be used to symbolize sacrifice, prayer, or religious celebration, to commemorate or pray to the gods. For example, in some rituals, bows and arrows could be used to drive away evil spirits or demons to protect the community from harm by evil forces. In addition, archery was also endowed with magical and mystical effects, and later evolved into a sacred social ritual.

In ancient times, sacrificial rituals were also intertwined with the social and political dynamics of the time. For example, fathers and sons would annually select sacrificial candidates through archery, making archery a dominant ideology in society at that time. Those chosen to participate in the sacrifice were highly skilled archers, and those who could hit the target during the selection process would be granted a fiefdom. This method of selecting sacrificial candidates highlighted the elevated social status of archery activities and reinforced the level of social organization.



Figure 21. Qingming Festival archery willow

Source : Baidu web image

6.2. The role of ancient bows and arrows in talent selection

In ancient times, archery played an important role in talent selection. Firstly, archery competitions, known as "shooting ceremonies," were highly standardized, hierarchical, and ethical rituals. They served as an important means for the ruling father and son to control vassals, select talents, and educate the people. Secondly, the "shooting ceremony" was not only a place to evaluate noble character, but also a place to select sages. The Zhou dynasty's "selecting soldiers" assessment system made archery an important pathway to enter formal professions. Shooting even became a standard for measuring whether a person was "noble." To encourage people to excel in archery, rulers also proposed strategies for good archery to the wealthy. Therefore, nobles considered strict archery training as an important study topic, which greatly promoted the development of archery. [Qin Linzheng. (2000). From a culture of war to peace. Foreign social sciences (1), 4.]



Figure 22 The princes and nobles select talents - Brick painting at
Source : Luoyang Ancient Tomb Museum, Photographed by Xia Zhiyou2022

6.3. The Military Function of Archery

In ancient warfare, the bow and arrow was an important long-range weapon with the following military functions:

1. **Defense Balance:** The bow and arrow is a ranged weapon that can effectively attack enemies before they get close, reducing the combat effectiveness of the enemy. At the same time, archers can use terrain and other obstacles to hide and increase their survival rate. This balance of attack and defense makes the bow and arrow one of the most important weapons in ancient warfare.

Psychological deterrence: In ancient warfare, the impact on morale often had a decisive influence on the situation of the war. Archers could shoot arrows at distant enemies, striking a blow to their morale. At the same time, archers could also target enemy commanders or key figures, creating psychological deterrence and affecting their will to fight.

3. **Enemy combat effectiveness depletion:** In ancient warfare, due to limited medical and sanitary conditions, the mortality and recovery rates of wounded soldiers were very low. Therefore, a large amount of damage caused by arrows could quickly deplete the combat effectiveness of the enemy. At the same time, due to the difficulty of aiming arrows, soldiers' psychological qualities and concentration levels were high, so sustained arrow attacks would lead to soldiers' fatigue and panic.

4. **Assisting other weapons:** Archers can not only fight independently, but also cooperate with other weapons. For example, during a cavalry charge, archers can use their arrows to attack enemies from a distance, reducing the enemy's combat effectiveness. At the same time, in a siege battle, archers can use the terrain and buildings to avoid arrows towards enemies in the city, creating favorable conditions for the attacking forces.

Despite its drawbacks such as difficulties, limited range, and high consumption, it still became one of the important weapons in ancient warfare. Due to its characteristics such as attack distance, defensive advantages, and psychological deterrence, it became a powerful weapon in ancient warfare.



Figure 23 Qin Kneeling Shooting Movie "Hero", 2002



Figure 24 The hero of the war uses bows and arrows in the Qin State in 2002.

6.4. Archery Etiquette

The archery etiquette is a traditional etiquette in archery, reflecting the respect, humility, and professionalism of archers. Here are some key points of archery etiquette:

1. Respect the venue: Keep quiet at the archery venue, do not make noise, fight, or use your phone. Do not walk or stand in restricted areas to avoid disturbing others or compromising your own safety.

2. Respect your opponent: During the game, respect your opponent and avoid mocking or taunting. Also, watch your opponent's shots and show respect for their performance after they make a shot.

3. Respect the bow and arrow equipment: The bow and arrow are precise and fragile equipment that should be properly maintained. During archery, keep them clean and safe to avoid damaging the equipment or injuring others.

4. Appropriate attire: Wear appropriate clothing and shoes on the archery range. It is best to wear specialized archery attire that is comfortable and safe. Additionally, shoes should be non-slip and smooth to avoid affecting shooting performance.

5. Queueing: When waiting to shoot, queue up and do not cut in line or rush others. Walk slowly and steadily forward when it's your turn to shoot, and prepare yourself for your position.

6. Correct posture and form: Maintaining the correct posture and form during practice helps improve the accuracy and stability of archery.

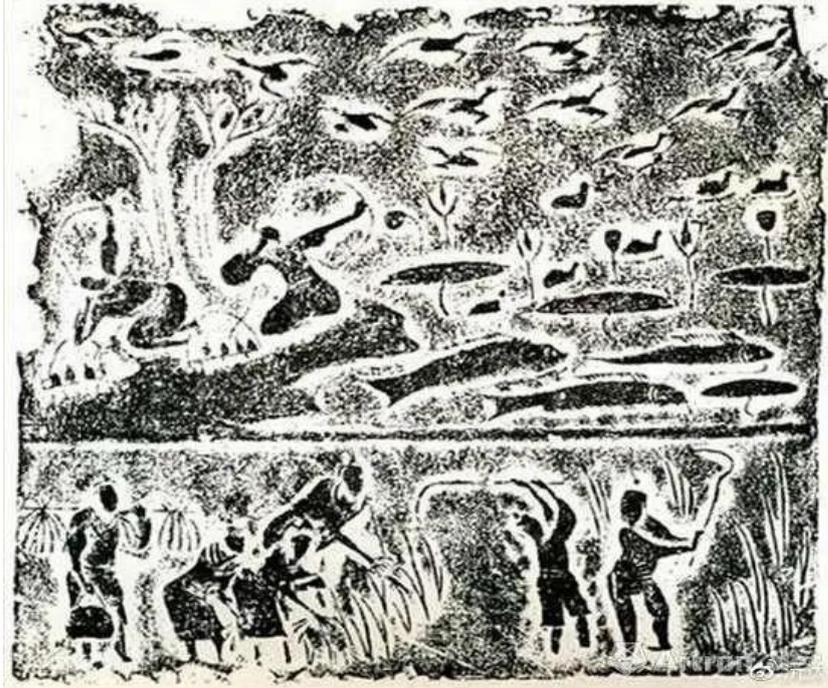


Figure 25 The Etiquette of Archery Brick Painting

Source: In the Luoyang Ancient Tomb Museum, Photographed by Xia Zhiyou2023

6.5. The Entertainment Function of Archery in Ancient Times

The entertainment function of ancient archery art is mainly reflected in the following aspects:

1. Archery Competition: Ancient archery competitions were a form of athletic and entertainment activity that typically required shooters to shoot targets at a certain distance. The rules and formats of the competitions varied, and they had a certain level of competitiveness and entertainment value. At that time, the sons of nobles and generals learned archery from a young age, and archery competitions became a popular form of entertainment.

2. Banquet Etiquette: Archery was also an important ceremonial activity in ancient banquets and alliances. The level of archery skill often represented an individual's status and honor, so demonstrating excellent archery skills at banquets and alliances was also a form of entertainment and social interaction.

3. Folk Games: In addition to formal competitions and ceremonial etiquette, archery was also a very popular folk game in ancient times. For example, in the Tang Dynasty, even maidservants wanted to learn the art of archery, and there were various games such as shooting ducks and shooting powder balls. These games often had a certain entertainment value and fun, which contributed to the widespread dissemination and development of folk archery arts.

In ancient times, archery was not only a military skill, but also an important form of entertainment. Through competitions, rituals, and folk games, it enriched people's cultural life, promoted social interaction, and emotional communication.



Figure 26 Han Dynasty brick painting of pitching pot,
Source: Henan Museum ,Photographed by Xia Zhiyou 2022

6.6. The health benefits of archery

In ancient times, bows and arrows were also believed to have certain medical benefits. Here are some specific descriptions of the medical effects of bows and arrows:

1. Sports: Archery, as a sport, can exercise people's physical health, coordination, and balance. In ancient times, archery was a good way of physical exercise, which helped improve physical health and prevent diseases.

2. Stretch yourself: Stretching during archery can help you stretch yourself and improve joint flexibility. This can help prevent joint stiffness and alleviate fatigue.

3. Breathing exercise: During the archery process, the archer needs to maintain a steady breathing rhythm. This deep breathing helps to enhance lung function and increase the body's oxygen supply.

4. Health benefits: Archery requires archers to concentrate, which can train their willpower and patience. In the process of long-term archery, people can calm down, eliminate distractions, and achieve health benefits.

5. Stress relief: In the midst of tense wars and life, archery, as a recreational activity, can help people relieve stress and relax.

6. Rehabilitation therapy: For injured soldiers or patients, appropriate archery practice can aid in rehabilitation. In ancient times, archery was used in rehabilitation therapy to help patients regain strength and joint function.

In ancient times, bows and arrows were not only weapons and sports equipment, but also played a role in health and medicine. Through archery, people could exercise their bodies, stretch their bones, maintain health, and relieve stress, which was helpful for maintaining physical and mental health. This also indicates the widespread use and importance of bows and arrows in ancient times.

The relationship between shooting bow and shooting carving and archery: In this style, the posture of the body is similar to archery. For example, the body twists to one side, like a preparation position before drawing a bow. The movement of both hands high and high low is also similar to the arm movement of pulling the bow during archery, which emphasizes the stretch of the body and the conduction of strength.

Both require a certain sense of stability and balance in the body. In archery, you need to be sure to ensure the accuracy of the body; the balance and stability of the body through the strength of the legs and the coordination of the body.

Archery requires the strength of the whole body, from the leg, waist, back to the arm, to transfer the power to the bow string to shoot a powerful arrow. "Left and right bow like carving" also emphasizes the coordination of the whole body, from the legs of the ground, to the torsion of the waist, and then to the extension of the arm, the strength smoothly transmitted out.

In archery, you need to concentrate the elastic potential energy of the bow string into the kinetic energy of the arrow. You also need to concentrate the strength, reflecting a kind of tension and explosive force.(graph 27)



Figure 27 The practice of Ba Duan Jin Qigong for health Traditional health qigong 2017 version

7. Research on the Craft of Making Bows and Arrows

Bows and arrows are ancient weapons that involve knowledge and skills from many fields in their manufacturing process. Here are some research directions on the production process of bow and arrow products:

1. Material selection and processing: The production of bows and arrows requires the selection of suitable materials, including wood, bamboo, composite materials, etc. For different materials, corresponding processing is required, such as drying, painting, stringing, etc.

2. Design and Structure: The design and structure of the arrowhead are crucial, taking into account factors such as strength, elasticity, and stability. Designers need to calculate and design based on actual conditions to ensure the stability and accuracy of the bow and arrowhead.

3. Manufacturing: After the design and construction of the bow and arrow are completed, they need to be manufactured. This may involve using saws, planers, drills to process materials, as well as using glue, nails, and other materials for connection and fixation.

4. Precise control: Precise control of the bow and arrow is crucial to ensure that the arrow released hits the target accurately. This may require the use of mechanical or electronic devices to assist with precise control.

5. Testing and optimization: After production is completed, the bow and arrows need to be tested to evaluate their performance and reliability. Based on the test results, adjustments and optimizations can be made to the bow and arrows to improve their quality and effectiveness.

6. Cultural Inheritance and Innovation: Bows and arrows are not only weapons, but also a form of culture and art. Studying the history, tradition, and cultural background of bows and arrows, exploring how to integrate modern technology and ideas into the traditional process of bow and arrow making, is of great guiding significance.

It is important to note that the bow and arrow manufacturing process involves dangerous tools and operations, and safety regulations must be strictly followed and adhered to by professionals. If you are interested in the process of making bows and arrows, it is recommended that you first learn relevant safety knowledge and skills, and practice under the guidance of professionals.



CHAPTER III

Study and analyze archery techniques, and collect data for the design of study manuals

The main content of this chapter is to describe the development status of archery in the research area, the technical level, people's awareness, how to increase students' physical quality and archery level for exercise, and prepare for students in the next step.

3.1 Research on archery culture of Luoyang youth

3.1.1 The current situation of shooting art in the region

As a traditional sport, archery has the following characteristics in this region:

1) Steady growth in the number of participants: With people's pursuit of a healthy lifestyle and love for traditional culture, the popularity of archery sports in the local area is gradually increasing. The number of participants in archery sports is increasing year by year, and both professional athletes and amateur athletes are actively involved in this sport.

2) Increase in Activities: In order to promote the sport of archery, the region has started organizing archery competitions of various scales and levels. These activities have not only attracted top domestic archers, but also many amateur enthusiasts actively participating. The increase in activities has provided a good platform for the promotion of archery in the local area.

3) Accelerate the construction of training bases: In order to improve the level of archery skills, the local area has strengthened the construction of archery training bases. These training bases provide professional learning and training facilities for archery enthusiasts, attracting a large number of students to learn.

4) Increase social awareness: With the popularization of shooting sports and the increase of various activities, the social awareness of shooting skills is gradually increasing. More and more people realize that shooting art is not only a way of sports, but also a way of life. The attention and support for shooting art in society are also increasing.

5) Continuous improvement in technical level: In the development of archery in the region, the continuous improvement in technical level is a significant feature. The improvement of archery equipment and the enhancement of athletes' and enthusiasts' technical skills indicate that the region's archery technical level is advancing towards the world's advanced level.

The current situation of archery in the region shows a strong development trend. With the increasing attention and support for the arts, we have reason to believe that the artistic development in this region will become more prosperous.



Figure 28 Archery course of Luoyang No.8 Middle School

Source: Photographed by Xia Zhiyou 2021

3.1.2 Challenges encountered by archery culture

The difficulties faced by contemporary shooting art culture mainly include the following aspects:

1) **Low recognition and acceptance:** Due to historical and contemporary communication reasons, archery culture has not been well understood and accepted by the general public. Many people know little about it, and there are even misunderstandings. Therefore, archery culture faces many difficulties in communication and development.

2) **Lack of professional talents:** Shooting art is a traditional skill that requires high technical proficiency and can only be mastered through long-term professional training and practice. Currently, the quantity and quality of talents are insufficient to meet the needs of society, posing a threat to the inheritance and development of shooting culture.

3) **Limitations of venues and facilities:** Shooting skills require specific venues and facilities for training and competitions, which often require significant investment. Due to limitations in funding and resources, many archery venues and facilities are inadequate, lacking necessary safety measures, which restricts the development of archery activities.

4) **Safety risks:** Archery itself carries certain safety risks. Improper operation during training or competition can easily lead to accidents. Therefore, safety risks are the main obstacles to the development of archery culture.

Crisis of Cultural Identity: Under the influence of globalization and modernization, many young people are gradually losing their sense of identity with their traditional ethnic culture, and they lack appreciation for traditional cultural skills such as archery.

In order to promote the inheritance and development of archery culture, it is necessary to increase public awareness and acceptance of archery, strengthen training for professionals, improve the construction of venues and facilities, reduce safety risks, enhance cultural confidence, and actively respond to the pressure of international competition. The implementation of these measures can promote the development of archery culture in contemporary society.

3.1.3 Research on archery culture of Luoyang youth

Archery is an important part of traditional Chinese culture, with a deep historical background and rich cultural connotations. In recent years, with the increasing attention and promotion of traditional culture by the country, archery culture has gradually gained attention and recognition in society. In order to gain a deeper understanding of the development of archery culture in the Luoyang area, we conducted this survey.



Figure 29 Archery course at Luoyang Renaissance School,
Source :Photographed by Xia Zhiyou 2018

3.1.4 Research Methods

The survey was conducted through questionnaires and interviews. The questionnaires mainly targeted college students in Luoyang to understand their awareness and interest in archery culture. The interviews invited coaches and students from the Luoyang Archery Club, as well as experts and scholars in related fields, to delve into the current development and future trends of archery culture in Luoyang.

Survey Results

1. In terms of cognitive level, we found that most of the respondents have a certain level of understanding of archery culture, but the specific level of understanding varies. Among them, students have a relatively high awareness of archery culture, while community residents have a relatively low awareness. At the same time, the majority of respondents expressed interest in archery culture and believed that archery culture has high historical and cultural value.

From the interview, I learned that there are limited archery clubs in Luoyang city, but the number of people participating in archery competitions is increasing year by year. These participants are mainly students and young people, who get to know and understand archery culture through joining archery clubs and participating in archery competitions. In addition, some community residents come into contact with archery activities through fitness centers and other places, gradually developing an interest in archery culture.

development bottleneck

In this interview, experts, scholars and coaches generally believe that the development of shooting art and culture in Luoyang is still facing some bottlenecks. We interviewed Guo Shaopan, coach of Luoyang archery hall, Li Bo, curator of Guanlin Town, Luolong District, Luoyang city, and other five archery coaches. In this interview, experts, scholars, and coaches generally believe that the development of shooting art and culture in the Luoyang area still faces some bottlenecks. The main issues include a lack of professional coaches and on-site facilities. Currently, there are few archery venues in Luoyang, mainly concentrated in universities and some clubs. At the same time, the number of professional coaches is relatively small, which to some extent limits the promotion and development of shooting art and culture.

(1) Raise awareness: By organizing archery cultural lectures, exhibitions, and other activities, promote and publicize the art of archery culture, and increase public awareness and interest in the art of archery culture.

(2) Strengthen infrastructure construction: Increase investment in the construction of archery venues to provide more practice and competition venues for archery enthusiasts. At the same time, enhance the training and introduction of professional coaches to improve the teaching level of archery sports.

(3) Encouraging social participation: By providing policy guidance and financial support, encouraging more social forces to participate in the promotion and development of shooting culture, and forming a good situation of government, enterprises, and social participation.

(4) Carry out international exchanges: Strengthen communication and cooperation with domestic and foreign archery organizations, introduce advanced training methods and concepts, and improve the shooting skills level of Luoyang.

(5) Expand application areas: Combine art and culture with tourism, education, and other fields to develop more innovative and practical projects, promoting the diversified development of art and culture.

3.2 Course Design Preparation

3.2.1 Understanding students' physical fitness

In today's society, students are facing increasing academic pressure, leading to a decline in their physical fitness due to long hours of study and work. In order to improve students' physical fitness, the Chinese government and education authorities attach great importance to this issue and have formulated a series of relevant policies. Data is derived from the national physical fitness standards test scores for college students. This article will explore students' understanding of physical fitness from the following aspects. Students' physical fitness is also declining, and various aspects of students' physical fitness are summarized as: visual, physical fitness, psychological quality, etc., for analysis.

1) Vision deterioration: The learning pressure and long-term exposure to electronic devices have led to a general decline in the vision of primary and secondary school students, with the myopia rate of Chinese students increasing year by year.

2) Decline in physical fitness: Due to lack of exercise, students' physical fitness is generally poor, manifested in endurance, strength, speed, especially reflected in the 800-meter and 1000-meter middle-distance running events.

3) Psychological stress: Academic pressure and study stress can reduce students' psychological endurance, leading to anxiety, depression, and other psychological issues.

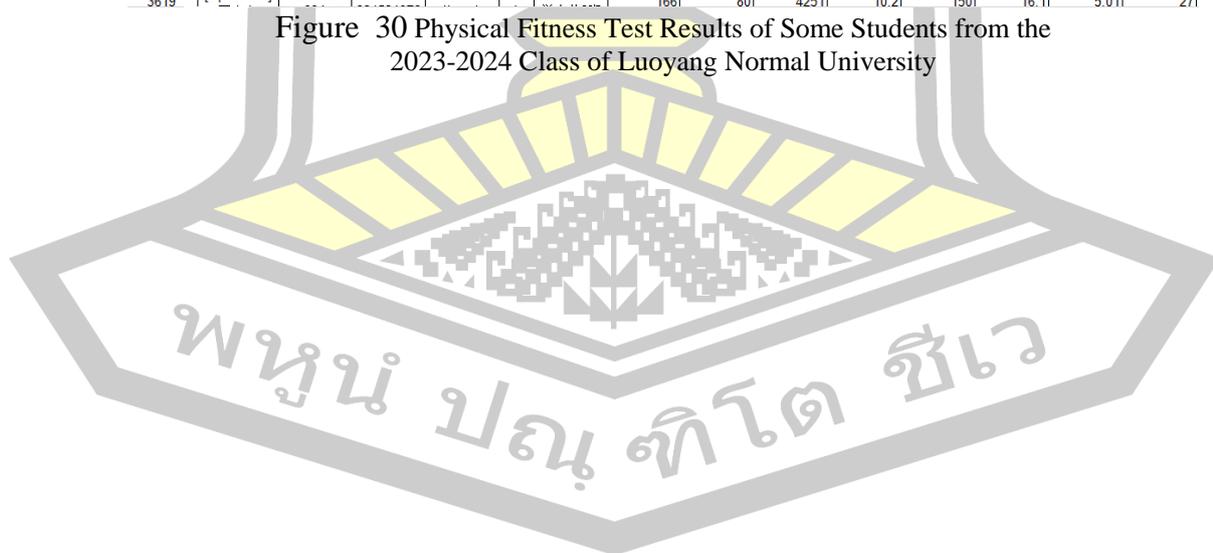
4) Irregular diet: Some students have an unreasonable diet structure, cannot get up in the morning, skip breakfast, and consume unbalanced meals, leading to a decline in physical fitness.

In the results of Figure 30 and Figure 31, the two test results of the National Physical Health Standard of Luoyang Normal University can be seen that the differences in physical quality of college students are extremely unbalanced in terms of explosive power, endurance and the most basic physical skills.

洛阳师范学院2024年《国家学生体质健康标准》原始成绩登记表（2023级）

序号	任课教师	上课班级代码	学号	姓名	性别	行政班级	身高 (cm)	体重 (kg)	肺活量 (ml)	50米 (s)	立定跳远 (cm)	坐位体前屈 (cm)	800/1000米	仰卧起坐/引体向上
3602	[wp125004] 夏志青	180002-094	231584045	龚瑞莹	女	2023级会计学专业2班	170	60	3404	10.1	193	22.9	4.11	35
3604	[wp125004] 夏志青	180002-094	231584047	李嘉欣	女	2023级会计学专业2班	168	67	3865	10.1	160	14	4.51	27
3605	[wp125004] 夏志青	180002-094	231584049	李昕俐	女	2023级会计学专业2班	156	50	2983	10.2	155	25.4	4.03	30
3606	[wp125004] 夏志青	180002-094	231584051	林瑜晗	女	2023级会计学专业2班	159	51	3104	9.6	162	14.5	4.42	31
3607	[wp125004] 夏志青	180002-094	231584052	林王玉	女	2023级会计学专业2班	158	54	3424	10.6	140	10.2	4.28	30
3608	[wp125004] 夏志青	180002-094	231584054	刘书弘	女	2023级会计学专业2班	158	52	2604	8.7	190	16.9	3.46	30
3609	[wp125004] 夏志青	180002-094	231584055	刘滢霏	女	2023级会计学专业2班	171	60	3253	10.5	165	20.1	4.06	30
3610	[wp125004] 夏志青	180002-094	231584056	刘素素	女	2023级会计学专业2班	158	54	3263	8.9	170	21.2	3.44	37
3611	[wp125004] 夏志青	180002-094	231584058	牛文欣	女	2023级会计学专业2班	163	58	3724	10.2	150	20.7	3.48	29
3612	[wp125004] 夏志青	180002-094	231584060	田俊蕊	女	2023级会计学专业2班	150	53	3684	10.7	140	17.3	4.15	30
3613	[wp125004] 夏志青	180002-094	231584063	王思文	女	2023级会计学专业2班	160	53	3258	11.2	155	16.2	5.01	27
3615	[wp125004] 夏志青	180002-094	231584069	袁佳蕊	女	2023级会计学专业2班	158	52	2745	11.2	150	18.8	4.23	28
3616	[wp125004] 夏志青	180002-094	231584073	张志红	女	2023级会计学专业2班	164	60	3274	9	170	10.7	4.02	45
3617	[wp125004] 夏志青	180002-094	231584074	赵艺丹	女	2023级会计学专业2班	161	48	3973	9	181	16.4	3.5	45
3618	[wp125004] 夏志青	180002-094	231584075	赵子妍	女	2023级会计学专业2班	158	65	4083	9.1	162	18.6	4.16	40
3619	[wp125004]	180002-				2023级会计	166	80	4251	10.2	150	16.1	5.01	27

Figure 30 Physical Fitness Test Results of Some Students from the 2023-2024 Class of Luoyang Normal University



洛阳师范学院2024年《国家学生体质健康标准》原始成绩登记表（2023级）

序号	任课教师	上课班级代码	学号	姓名	性别	行政班级	身高 (cm)	体重(kg)	肺活量 (ml)	50米(s)	立定跳远 (cm)	坐位体前屈 (cm)	800/1000米	仰卧起坐/ 引体向上
5143	[wp125004] 夏志有	180002- 136	231164112	邢泽铭	男	2023级软件 工程3班	186	78	4165	7.2	265	20	3.52	8
5144	[wp125004] 夏志有	180002- 136	231164113	宋威旺	男	2023级软件 工程3班	163	55	3681	7.6	225	23	3.34	11
5145	[wp125004] 夏志有	180002- 136	231164114	李沈翼	男	2023级软件 工程3班	181	90	5597	7.5	235	6	4.19	6
5146	[wp125004] 夏志有	180002- 136	231164116	赵浩磊	男	2023级软件 工程3班	173	62	3819	7.1	225	20	4.45	9
5147	[wp125004] 夏志有	180002- 136	231164118	高孟涵	男	2023级软件 工程3班	183	71	5695	7.1	260	13	3.52	11
5148	[wp125004] 夏志有	180002- 136	231164119	王子马龙	男	2023级软件 工程3班	177	105	5542	7.6	215	8	5.29	4
5149	[wp125004] 夏志有	180002- 136	231164120	王家兴	男	2023级软件 工程3班	170	53	3454	7.5	230	17	5.29	6
5150	[wp125004] 夏志有	180002- 136	231164121	石博文	男	2023级软件 工程3班	175	60	3892	7.2	245	17	4.07	5
5151	[wp125004] 夏志有	180002- 136	231164123	任毓坤	男	2023级软件 工程3班	177	83	4545	7.7	225	18	3.54	3
5152	[wp125004] 夏志有	180002- 136	231164125	张勇耀	男	2023级软件 工程3班	175	65	4906	6.8	275	15	4.06	25
5153	[wp125004] 夏志有	180002- 136	231164126	赵博函	男	2023级软件 工程3班	182	68	5358	8.2	245	15	4.41	5
5154	[wp125004] 夏志有	180002- 136	231164127	殷吉祥	男	2023级软件 工程3班	172	65	3574	8.2	230	10	4.52	5
5155	[wp125004] 夏志有	180002- 136	231164129	刘治辉	男	2023级软件 工程3班	173	70	4381	8.3	235	21	4.4	9
5156	[wp125004] 夏志有	180002- 136	231164130	徐谦	男	2023级软件 工程3班	182	85	4586	8.3	220	9	5.1	3
5545	[wp125004] 夏志有	180002- 148	230334042	王雨馨	女	2023级思想 政治教育专 业三班	162	50	3600	8.7	180	24.9	4.02	32

Figure 31 Physical Fitness Test Results of Some Students from the 2023-2024 Class of Luoyang Normal University

3.2.2 Measures to improve students' physical fitness

1) Increase physical exercise time: Provide appropriate exercise time for students in this class to encourage them to participate in various sports activities and improve their physical fitness.

2) Improve teaching methods in physical education: Use lively, interesting, and challenging physical education courses in the classroom teaching process to stimulate students' interest in sports.

3) Family support: Communicate with students' parents in language, pay attention to children's physical fitness, encourage children to participate in physical exercise, and create a good family sports atmosphere.

4) Nutritional balance: Properly balance the diet to ensure students intake sufficient nutrients and improve physical fitness.

5) Reduce academic burden: Arrange study time reasonably, reduce the pressure of entrance examination, and allow students to have more time for physical exercise.

Improving students' physical fitness requires joint efforts from schools, families, and society. Measures such as increasing physical exercise, improving physical education teaching, family support, balanced diet, and reducing academic burden have significantly enhanced students' physical fitness.

Can help us better master various skills and improve.



Figure 32 Yang Wenjin is from Luoyang Normal University,
Source :Photographed by Xia Zhiyou 2023

3.2.3 Scientific and targeted training methods

Improve our work efficiency and productivity. This training method is based on scientific theories and experiences. By analyzing individuals' abilities and needs, we can customize the most suitable training plan to achieve our goals more effectively.

Compared to traditional training methods, scientific and targeted training methods pay more attention to individual differences and personalized needs. Developing a series of personalized training plans is not only based on each person's unique characteristics and requirements, but also a systematic training approach. These programs typically include specific training goals, training duration, training intensity, training content, etc., to ensure maximum training effectiveness.

In addition to focusing on individual differences, scientific and targeted training methods also emphasize the specificity and effectiveness of training. They analyze individuals' abilities and needs, identify areas for improvement, and then develop targeted training plans to help individuals quickly enhance their skills. At the same time, this training method also emphasizes the effectiveness of training, continuously providing feedback and making adjustments to ensure the effectiveness and feasibility of the training plan.

The scientific targeted training method is an efficient, personalized, and targeted training method that can help us better master various skills, improve our work efficiency, and productivity. In future learning and work, we can try using this

training method to customize a training plan that best suits our needs and abilities, in order to better achieve personal and career development goals.

When exercising core strength, we need to pay attention to the following points:

1. Maintain the correct posture during long-distance running and core strength training to avoid excessive exertion or twisting of the body.

When practicing waist, abdomen, and upper limb strength, you should control your breathing and try to maintain deep breathing as much as possible during the exercise.

During the practice, gradually increase the intensity and duration of exercise to avoid excessive fatigue and injury.

By continuously exercising core strength, students can improve their body stability and balance, enhance athletic performance, and prevent injuries such as accidental falls in daily life.



Figure 33 Core Strength Training for Female Students of Luoyang Normal University,

Source :Photographed by Xia Zhiyou 2024,





Figure 34 Core Strength Training for Female Students of Luoyang Normal University,
Source :Photographed by Xia Zhiyou Summer 2024,



Figure 35 Core Strength Training for Male Students at Luoyang Normal University,
Source :Photographed by Xia Zhiyou 2024,

3.3 Arm Strength

The strength of the arms is essential in our daily activities. Calculating and exercising arm strength is particularly important.

The strength of the arms mainly includes the muscles of the forearms, upper arms, and shoulders. For these parts, we can choose various exercise methods. We can exercise the forearms through wrist curls and lateral raises, and the upper arms and shoulders through bicep curls, pull-ups, and shoulder presses. During exercise, we need to pay attention to standardizing the movements, avoid injuries, and gradually increase the training intensity to improve arm strength.

It requires continuous training and patience. Through scientific training methods, combined with proper diet and rest, we can gradually improve the strength of our arms, providing better support for daily life and sports activities. At the same time, we also need to be careful not to overdo it.

4. The relationship between physical training and archery

Physical training is an important part of archery athletes to improve their competitive level. By enhancing muscle strength, improving cardiopulmonary function and improving physical coordination, athletes can better control archery movements, thus improving the accuracy and stability of shooting. Enhancing upper limb strength improves the stability of the drawing bow, while strengthening the core muscles helps to maintain the balance and stability of the body, which is crucial for archery, which requires highly focused and precise control. Physical training also includes training in flexibility and agility, which can help athletes quickly adjust their posture and respond to emergencies during the competition. Therefore, there is a close relationship between physical training and archery, which is an indispensable training content for archers.

To achieve the best training results, the physical training program of the archers usually needs a personalized design, taking into account the specific circumstances and needs of each athlete. This includes assessing the athlete's current fitness level, identifying the improvement goals, and developing the training strategies accordingly. The training program should include a variety of training methods, such as strength, endurance, speed and speed training and flexibility, to improve the physical fitness of the athletes. At the same time, the intensity and frequency of training should also be reasonably arranged according to the athletes' resilience and competition schedule to avoid the risk of overtraining and injury. In addition, the cultivation of psychological quality is also a part of physical training that can not be ignored, because archery competition often has a very high requirement on the psychological state of athletes. By simulating the match environment and psychological counseling, athletes can learn how to stay calm and focused under stress, which is also crucial to improve match performance.

CHAPTER VI

Teaching of illustration according to the archery atlas

This chapter is mainly aimed at the design and production of an archery manual, using illustrations for teenagers to learn in the learning process, which contains three kinds of introduction, action pictures, for each movement has the corresponding text notes, convenient for students to use according to the classroom learning and practice.

4.1 The Connotation of Shooting Art and Moral Education

Archery, as an important part of traditional Chinese culture, is not only a skill but also a reflection of its cultural and moral qualities. In the practice of archery, we can not only regulate our body and mind, improve our archery skills, but also cultivate our moral qualities and ethical cultivation.

The art of archery emphasizes inner peace and focus. When shooting arrows, archers need to let go of all distractions and concentrate on each shot. This focus and tranquility is exactly the inner peace we seek in our daily lives. By cultivating the art of archery, we can learn to find a quiet world in the midst of a busy life, allowing our minds to relax and nourish completely.

Archery also emphasizes respect and adherence to etiquette. During the process of archery, the archer needs to follow a series of etiquette norms, such as saluting the teacher and saluting the opponent. These etiquette norms not only reflect the archer's humility and respect, but also cultivate the archer's humility and tolerance. Through the practice of archery, we can learn to respect others, understand others, and thus be more harmonious in interpersonal communication.

Archery is a test of perseverance and patience. When practicing archery, archers need to adjust their posture, strength, angle, and other factors repeatedly to achieve the best shooting effect. This requires archers to have strong perseverance and patience, constantly overcome difficulties, and continuously improve themselves. By using shooting skills, we can cultivate our perseverance and patience, making ourselves more determined and brave when facing difficulties and challenges.[Wen Guiyu. (2016). The Olympic road for the Brazilian native archers. Science Grand View Garden (12), 3]Archery is not only a skill, but also a means of moral education. Through practicing archery, we can cultivate our concentration, humility, perseverance, and patience, making ourselves more stable and steadfast on the path of life. Therefore, we should actively promote the art and culture, so that more people can understand and participate in artistic practices, jointly promoting the development of the art industry. At the same time, we should also integrate the concept of archery art into our daily lives, making it a part of our lives, adding more color and value to our lives.

Archery culture is not just about teaching archery skills, but also about inheriting and promoting a profound cultural connotation. In this session, we not only explain how to hold a bow and aim, but also focus on introducing the historical background, philosophical thoughts, and moral ethics of archery.

From a historical perspective, archery has been passed down in China for thousands of years. From ancient hunting tools, to military skills in the Spring and Autumn Period and the Warring States Period, to the entertainment of literati in the Tang and Song dynasties, archery has always run through the history of the Chinese nation. We guide students to understand these historical backgrounds, feel the cultural

connotations carried by archery in different historical periods, and thus have a deeper understanding of the unique charm of archery culture.

In terms of philosophical thought, archery is endowed with the meaning of "introspection" and "self-cultivation". Through archery, people can exercise their will, temper their character, and achieve harmony between body and mind. We guide students to experience the concentration, calmness, and patience in the process of archery, helping them understand that these qualities are not only needed in archery, but also indispensable in daily life.

We also emphasize the introduction of the moral ethics of archery. Archery is not just a skill, but also a form of etiquette. During the process of archery, we need to respect our opponents, respect ourselves, respect the audience, abide by the rules of the game, and demonstrate good sportsmanship. We emphasize the importance of these moral ethics, hoping that students can continuously improve their moral qualities in the process of learning archery.

In addition to theoretical teaching, we also organize practical exercises for students. On the archery range, students can experience the fun and challenges of archery firsthand, and feel the unique charm of archery culture. At the same time, we invite professional coaches to provide guidance and feedback, helping students correct mistakes and improve their skills.

4.2 Archery culture and types of archery rituals

The archery cultural education section aims to deepen students' understanding of the connotation and value of archery culture by teaching archery skills, introducing historical background, philosophical thoughts, and ethical principles. We hope to inherit and promote the excellent traditional Chinese culture through this approach, cultivating students' comprehensive qualities and moral qualities.

Archery originated from the archery ritual in the Shang and Zhou dynasties. With the development of society, during the Spring and Autumn period, Confucius gradually separated archery ritual as one of the six arts for gentlemen, which include ritual, music, archery, charioteering, mathematics, and calligraphy. This study briefly introduces the cultural aspects of 'archery', including the extension of modesty and courtesy, and the personal integrity of the 'drinking ritual'[Song Ge. (2009). The archery rites, their moral implication and contemporary values shown in the Book of Songs. (Doctoral dissertation, Shanxi University).].

Extend the archery:

Yanshe, which means 'let Zilu take a bow and arrow for extended shooting.' Mr. Yang Tianyu explained, 'Zilu takes a bow and arrow to shoot out, that is the shooter (the one who shoots for the master), extended, advance, aiming at the audience who wants to shoot.' Kong Yingda commented, 'At this time, asking Zilu to take the bow and arrow out of the garden to shoot forward, aiming to hit. Zilu's extended shooting means that Zilu is the shooter. The person who shoots the arrow clearly shows that he is shooting arrows.' 'Knowing that Zilu is the shooter, he says 'the shooter takes off his robe and decides to take the bow and arrow on the west steps, then asks me to shoot.' Now Zilu takes the bow and arrow to shoot extended, so it is known that he is the shooter. After the shooter and the marshal bid farewell, the shooter speaks first, and the etiquette of Zilu's extended shooting is established when the marshal stands. There is only one main shooter. Therefore, Zilu shoots extended

alone... But Zilu's words are completely different from others. Zilu takes people out of the garden to let many people enter, and goes to the inner tube of the public to eliminate evil, so that bad things cannot happen, as an excuse for magnifying. The archer enters the garden, just as Zilu said, 'The generals of the defeated army, the great officials of the fallen country, and those who come after others' do not enter. Those who do not do so all enter. 'Probably half went, half came in.' Kong Yingda commented, 'The three things Zilu mentioned are all the deeds of evil people. Observers never half agree with such behavior, only see him as afraid of his righteousness, so people have gone halfway.'

Drinking gift:

Yang Tianyu explained, "According to the etiquette of archery, one should first perform the wine ritual." Kong Yingda explained this in his commentary on the 'Book of Songs, Da Ya, Xing Wei'[Zhao Kuifu. (2012). After chaos ascended the throne, friendly minister —— talked about the background and theme of "Ming". Classical Literature knowledge (5), 5.]In the story of shooting in the garden, it is said: "The etiquette of shooting before drinking was established by the officials in charge, who were responsible for making the host drink." "The Book of Shooting" also says: 'In ancient times, when the emperor and the feudal lords went shooting, they had to follow the ritual of drinking together, and when the local officials went shooting, they had to follow the local drinking etiquette.' Below it says that Confucius' shooting activities, the second Confucius drank before shooting as part of the local drinking etiquette." Establishing a Sima, that is, "shooting to establish a Sima." Mr. Yang Tianyu explained: "After the drinking etiquette with the host is over and before the ritual of reward begins, the shooting ritual starts, so the host orders one of his subordinates to act as a Sima in the main ceremony." Kong Yingda's commentary says: "As for changing the official in charge to Sima in the shooting ritual, it is said that shooting to establish a Sima. Sima is the starting point for the competition." Please shoot, that is, "let Zilu take a bow and arrow out to shoot." Mr. Yang Tianyu explained: "Zilu takes a bow and arrow to shoot out, that is the shooter (the one who shoots for the host), Yan, advance, aiming at the audience who want to shoot." Kong Yingda's commentary says: "At this time, asking Zilu to take a bow and arrow out of the garden to shoot forward, is to aim to hit. Zilu shoots forward, so Zilu is the shooter. The person who pulls the bow and shoots the arrow is clearly the one who shoots the arrow." "Knowing that Zilu is the shooter, he said in the local shooting, 'The shooter is ready to take the bow and arrow on the west steps, and then asked me to shoot.' Now Zilu takes the bow and arrow to shoot forward, so it is known that he is the shooter. After bidding farewell to the shooter and Sima, the first is to say it himself, the second is the ritual of shooting forward, and it is time to establish the Sima. There is only one main shooter.[Tang Minggu. (2018). Kong Yingda relieved the characteristics of "University". The Chuanshan Academic Journal (5), 6.] So Zilu shoots forward alone... But Zilu's words are completely different from those of others²Zilu goes out of the garden to invite people in, and many people enter, but the bad ones are not allowed in, as an excuse to enhance the grandeur." When the archers enter the garden, it is like what Zilu said: "The leaders of the defeated army, the officials of the fallen state, and those who come after others do not enter. Those who do not do so, all enter." "Probably half go, half come in." Kong Yingda's commentary

says: "The three things Zilu mentioned are all the actions of bad people. Observers never half agree with this behavior, they only see him as afraid of his righteousness, so people leave halfway." Compared to shooting, the ritual of this festival is not mentioned in the "Book of Shooting", but from the previous shooting forward and the following reward, it can be understood without saying.

4.3 Types of wedding gifts

During the Spring and Autumn Period (770-476 BC), there were approximately 19 types of ceremonial archery, each representing different social classes, social scenarios, and cultural connotations[Yuan Junjie. (2010). Two weeks of archery research. (Doctoral dissertation, Henan University)..]

(1) Witch shooting, namely witchcraft shooting ceremony, is a ritual of shooting arrows with the means of witchcraft to bless or harm others and idolatry. Witchcraft shooting is not only one of the origins of ancient Chinese archery rituals, but also a type of archery ritual in ancient China. It lasted for thousands of years from the time of the Five Emperors to the Warring States period. In ancient times, the Yellow Emperor made a bow from the skin of Chiyou, and shot it at the ghost of pestilence with peach bows and thorn arrows. Emperor Shun used archery to judge the good and evil of Hou Ming, Yi shot down the ten suns, oracle bones recorded the shooting of the emperor, historical records mentioned Wu Yi shooting at the sky, King Wu personally killed the King of Shang at the shooting range, Taigong Wang shot at the portrait of Duke Ding, Chang Hong set up a shooting that cannot be missed, King Song Yan shot at the sky and the statues of the vassals, etc. These are all examples of such shooting rituals. Later, this witchcraft shooting ritual was integrated with the archery rituals and pitching rituals recorded in the Eastern Zhou ritual books, and were absorbed into the sacrificial rituals and blessings as part of the archery and pitching rituals, becoming a ceremony within the two rituals.

(2)The shooting of leftover game, also known as "yusha", is a shooting competition held between the hunting in the four seasons and the sacrificial ceremonies or after the sacrificial ceremonies to determine the order of the sacrificial participants and the distribution of the sacrificial animals. This shooting ritual appeared early, and in the Zhou Dynasty, it was stipulated that in the four seasons of hunting: the emperor takes thirty, "the rest practice shooting in the shooting palace with the gentlemen and the masses", or "after the sacrifice, take the leftover game to the marsh, then the ministers and officials shoot together". Those who hit the target in the shooting competition cannot take the game even if they hit it, while those who miss the target can take the game even if they miss, valuing righteousness over bravery. Since the shooting of leftover game involves yielding and giving way, it is also considered a ritual shooting.[Chen Zhixue. (1988). Wu arts in the Tang Dynasty. Journal of Sichuan University: Philosophy and Social Sciences Edition (4), 6.]

(3)Shooting sacrifice, also known as shooting prison, is a ritual of shooting or killing held by the Zhou emperor or the feudal lord before the sacrifice to indicate that they personally obtain fresh sacrificial offerings or personally kill sacrificial animals.

(4) Shooting fish, also known as arrow fishing or fishing with arrows, is a water-based shooting ritual originating from fishing and hunting in water. It later became a ritual for offering fish to ancestors, similar to the sacrificial shooting of animals. Shooting fish, presenting fish, observing fish, and offering fish are the sequential ritual contents. This ritual had already formed and matured during the Yin

and Shang dynasties, was very popular during the Western Zhou dynasty, and even had officials in charge of shooting fish. It continued to be practiced until the Spring and Autumn period. The shooting fish ritual is a type of shooting ritual and water-based shooting ritual. In the past, there was controversy in the academic community about whether the shooting fish ritual existed in ancient China. In recent years, with the discovery of new materials such as the bronze zun vessel inscriptions, more scholars holding affirmative views have increased, and this issue seems to be able to be definitively resolved.

(5) The Da She, also known as the Great Archery, is a ritual in which the Zhou dynasty emperor or feudal lords gather their subordinates to participate in archery competitions. The Da She takes place in the outskirts. During the Western Zhou period, it was a ceremony specifically held for archery competitions presided over or participated in by the Zhou emperor himself. In the Warring States period, it evolved into archery ceremonies held by feudal lords and officials. Since the archery competition held by the emperor is for the feudal lords, it is also referred to as "She Hou" in historical texts, which is the origin of the name of the archery target "She Hou".

(6) Bin she, also known as xiang she, refers to the shooting of arrows when a vassal visits or when vassal states visit each other. It is a ritual where the Zhou emperor or the ruler of a vassal state shoots arrows with the visiting guests, as a way of entertaining and welcoming them. Bin she is conducted during court audiences.

(7) Yan She, also known as the shooting at banquets, is a ritual in ancient China where the king of Zhou or feudal lords entertained their subjects, guests, nobles, and scholars by shooting arrows during banquets. It was a form of entertainment and ritual conducted during banquets to show hospitality and respect to the guests. Yan She was performed in a reclining position.

(8) The rural archery competition, also known as the village archery contest, is a shooting ritual held in the spring and autumn seasons by the county magistrate or the local nobles after passing the imperial examination, or by the lower-ranking nobles such as the rural gentlemen and scholars during the village drinking ceremony.

(9) The 'Jiaoshe' is an ancient ritual of archery competition held by the emperor or feudal lords. It is named after the location where the ritual takes place, which is the Jiaoxue Archery Palace. The 'Jiaoshe' is also known as a ceremonial archery event because it involves singing poems about the shots made by the emperor or feudal lords, making it a ritualistic form of archery competition.

(10) The ritual archery, also known as archery with ritual music, is a ceremonial archery event held for the practice of rituals, with the emphasis on practicing rituals rather than hitting the target. Because "ritual archery does not focus on hitting the target", it is contrasted with "target archery" and "military archery", also known as "ritual archery" and "civil archery". It includes various types of ceremonial archery such as suburban archery, grand archery, guest archery, banquet archery, and village archery, so ritual archery is actually a general term for various ceremonial archery events. However, the second round of shooting in grand archery, banquet archery, and village archery, known as "not piercing and not releasing", is target archery, showing that ritual archery also has elements of target archery, but with a focus on ritual and music.

(11) The shooting of hou was a kind of archery competition among the nobles in the Zhou Dynasty, which evolved from shooting at surplus animals, shooting at animal skins, and ritualistic shooting. Hou originally referred to the substitute target for shooting, which was initially shooting at real animals or "stretching animal skins and shooting at them", or shooting at a portrait of a hou. Later, animal skins were used as hou, or animal skins were placed in the center, or animal skins were decorated on the sides and used as the target, known as pi hou, for grand shooting. Alternatively, cloth was used as hou, painted with colorful decorations, known as wucai hou, for ceremonial shooting. Or a portrait of an animal head was painted on the front, known as shou hou, for festive shooting. Therefore, shooting hou is actually a general term for various shooting rituals such as grand shooting, ceremonial shooting, and festive shooting, and shooting hou has evolved from a specific term for a certain shooting ritual to a collective term for various ceremonial shootings.

(12) Xishi is the practice of archery in the Zhou Dynasty, which was a training for noble families and a ritual held by the Zhou monarch to select talents. Here, Xishi means to practice or learn repeatedly, with the implication of reviewing the old to understand the new. As archery is a highly technical skill, it requires regular practice.

(13) Xueshe, which refers to the noble children in the Zhou Dynasty studying archery in school. The difference between Xueshe and Xishe is that Xueshe is the process of learning archery knowledge, while Xishe is the practice of the archery knowledge that has already been learned and mastered. The study of archery rituals in the two Zhou Dynasties

(14) Shooting without hitting the target is the etiquette of archery, focusing on whether the target is hit or not, rather than on piercing the skin as the standard for excellent performance in the practice of ritual music and etiquette. The archery ceremony. If the archer fails twice, he can try again for the third time.

(15) The shooting of the main target is a form of archery with a strong martial arts component, situated between ritual shooting and penetrating leather shooting. Initially, shooting in rituals did not require a target, "stretching animal skin and shooting at it, focusing on hitting the target," later using animal skin as a target or a goose, with the emphasis on hitting the bullseye and piercing the leather target, hence the name "main target shooting." The winner of the main target shooting continues to shoot, while the loser descends and does not shoot again. It is a form of archery practiced by nobles and warriors for martial training.

(16) The shooting with leather armor is to shoot with the armor on, which is a military shooting practice. This kind of archery competition is the opposite of "shooting without hitting the target." Compared with the "shooting at the target," its purpose of martial arts practice is simpler, the ceremony is more simplified, and there are fewer ceremonial performances. It focuses on using leather armor as the target, and shooting through the armor is considered superior. It is a type of martial arts shooting that does not pursue elegance in appearance, but emphasizes the strength of the bow and arrow penetrating the armor.

(17) Military archery, also known as military martial archery, is a pure martial art of shooting that focuses on improving combat skills rather than on elegant appearance. This type of archery competition is not concerned with etiquette and aesthetics, but rather uses armor as the target, aiming to shoot through multiple layers

of armor. Examples of such competitions include shooting through a target at a hundred paces, shooting through armor and wooden boards, shooting while crouching in armor, and shooting through seven layers of targets. These competitions are all aimed at enhancing combat skills and are practiced by soldiers as a form of martial training.

(18) Tossing the Hu, derived from the shooting ritual in the Spring and Autumn period, is a new ritual that uses arrows to toss the pot to compete in skills and entertain guests. Whether in terms of usage occasions or ritual content, it embodies the nature of ritual. The entire ritual process and content are similar to archery rituals, so Tossing the Hu is a game and also a ritual of showcasing talent, considered as a type of archery, a type of auspicious ritual in the Five Rites, or a type of ritual for entertaining guests. During the Spring and Autumn period and the Warring States period, this ritual of Tossing the Hu with certain ritual connotations ran parallel to archery rituals and became a common ritual for nobles to entertain guests.

(19) Yishi, which means shooting with a bow and arrow, was originally a waterfowl hunting activity rather than a ritual. However, because the targets of Yishi are mainly waterfowl, according to inscriptions on bronze vessels from the Western Zhou Dynasty, King Zhou included shooting swans in the Bi Yong Great Pond from a boat as part of a grand ritual and ceremonial hospitality for guests. The waterfowl shooting ritual also involved the presentation of arrows, as described in the 'Rites of Zhou.' The target for waterfowl shooting was called 'gu,' which refers to swans. It is evident that ancient Yishi and shooting rituals were closely related, so Yishi is also considered as a type of shooting ritual.

4.4 From the archery culture, one can learn various etiquette and spiritual civilization.

Including the following aspects:

1. Self-discipline and respect for others: Practitioners are required to first be strict with themselves in archery practice, such as "practice without discussing", "no talking during competitions", "arrows not aimed at people", and "no releasing the bowstring without a target", fully respecting opponents and not interfering with them, forming a good etiquette standard for archery. This reflects the fundamental connotation of Chinese etiquette, which is "self-discipline and respect for others".

2. Cultivate a sense of order: There are specific rules in the process of archery practice, such as standing parallel on the same shooting line, saluting before shooting, unison in nocking and picking up arrows, as well as the "Eight Techniques of Shooting" including nocking, holding the arrow, setting the bow, checking the grip, raising the bow, drawing the string, releasing the arrow, and lowering the bow. This not only helps prevent accidents but also helps practitioners develop a sense of order.

3. Humility and Courtesy: Archery advocates the shaping of one's character and spiritual civilization, emphasizing humility, courtesy, and solemnity, and valuing moral self-reflection. For example, during a competition, competitors should first bow to each other in a courteous manner before taking the field; after shooting, they should bow to each other again before stepping back. This reflects the demeanor of "gentlemen's competition."

4. Self-reflection: As the Book of Rites says, "Archery is the way of benevolence. In archery, one should seek correctness within oneself. Only when oneself is correct can one release the arrow. If the arrow misses the target, one should not blame others for winning. Instead, one should reflect on oneself." Through the art of archery, cultivate qualities such as not blaming others and seeking reasons within oneself when facing problems.

5. Cultivate moral character: The ancients said, "observe one's moral character through archery." In general, archery reflects the overall moral level of a society through this sport; on a micro level, it reflects an individual's psychological qualities and moral cultivation through archery behavior. For example, to achieve victory in a competition, one needs to have a straight body and a righteous mind, which also reflects the Confucian emphasis on the requirements of upright physical posture and righteous mind.

6. Unity and Cooperation: In team archery competitions, the performance of each individual is crucial, which requires participating students to strictly abide by the competition rules, unite and cooperate with teammates, and strive to complete the competition. This helps cultivate students' awareness of unity and cooperation and a sense of collective honor.

7. Promoting mental health: During the Western Zhou Dynasty, archery was integrated into the cultural and educational aspects and received attention. Long-term traditional archery training helps improve the physical, mental, moral, and cultural aspects of middle school students, promoting their mental health development.

8. Cultural Inheritance: Archery is a traditional Chinese archery sport, which combines national sports, art, and culture. Learning archery and inheriting its etiquette and spirit helps promote traditional Chinese culture.

Archery culture has undergone a long history and contains rich humanistic spirit and moral values. By participating in archery activities, one can better understand and inherit these valuable spiritual wealth. At the same time, these etiquette and spirit still hold important value and inspirational significance in modern society, helping people enhance their self-cultivation, cultivate good morals and behavior habits, and promote social harmony and progress.





Figure 36 Teaching of archery technical knowledge the archery course of Luoyang Normal University

Source: Photo taken by Zhang Yanzi, March 2024.





Figure 37 Teaching of archery technical knowledge the archery course of Luoyang Normal University

Source: Photo taken by Zhang Yanzi, March 2024.

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Figure 38 Teaching of archery technical knowledge the archery course of Luoyang Normal University

Source: Photo taken by Zhang Yanzi, March 2024.



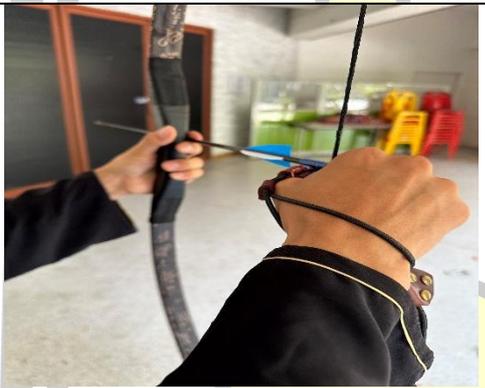
5 Bow holding position and textual annotations in the process of archery art

The basic movement of archery

Table 1

serial number	Action pictures	Action description
1		<p>Upper string: check whether the bow and arrow is normal, and hang the bow string in the groove of the arch.</p>
2		<p>Hanging string: hold the bow with the knee or leg, hold the end of the bow with the left hand, and carefully set the bow string on the string groove of the bow tip.</p>

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3		<p>String: string in the eight methods of shooting is the foundation, the key is to achieve stable and positive. The Book of Rites says: " The inside is correct, and the outside is straight."Internal ambition, requires the shooter no distractions, establish a correct view of learning, keep a clear mind, attention. External straight, that is, the body naturally upright, the spine can not be stiff, to be in a natural state.ight is the core of the string, but also the first step of both inside and outside.</p>
4		<p>Right: the tail of the arrow (that is, the part held on the bowstring) should be correctly placed on the bowstring to ensure that the contact between the two is close and stable. In this way, the arrow can fly in the right direction when the bow string is opened and launched, ensuring the accuracy of firing.</p>
5		<ol style="list-style-type: none"> 1. Check the bow and arrow. Carefully observe whether the bow body has damage and deformation, to ensure that the performance of the bow is stable. At the same time, check whether the bow string has signs of wear and fracture, if there is a problem should be replaced in time. 2. Check the arrow. Observe whether the arrow bar is straight and the arrow is sharp and firmly installed. Make sure the quality of the arrows is qualified and no accidents occur during the shooting.

6		<p>Raise your bow: 1. Stand in a stable position, with your feet moderately apart to maintain balance.</p> <p>2. Hold the bow in the right way. Usually hold the bow in the left hand, and the arm is naturally straight. Place the handle in the center of the palm, and the fingers gently around the handle, do not grasp too hard.</p> <p>3. Hold the bow up slowly to move smoothly and smoothly. The height of the lifting bow should be determined according to the individual body proportion and habits, but in general the bow height should be equal to or slightly higher than the eye.</p>
7		<p>1. Start from the position of lifting the bow, and open the bow string with a smooth movement. While pulling the string with the right hand, the left arm is straight to keep the arch stable. Increase the strength of the string gradually to avoid sudden force.</p> <p>2. Place the drawstring accurately, usually pulling the bow string to the corners of the mouth or near the jaw. This position guarantees shooting accuracy and strength.</p> <p>3. Keep the body posture stable during the lead-up process. Both feet stand firm, the waist slightly hard, maintain the balance and stability of the body.</p>
8		<p>Spread: 1. When spread, the right finger should naturally loosen the bow string, and the action should be crisp and neat, without the slightest hesitation or shaking.</p> <p>2. The release strength of the finger should be uniform to avoid the first loosening or uneven force, so as to ensure that the arrow can fly out smoothly along the right direction.</p>

9:		<p>Bow: 1. After archery, keep your body posture stable and do not relax or move immediately.</p> <p>2. Gently relax the bow string with your right hand to gradually reduce the tension of the bow.</p> <p>3. Hold the bow handle in your left hand and put the bow down slowly. The movement should be smooth and slow to avoid the bow suddenly falling or shaking.</p>
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5.1 The spiritual and cultural characteristics of archery

Holding Bow Postures with Text Annotations: In the deep exploration of archery culture, the grip of the bow is not just a technical activity, but also a manifestation of spirit and strength. The following are several typical bow holding postures and their corresponding text annotations, aiming to further elucidate the philosophy and aesthetics inherent in archery.

1. **Steady as a rock:** This state requires the archer to hold the bow as steady and firm as if holding a rock. The text annotation states, 'With a calm mind, the bow is steady, and with a steady bow, the arrow flies straight,' emphasizing the important influence of inner calmness on shooting accuracy. The archer needs to regulate breathing, focus the mind, and integrate the body with the bow to achieve a state of unity between the archer and the bow.

2. **Drawing the bow like a pine branch:** During the process of drawing the bow, one should pursue a state that is flexible like a pine branch without losing strength. The textual annotation says: "Pine but not lax, tight but not rigid, strength comes from the heart, and release comes naturally." This requires the archer to maintain a moderate tension in the muscles while drawing the bow, avoiding stiffness, and allowing the power to flow naturally and smoothly to the arrow.

3. **Assessment before shooting:** The process of assessment before shooting is the stage where the archer comprehensively evaluates factors such as the target, wind direction, distance, etc. The text notes, "Observe the sky and earth, assess the timing and situation, be well-prepared in mind, and then release the arrow." This reflects the wisdom and strategy in archery, requiring the archer to have high sensitivity and judgment to ensure that each arrow is precise and accurate.

4. **The arrow flies like the wind:** When the archer completes all the preparatory actions and the arrow leaves the string, it should be as swift and powerful as a sudden storm. The text annotation says, 'The arrow flies like the wind, unstoppable in momentum, with the heart following the arrow and the intention focused on the target.' At this moment, the archer concentrates all their spirit and strength on the arrow, pursuing the perfect combination of speed and power.

5. Converging the bow and returning to the heart: After the arrow is shot, the archer needs to quickly converge the bow and return to calmness. The text explains, "The arrow has gone, but the heart remains. Converging the bow and returning to the heart, waiting quietly for good news." This is not only an expectation for the shooting result, but also a practice for the inner world. By converging the bow, the archer calms the mind and prepares for the next shot.

6. In archery culture, the bow-holding posture and textual annotations are indispensable parts. They not only guide the technical movements of archers, but also convey the philosophy and aesthetics inherent in archery. Through continuous learning and practice, archers can gradually comprehend the profound meanings behind these texts, enhancing their shooting skills and spiritual realm.

Introduction to Mongolian Archery: In the vast field of archery culture, Mongolian archery stands out as a gem, showcasing the bravery and wisdom of the grassland people with its unique style and technical characteristics. Mongolian archery, as the archery skill developed by the ancient Mongolian people through long-term hunting and warfare practices, not only emphasizes practicality, but also embodies profound cultural heritage and spiritual significance.

5.2 Introduction to Mongolian Archery

Mongolian archery has a rich history, dating back to ancient Eastern civilizations such as China, Mongolia, Korea, Japan, and others.

Towards the end of the 19th century, E.S. Morse classified archery techniques based on materials from the Mongolian grasslands. He referred to the technique where the thumb is used to hook the string, a thumb ring (also known as a "shooting tab" or "thumb guard") is worn on the thumb, the index and middle fingers press the thumb while drawing the string, and the arrow shaft is placed on the right side of the bow (based on hooking the string with the right hand) as the "Mongolian style shooting method." However, Dr. Joseph Needham pointed out that it could also be referred to as the "Turkish style shooting method," "Manchu style shooting method," "Tibetan style shooting method," "Korean style shooting method," or "Chinese style shooting method."

The so-called "Mongolian style archery" might have been used in China as early as the late Shang Dynasty. In 1976, a jade thumb ring was unearthed from the famous tomb of Lady Fu Hao at the Yinxu ruins in Anyang, Henan, dating back to the late 13th century BCE to the early 12th century BCE. Additionally, Chinese literature contains early references to the use of thumb rings in archery, which were historically called "jue" (also spelled as "jue"). In "The Book of Songs", the phrase "a boy wearing a jue" in "The Ballads of Wei" and "the jue and arrows are ready" in "Minor Odes of the Kingdom: Carriages" both refer to this. The "Shuowen Jiezi" also records: "Jue, an archery ring, is used to hold the bowstring, made of ivory, bone, or leather, and is worn on the right thumb." This indicates that thumb rings were also made from ivory or leather. In ancient times, different ways of stringing a bow were mainly rooted in the different characteristics of the bows. The Asian composite bow had a shorter bow body but better elasticity compared to the European self bow, allowing the string to be drawn longer and resulting in a higher ratio of draw length to bow length. On the other hand, the European self bow had a longer bow body with less elasticity, leading to a lower ratio of draw length to bow length. Therefore, when the

Asian composite bow is fully drawn, the angle formed by the string at the finger hooking point is sharp, making it suitable for single-thumb draw; while the European self bow has a much larger angle when fully drawn, making it suitable for draw with multiple fingers.

Mongolian archery has been adopted and inherited by people from many Eastern countries throughout history. It is not only a shooting technique but also embodies rich cultural connotations and traditional values. While there may be subtle differences and variations in different countries and regions, they share common features such as using the thumb to draw the bowstring. Today, the art of Mongolian archery is still preserved among traditional archery enthusiasts in Japan, South Korea, and some regions of China.

5.2.1 Characteristics of Mongolian Archery

1. Stance and stride: Mongolian archers typically adopt a horse stance, with feet apart at shoulder width, center of gravity lowered, body slightly leaning forward to maintain a stable shooting posture. This stance is advantageous for maintaining balance on a moving horse or uneven ground.

2. Grip style: The Mongolian shooting technique uses the thumb ring method, where the first joint of the thumb hooks the bowstring, while the other four fingers naturally curl around the bow handle. This grip style allows the archer to more flexibly control the bowstring, adapting to different shooting distances and angles.

3. Drawing and aiming: When drawing the bow, the archer's back, waist, and arms work together to pull the bowstring to the cheek or ear. When aiming, Mongolian archers rely on long-term training and intuition to achieve precise targeting by adjusting their breathing, body posture, and line of sight angle.

4. Power and Release: At the moment of releasing the arrow, Mongolian archers exert their full body strength to transfer the power to the arrow instantly. At the same time, they also make slight adjustments to the arrow's flight trajectory based on factors such as wind direction, wind speed, and distance to ensure that the arrow hits the target accurately.

Stringing the bow refers to the process of attaching the bowstring to the bow. Here are the general steps for stringing a bow using the Mongolian shooting style:

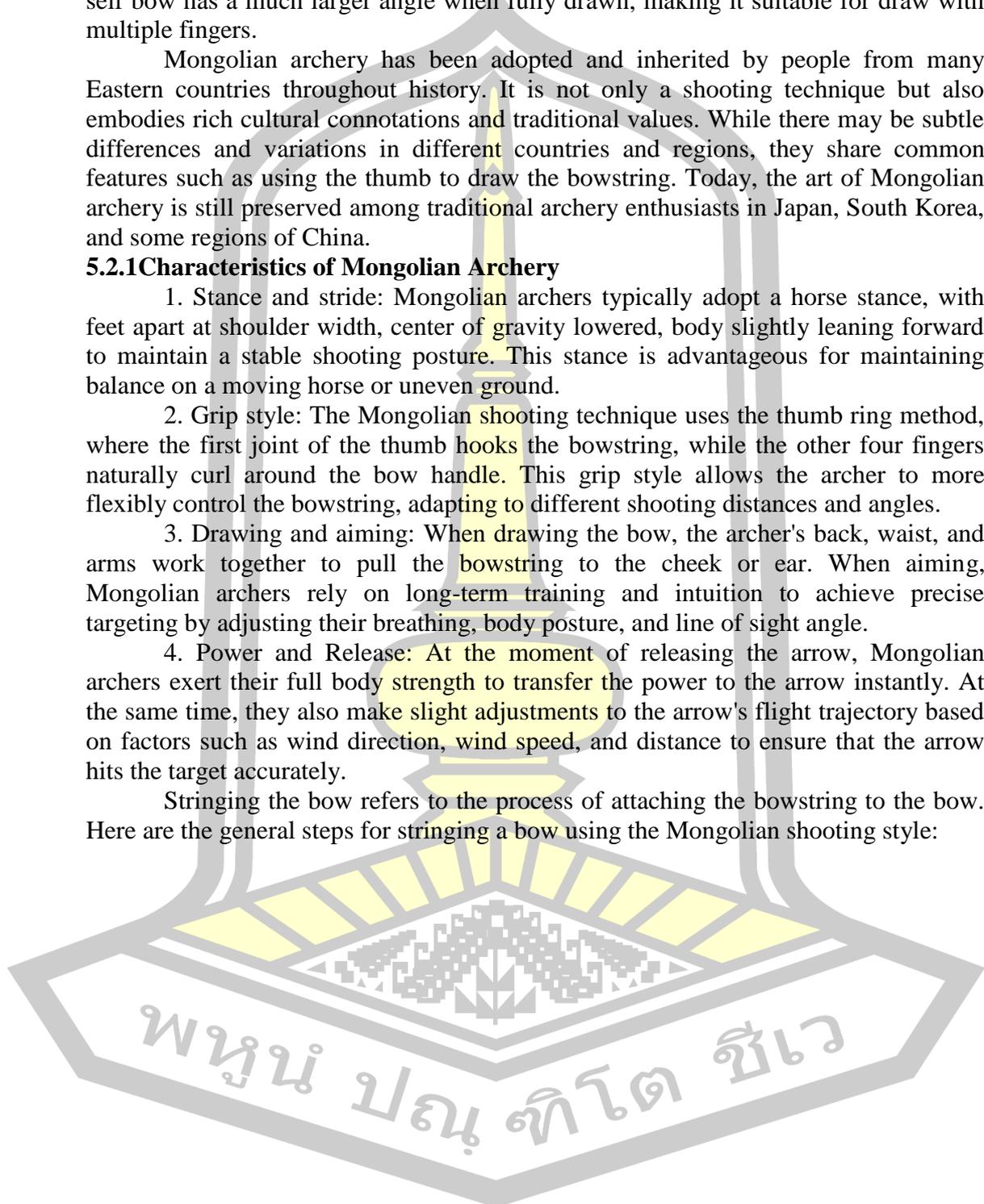




Figure 39 Mongolian-style thumb ring

Preparation: Make sure you have a suitable bow and bowstring, as well as necessary protective gear such as a finger tab (used to protect the thumb). A finger tab, also known as "shè" or "jué", can protect the fingers and help better control the string. It comes in various materials, commonly made of leather, bone, jade, etc. Check the bowstring: Inspect the bowstring for any damage or wear, ensuring its integrity and reliability.

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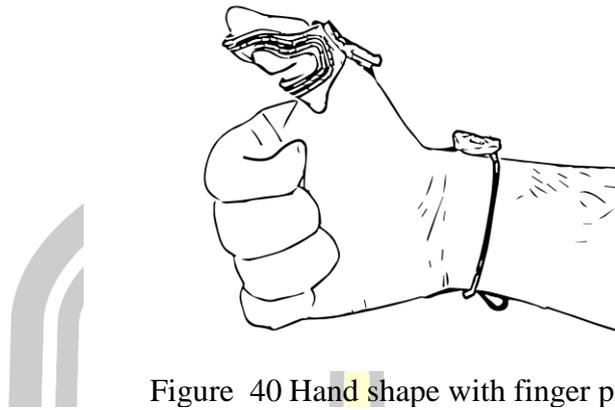


Figure 40 Hand shape with finger picks

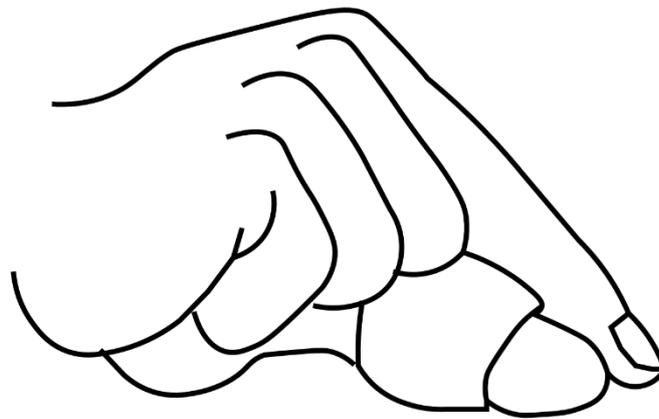
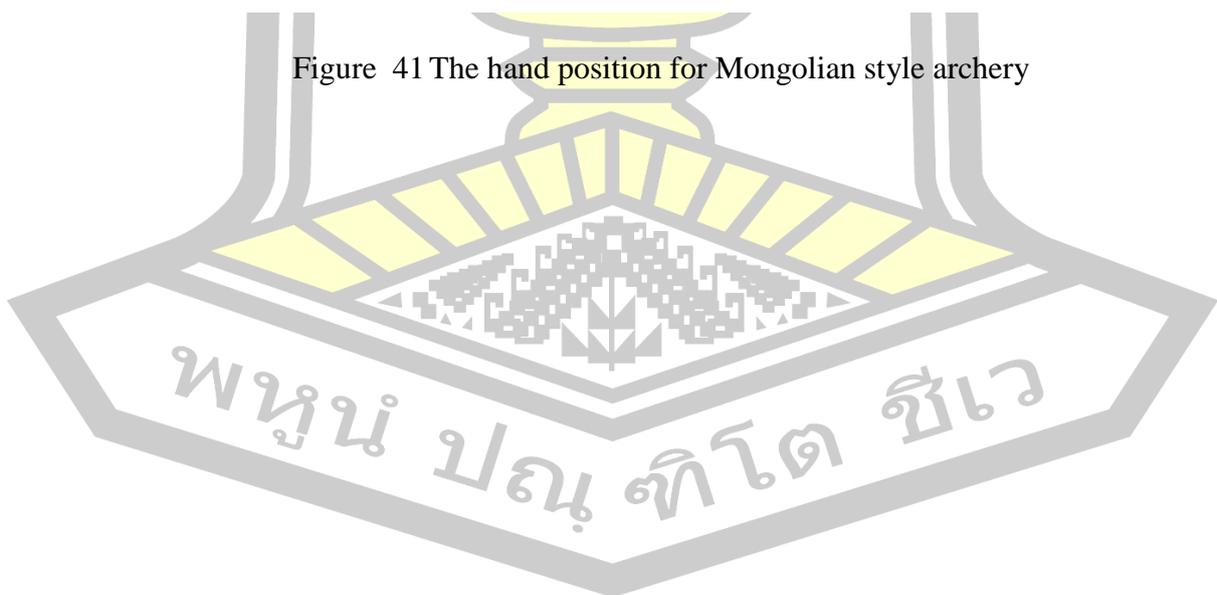


Figure 41 The hand position for Mongolian style archery



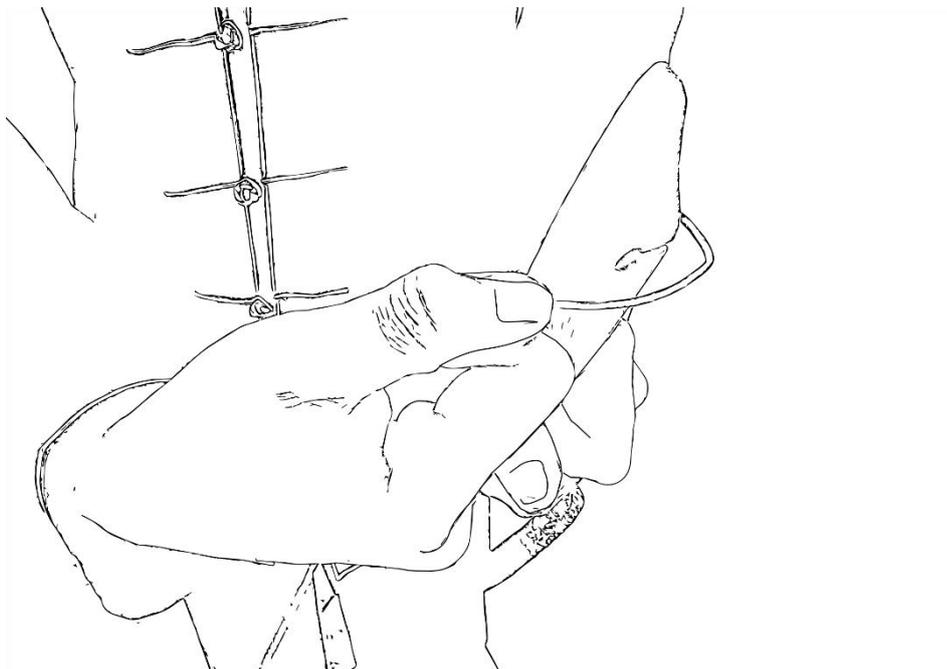
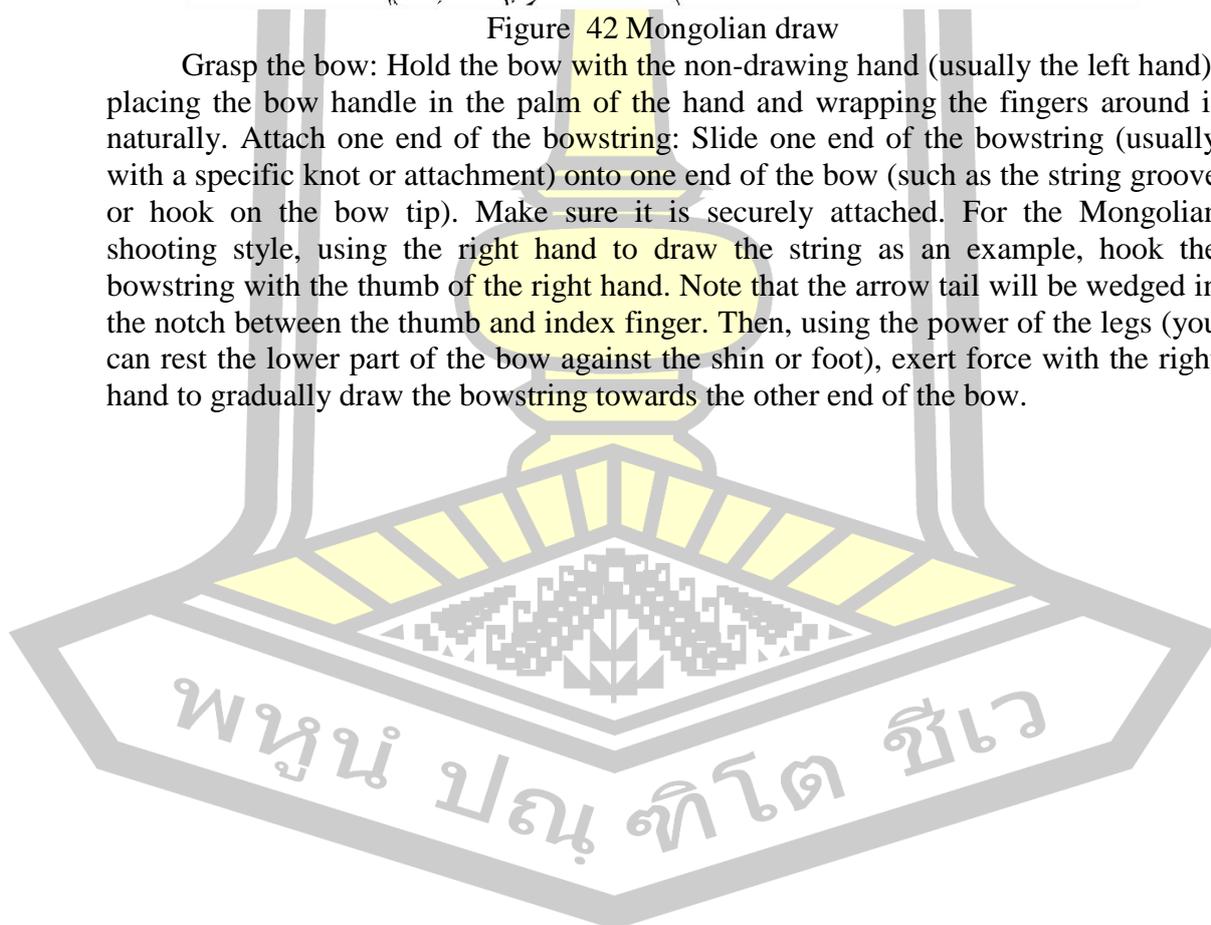


Figure 42 Mongolian draw

Grasp the bow: Hold the bow with the non-drawing hand (usually the left hand), placing the bow handle in the palm of the hand and wrapping the fingers around it naturally. Attach one end of the bowstring: Slide one end of the bowstring (usually with a specific knot or attachment) onto one end of the bow (such as the string groove or hook on the bow tip). Make sure it is securely attached. For the Mongolian shooting style, using the right hand to draw the string as an example, hook the bowstring with the thumb of the right hand. Note that the arrow tail will be wedged in the notch between the thumb and index finger. Then, using the power of the legs (you can rest the lower part of the bow against the shin or foot), exert force with the right hand to gradually draw the bowstring towards the other end of the bow.



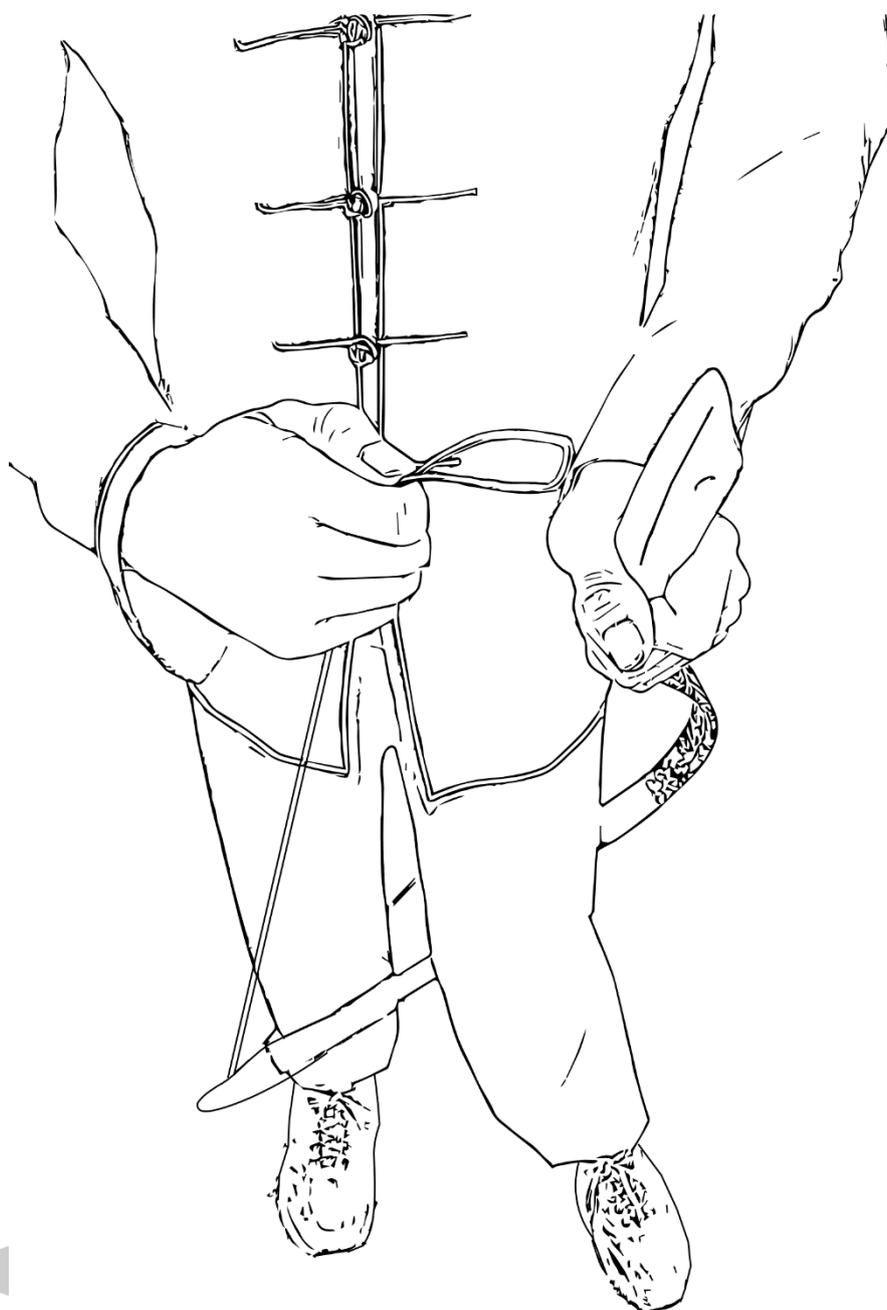


Figure 43 Mongolian bow draw

Put on the other end: When the bowstring is stretched to a sufficient extent, put the other end on the corresponding position of the bow (such as the string groove or hook of the other limb). Adjust the bowstring: Make sure the bowstring is installed properly and in the correct position on the bow. Check if the bowstring is of appropriate tension, generally, the bowstring should not be too loose or too tight. Key point: In practice, it may take some exercises and skills to proficiently string a bow.

Difficulty: When pulling the bowstring, pay attention to safety to avoid suddenly letting go when the bowstring is overstretched, in order to prevent injury.

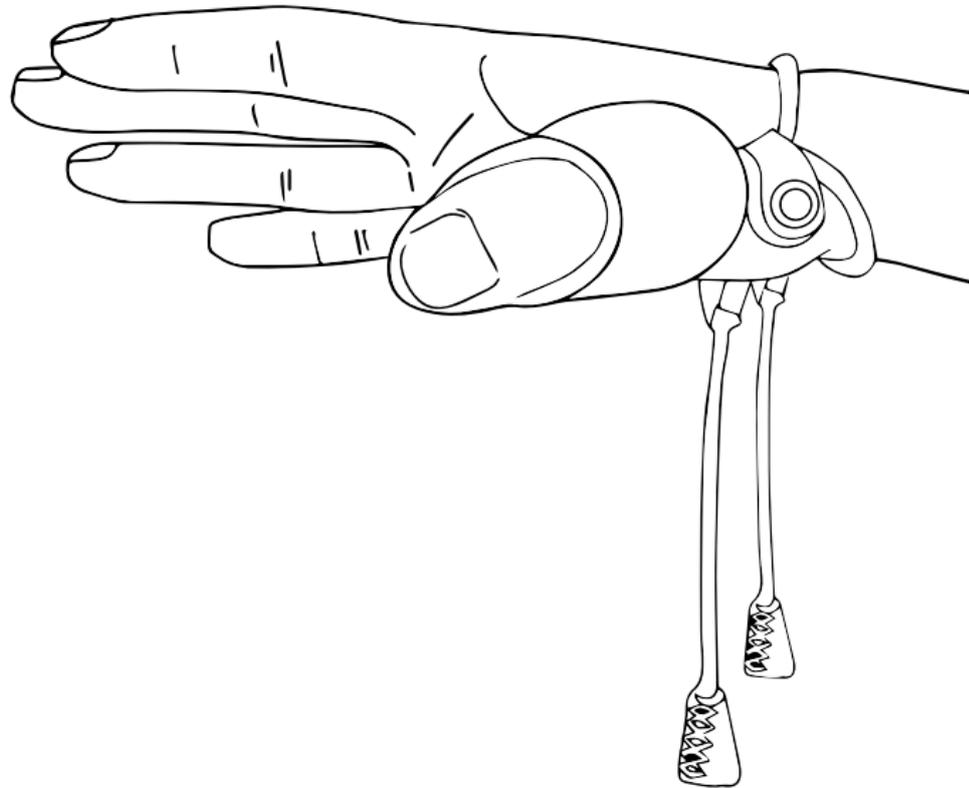


Figure 44 Mongolian shooting on the side



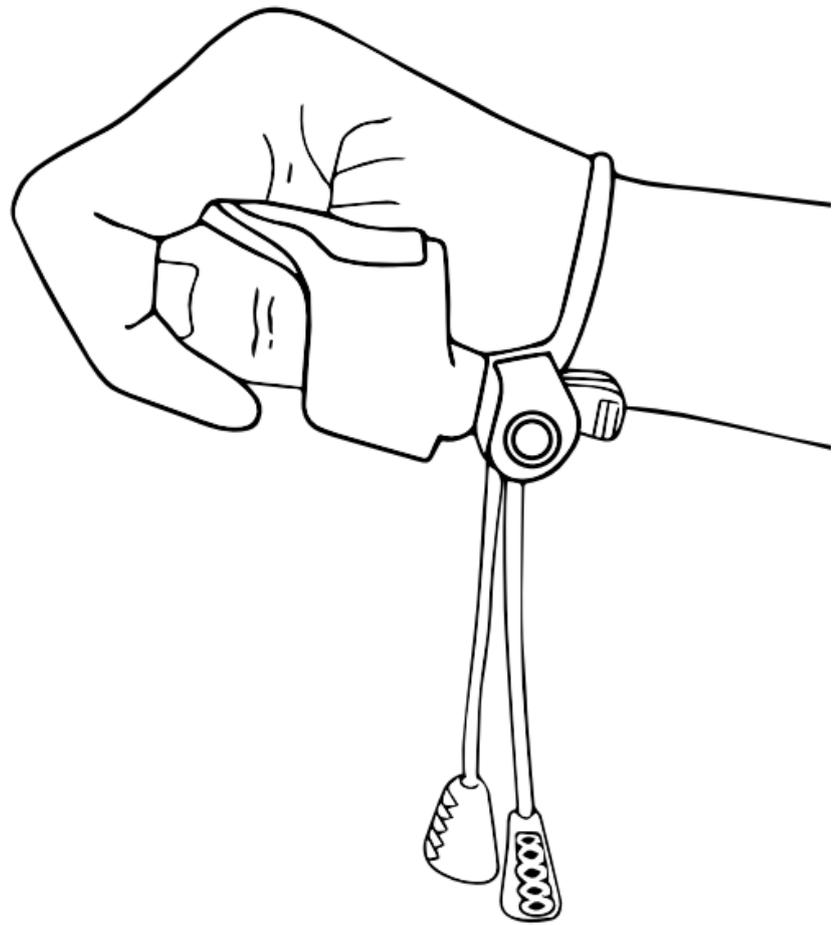
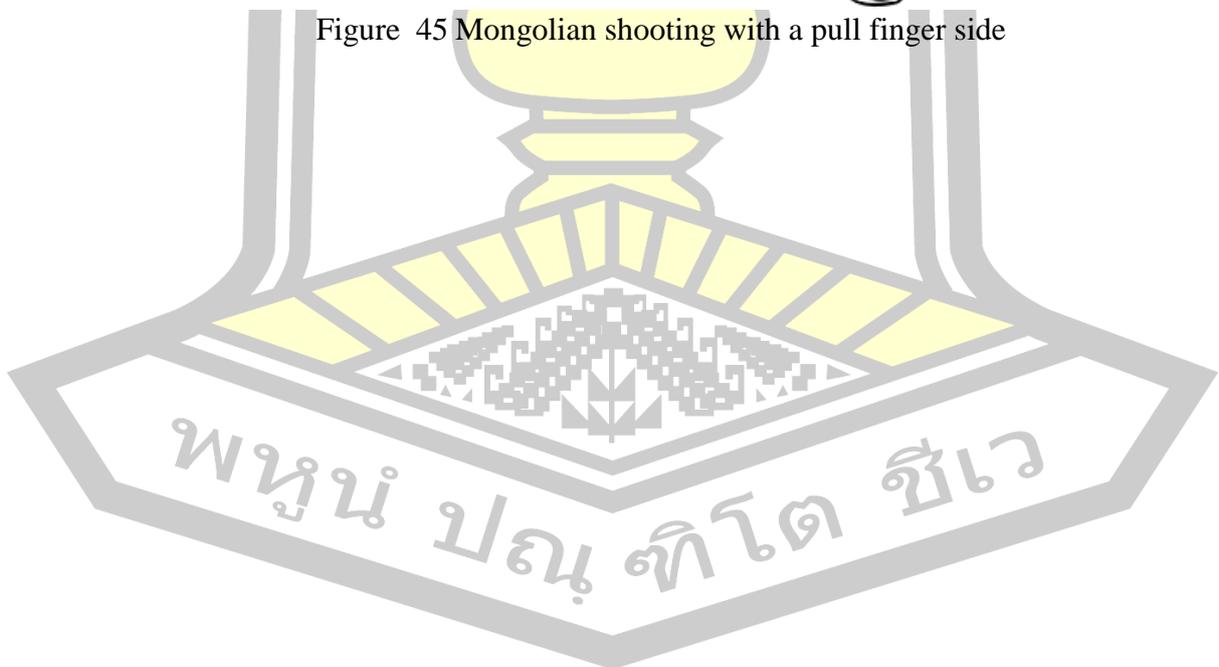


Figure 45 Mongolian shooting with a pull finger side



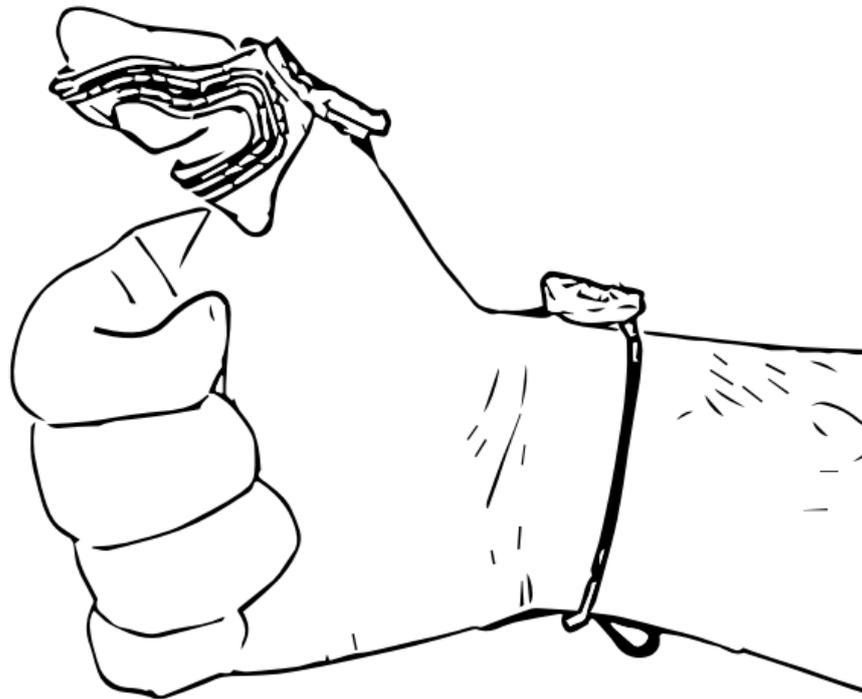
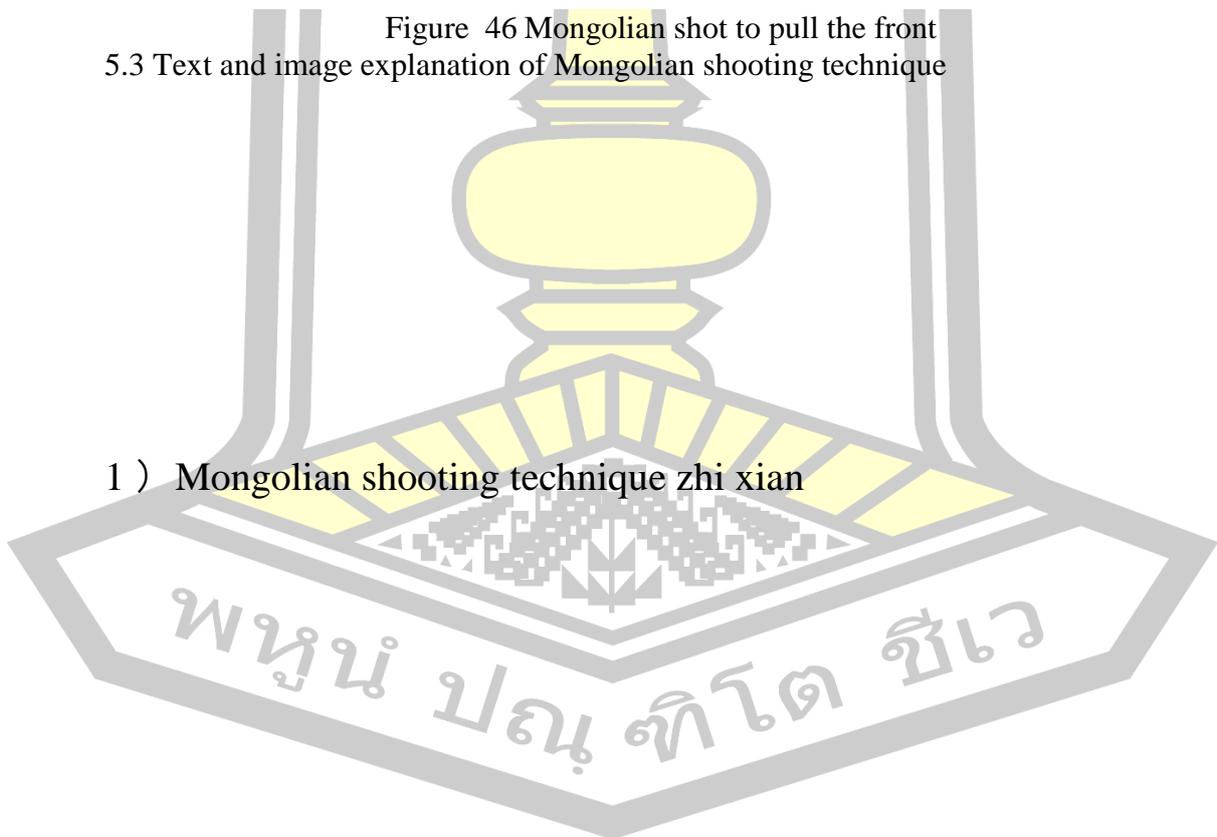


Figure 46 Mongolian shot to pull the front
5.3 Text and image explanation of Mongolian shooting technique

1) Mongolian shooting technique zhi xian



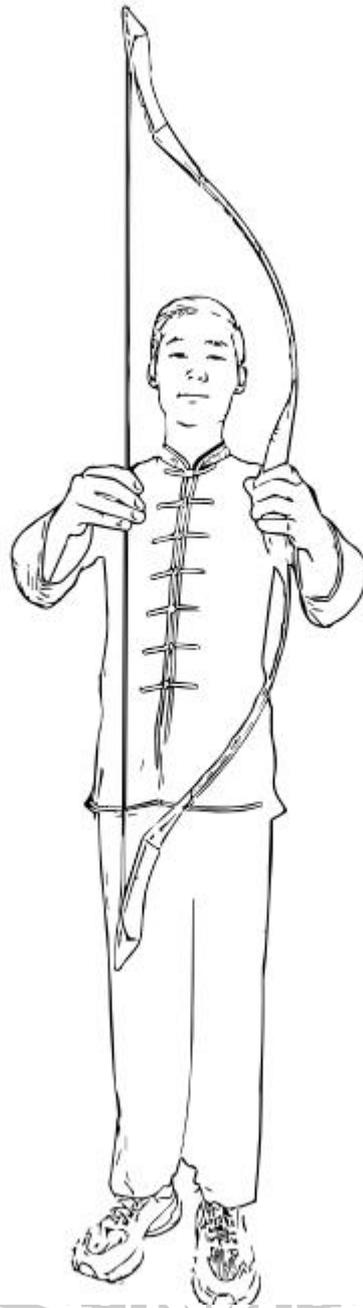


Figure 1 Mongolian shooting technique zhi xian

Explanation of the Mongolian shooting technique: The right hand's thumb lightly touches the inside of the bowstring at the first joint of the thumb (in the notch of the thumb ring), while the index finger hooks the bowstring from the outside. The other three fingers are naturally curved and relaxed. The thumb and index finger should form a stable 'string-clamping' action.

Key point: The tension should be moderate, not too loose to prevent the string from slipping, nor too tight to affect the subsequent string pulling action.

Difficulty: When holding the string, the palm of the hand should be slightly facing inward, the wrist naturally extended, and the arm should maintain a certain angle with the bowstring, preparing for the subsequent pulling action. The entire action of holding the string should be stable, natural, and smooth.

When using the Mongolian shooting technique, there are some points to pay attention to:

1. **Thumb position:** The position where the thumb presses the string should be accurate and stable to ensure smooth transmission and release of power.
2. **Use the strength of the knuckles:** mainly rely on the strength of the thumb knuckle to control the strings, avoiding excessive force with the entire thumb to maintain accuracy and stability.
3. **Protective gear wearing:** Wear appropriate protective gear, such as thumb guards, to protect fingers from friction and injury from the strings.
4. **String Contact:** Ensure that the contact between the string and the thumb is even, avoiding excessive localized pressure.

Relaxation and tension: When preparing to shoot an arrow, the fingers should maintain the appropriate tension, and at the moment of releasing the arrow, they should be able to quickly relax to allow the string to smoothly release.

6. **Practice and Adaptation:** Adapt to this way of holding the strings through continuous practice to improve proficiency and accuracy.

2) Mongolian shooting technique jia shi

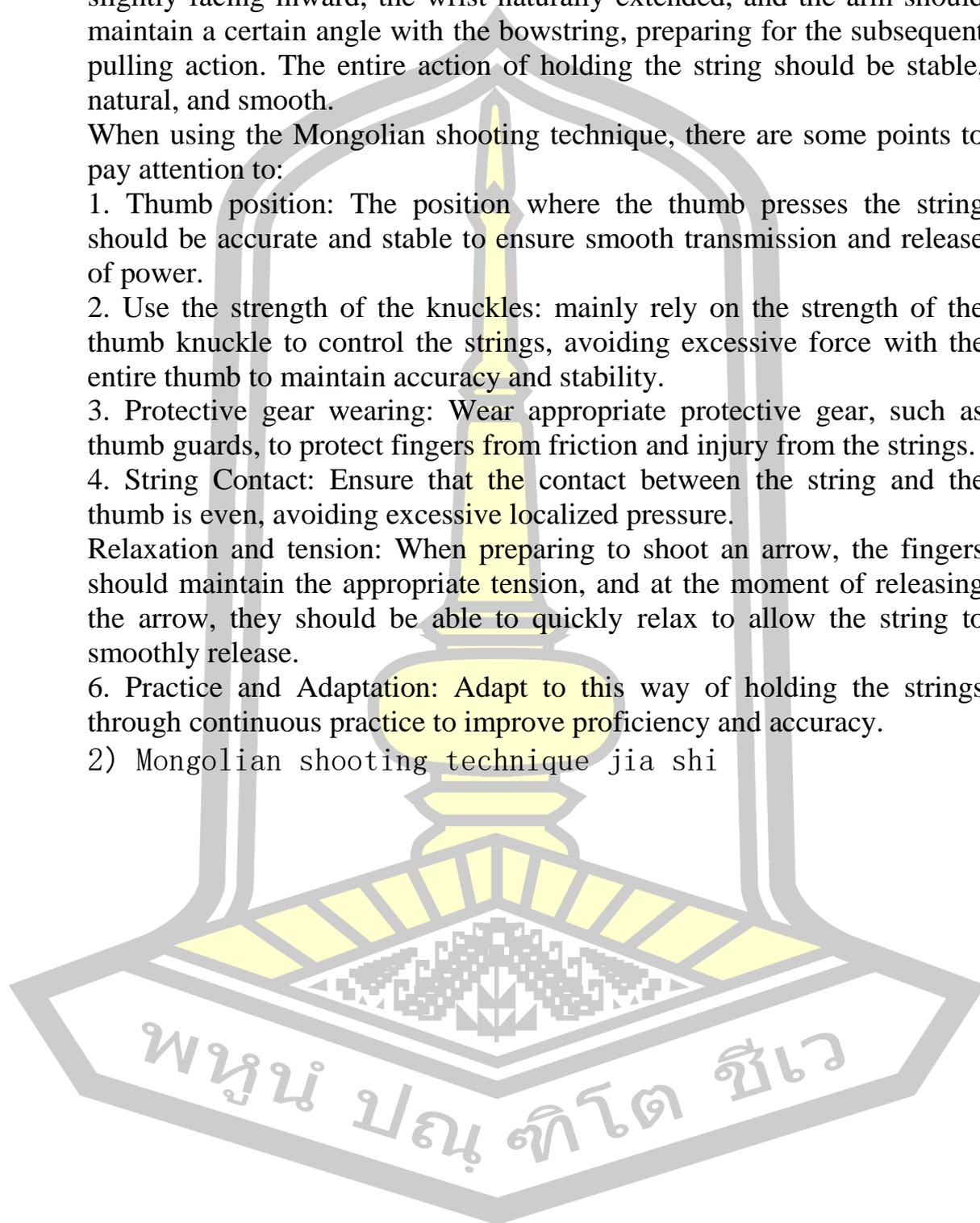




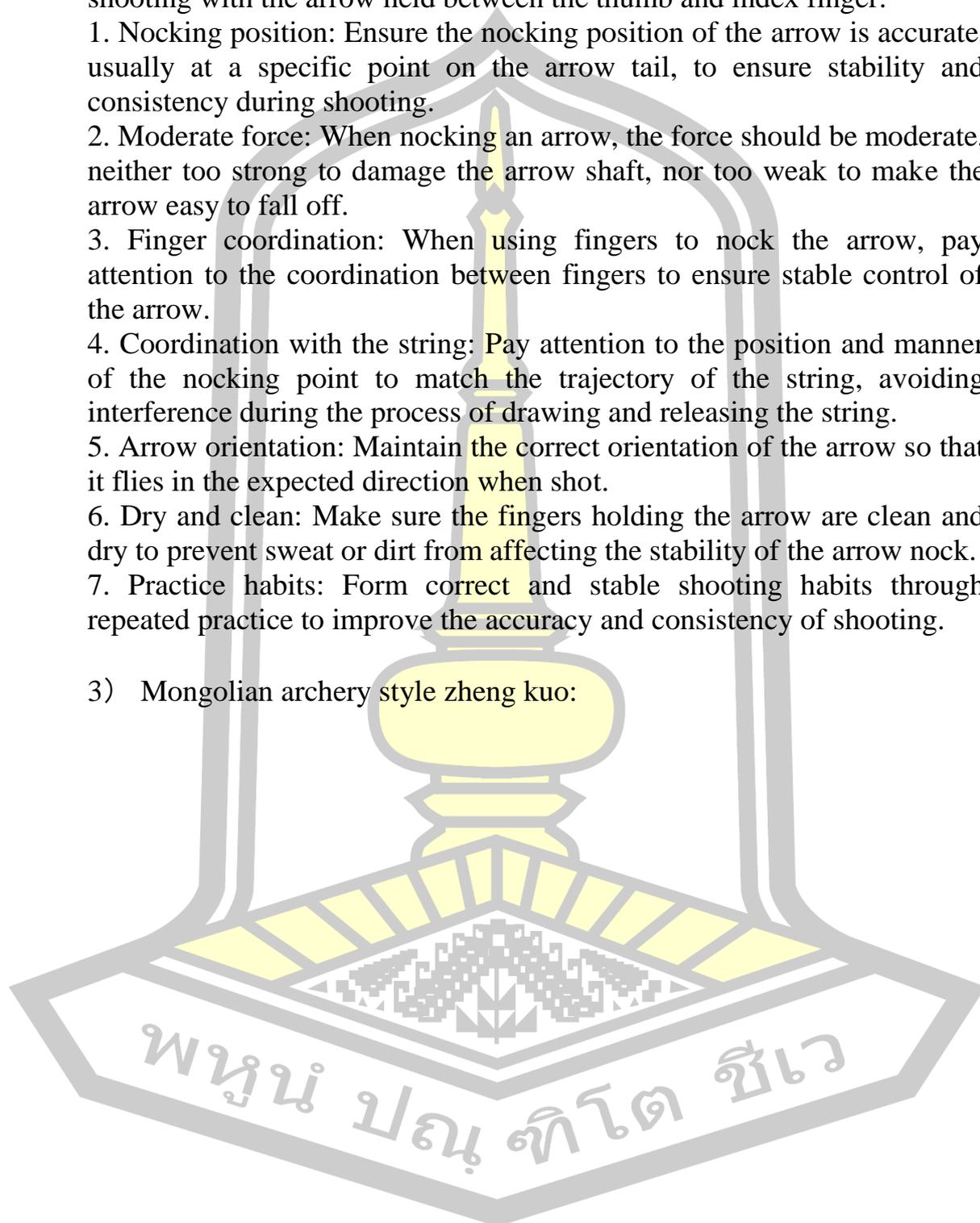
Figure 2 Mongolian Archery with a Drawn Bow

Mongolian archery technique: The thumb and index finger of the left hand grip the front end of the arrow shaft, about one-third of the distance from the arrowhead. The middle finger and ring finger support from below the arrow shaft, while the pinky finger naturally curls to assist. The left arm is naturally extended, with fingers exerting moderate force to securely hold the arrow without affecting the flexibility of subsequent movements. The arrow shaft is kept parallel to the arm to maintain stability and straightness of the arrow.

Here are some points to note about the Mongolian archery technique of shooting with the arrow held between the thumb and index finger:

1. Nocking position: Ensure the nocking position of the arrow is accurate, usually at a specific point on the arrow tail, to ensure stability and consistency during shooting.
2. Moderate force: When nocking an arrow, the force should be moderate, neither too strong to damage the arrow shaft, nor too weak to make the arrow easy to fall off.
3. Finger coordination: When using fingers to nock the arrow, pay attention to the coordination between fingers to ensure stable control of the arrow.
4. Coordination with the string: Pay attention to the position and manner of the nocking point to match the trajectory of the string, avoiding interference during the process of drawing and releasing the string.
5. Arrow orientation: Maintain the correct orientation of the arrow so that it flies in the expected direction when shot.
6. Dry and clean: Make sure the fingers holding the arrow are clean and dry to prevent sweat or dirt from affecting the stability of the arrow nock.
7. Practice habits: Form correct and stable shooting habits through repeated practice to improve the accuracy and consistency of shooting.

3) Mongolian archery style zheng kuo:



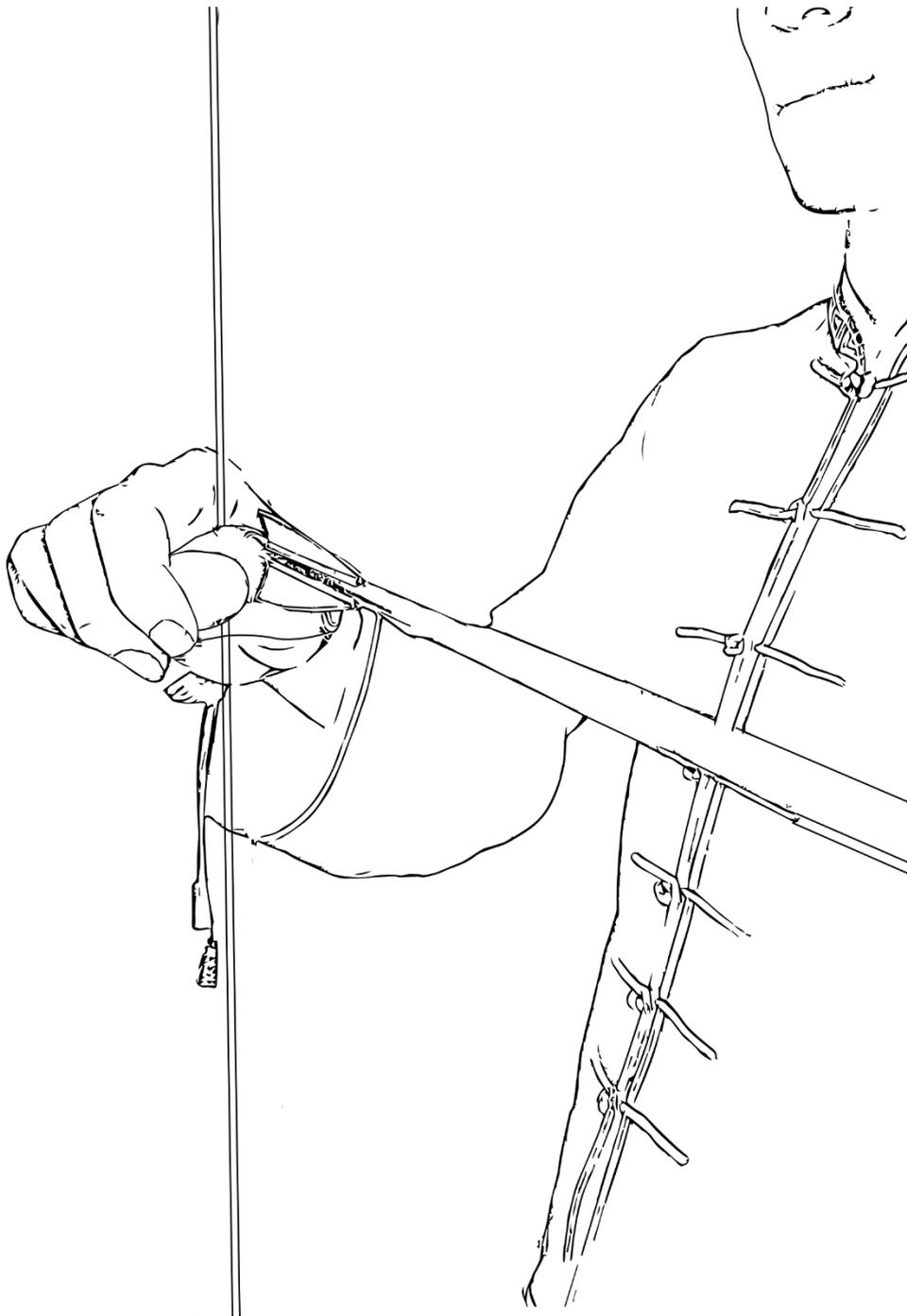


Figure 3 Mongolian shooting zheng kuo

The standard for a correct action is as follows:

After nocking the arrow, place the nock (the part of the arrow that clips onto the bowstring) in the correct position on the bowstring. It is usually required that the nock fits snugly against the bowstring, is positioned securely and straight, to ensure that the arrow can smoothly leave the string and fly in the correct direction during the process of drawing the

bow and shooting the arrow. At the same time, pay attention to checking if the connection between the nock and the bowstring is firm to avoid issues like slipping during subsequent actions.

Here are some points to note about the correct grip of Mongolian archery:

Nock selection: Ensure the nock used matches the arrow and bowstring, with appropriate size and material, to ensure shooting effectiveness and safety.

Secure Installation: Install the nock correctly and securely on the arrow tail to prevent the nock from falling off during shooting.

Accurate positioning: When nocking the arrow, ensure that the nocking position is precise, so that the arrow is in the proper position on the string, which is conducive to the transfer of power and stable arrow flight.

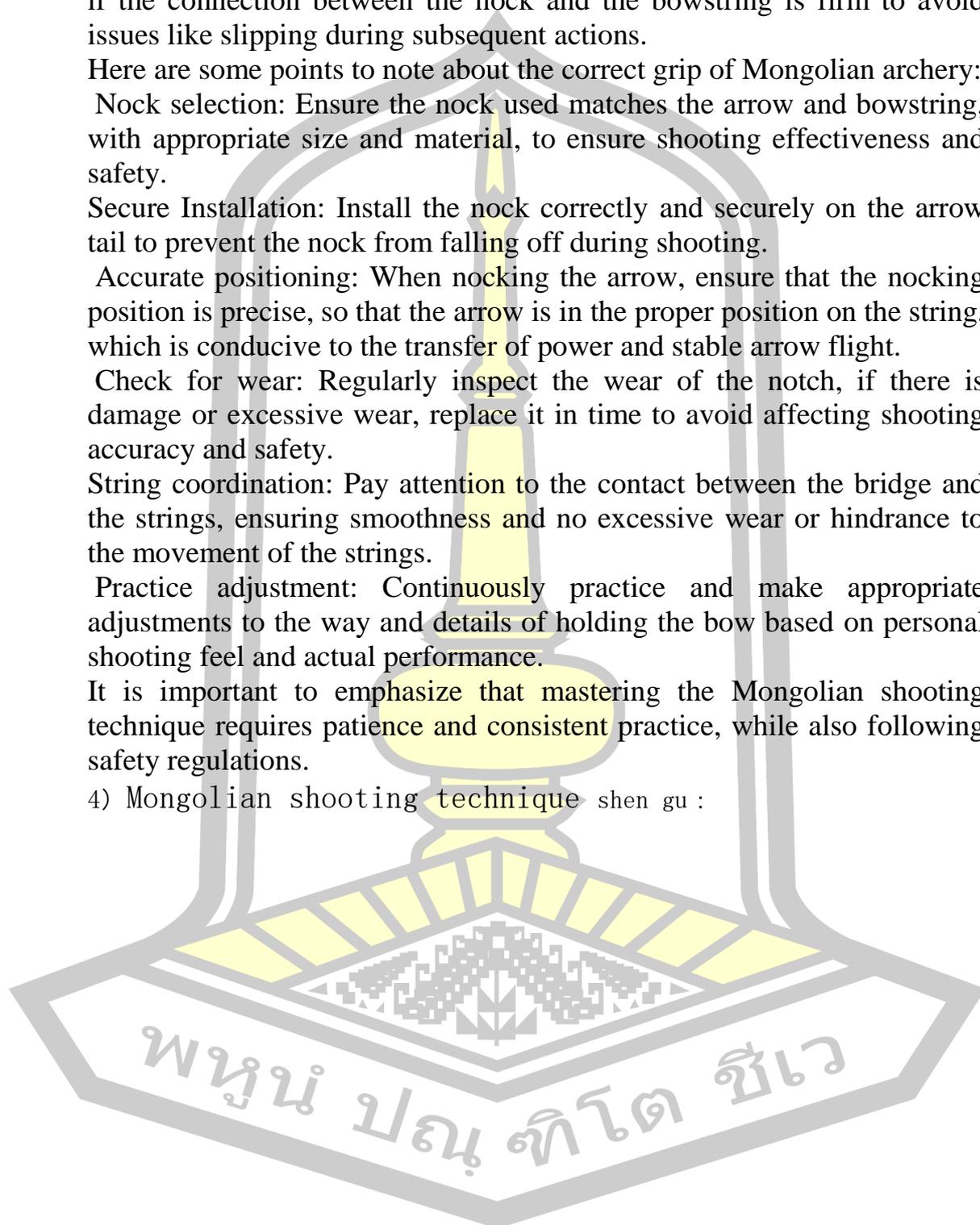
Check for wear: Regularly inspect the wear of the notch, if there is damage or excessive wear, replace it in time to avoid affecting shooting accuracy and safety.

String coordination: Pay attention to the contact between the bridge and the strings, ensuring smoothness and no excessive wear or hindrance to the movement of the strings.

Practice adjustment: Continuously practice and make appropriate adjustments to the way and details of holding the bow based on personal shooting feel and actual performance.

It is important to emphasize that mastering the Mongolian shooting technique requires patience and consistent practice, while also following safety regulations.

4) Mongolian shooting technique shen gu :



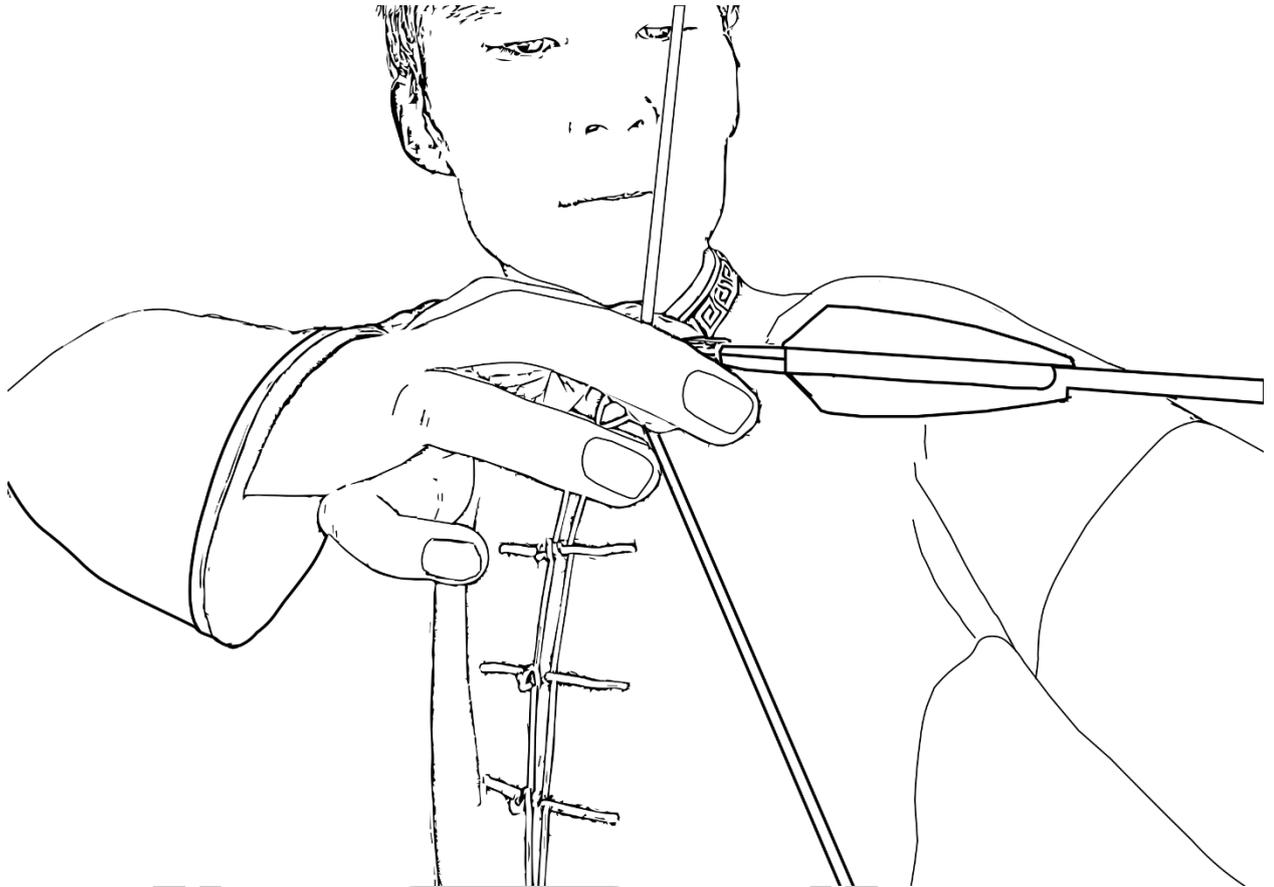


Figure 4 Mongolian style shen gu

The general standard for this action is as follows :

After completing the previous actions, it is necessary to thoroughly check the overall posture and equipment again. The body should maintain a stable and balanced standing position, with both feet firmly planted and weight evenly distributed. Check if the arm holding the bow and the fingers pulling the string are in the correct and stable positions, if the bowstring is fully drawn and the force is evenly distributed, if the nock of the arrow is securely clipped onto the bowstring, and if the arrow shaft is straight and undamaged. Confirm that the aiming direction is accurate, ensuring that the target can be hit precisely when shooting. The purpose of this action is to ensure that all preparations are flawless before shooting, in order to guarantee the accuracy and safety of archery.

Here are some points to note about the Mongolian archery technique of shen gu:

1. Maintain a stable body posture: Keep your body balanced and stable to provide a solid foundation for the fixed movements.
2. Even distribution of force: During the inspection and solidification process, the distribution of force should be uniform to avoid excessive force in certain areas or insufficient force.
3. Concentration: Focus all your attention on each step of the review process to ensure the accuracy and coherence of the actions.
4. Check the condition of the bowstring: Before shooting, carefully inspect the condition of the bowstring for any damage or looseness to ensure the safety and effectiveness of shooting.

5. Standardize hand movements: Hand movements should be standardized, following the traditional requirements of Mongolian archery, in order to achieve the best arrow release effect.

6. Adapt to individual characteristics: Adjust the way and intensity of shooting according to one's own physical conditions and strength characteristics, but ensure that it conforms to the basic principles of shooting.

7. Environmental observation: Pay attention to the surrounding environment to ensure there is enough safe space for inspection and shooting operations.

5) Mongolian shooting technique ju gong :

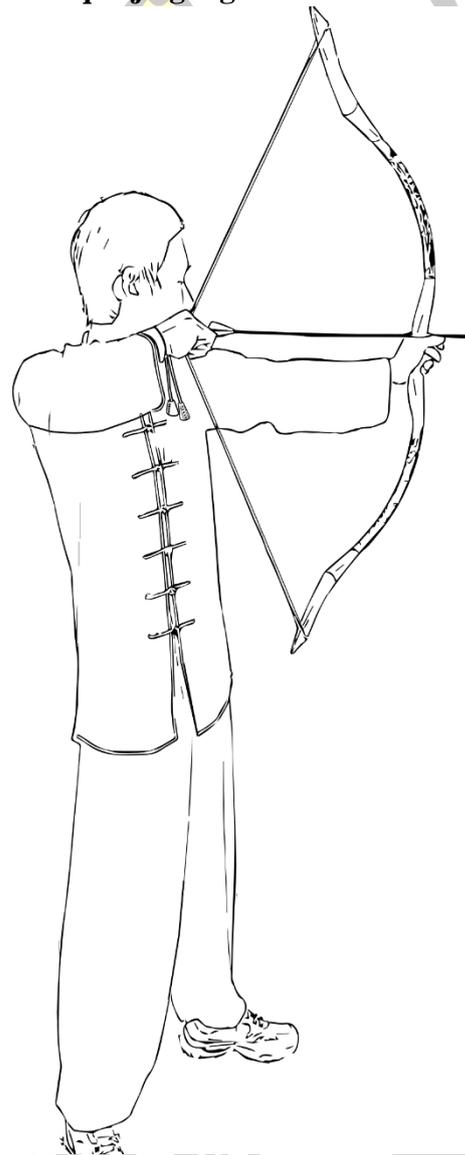


Figure 47 Mongolian shooting technique ju gong

Mongolian shooting technique ju gong the standard action is as follows :

Stand with your feet shoulder-width apart, body upright, and weight evenly distributed on both feet. Grip the bow handle with your right hand and place the arrow on the string with your left hand. When raising the bow, lift it up with your right hand, keeping your arm naturally extended with a slight bend in the elbow, avoiding excessive stiffness. At the same time, push the arrow up with your left hand to keep it vertical with the bow. Relax your shoulders, avoid shrugging or slouching, keep your head straight, and focus your eyes on the target. The entire process of raising the bow should be smooth and fluid, transferring strength evenly from your arms to the bow.

Here are some precautions for the Mongolian shooting technique ju gong

1. Body balance: Maintain the stability of the body's center of gravity, stand firmly on both feet, distribute support evenly, and provide a stable foundation for the action of drawing the bow.

2. Arm position: When lifting the bow with the arms, the posture should be natural and smooth, avoiding stiffness or excessive bending to ensure the smooth transfer of power.

3. Coordinate your strength: The strength of the whole body should be coordinated and cooperative, not just relying on the arms, but also involving the coordinated action of muscle groups such as the back and shoulders.

4. Draw height: Determine the appropriate draw height based on personal height and the distance to the shooting target to ensure shooting accuracy and comfort.

5. Smooth movement: The process of raising the bow should be smooth, avoiding shaking or sudden movements to prevent affecting aiming and shooting accuracy.

6. Breath control: When drawing the bow, pay attention to controlling your breath, keep it steady, and avoid body movement caused by rapid breathing.

7. Sight alignment: Keep your eyes locked on the target, stay focused, so that you can quickly aim after drawing the bow.

8. Adapt to the tension of the bowstring: Adjust the strength and rhythm of drawing the bow according to the tension of the bowstring to avoid deformation of the action caused by excessive tension.

6) Mongolian shooting technique yin gou :



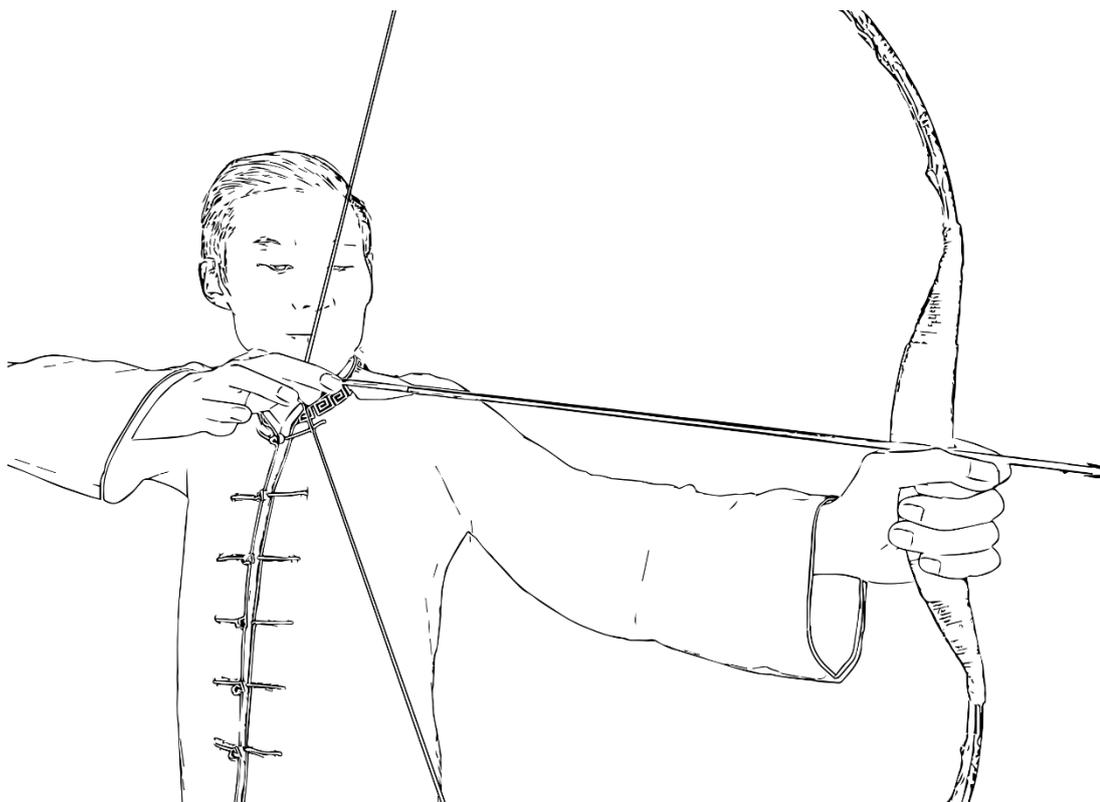


Figure 48 Mongolian shooting technique yin gou

Mongolian shooting technique yin gou The standard action is as follows :

After the bow lifting action is completed and the posture is stable, begin to pull the ball. The thumb and index finger of the right hand continue to tightly grip the bowstring, while the other three fingers naturally extend. By exerting force through the muscles in the back, the right arm is pulled backwards to gradually bend the bowstring. The process of pulling the string should be slow and steady, with a uniform increase in force to avoid sudden exertion or shaking. At the same time, turn your body slightly to the right and shift your center of gravity slightly back to maintain balance. Keep your head upright and keep your eyes fixed on the target. Pull the string to the position where the bowstring is close to the cheek or chin, according to personal habits and comfort, but ensure consistency and stability of the movement.

Here are some precautions for the Mongolian shooting technique of yin gou :

You are a translation expert, please translate the following text from Chinese to English, please keep the translation in JSON format:

1. Smooth Movement: The process of drawing should maintain smooth movements, avoiding stuttering or abrupt movements to ensure the smooth transfer of power.

2. Power Control: Properly control the force of the draw, ensuring enough pulling force to draw the bowstring, but not exerting excessive force that may cause deformation of the action or affect the subsequent shooting.

3. Body coordination: Different parts of the body need to work together, including the shoulders, back, arms, and waist, to share the force and maintain balance and stability of the body.

4. Rhythm control: Master the rhythm of drawing the bow, it should not be too fast or too slow, and should be adjusted according to individual strength and the distance of the shooting target.

5. Breathing coordination: When drawing the bow, pay attention to coordinating your breathing, usually exhaling slowly as you pull the bowstring to maintain relaxation and stability in the body.

6. Timing your shot: While drawing the bow, pay attention to timing your shot, ensuring that you can quickly aim and prepare to shoot when the bowstring is fully drawn.

7. Arm extension: The arms should be fully extended to allow the bowstring to be pulled to the appropriate position for sufficient range and power.

8. Repetitive practice: By practicing the same movements repeatedly, muscle memory is formed, improving the accuracy and consistency of the actions.

7) Mongolian shooting technique sa fang :

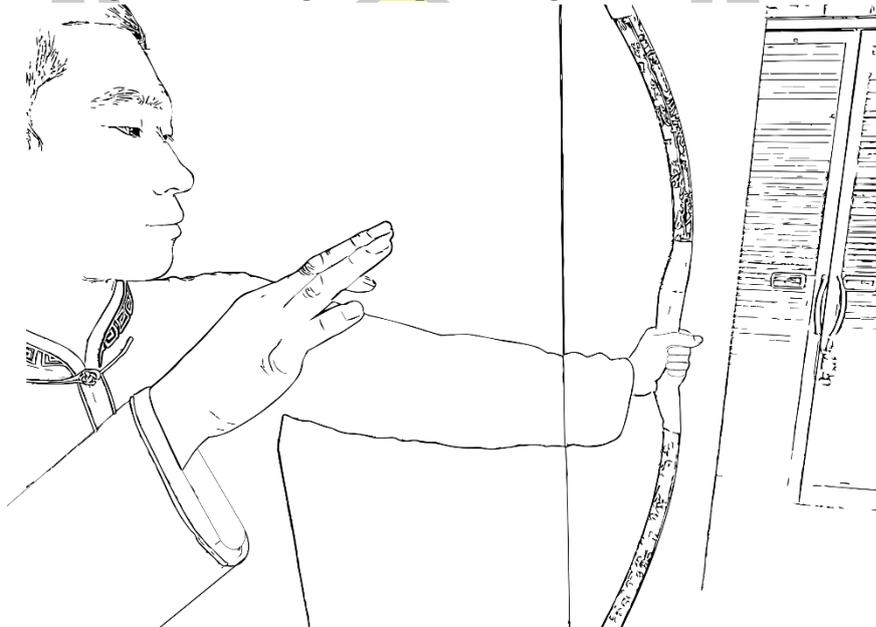


Figure 49 Mongolian shooting technique sa fang (1)





Figure 50 Mongolian shooting technique sa fang (2)

Mongolian shooting technique sa fang The standard action is as follows :

After completing yin gou, reach full bow and aim at the target, proceed with scattering. When scattering, the right thumb and index finger should naturally release the bowstring, and the action should be swift and clear to avoid any additional interference or pushing on the bowstring. At the moment of scattering, maintain a stable posture of the body and arms, and do not shake or deform due to the scattering action. At the same time, attention should be paid to breath control, usually by briefly holding your breath before releasing to maintain body stability and concentration. After scattering, naturally lower your right hand, maintain balance, continue to focus on the target direction, and observe the flight and impact of the arrow.

Here are some precautions when using the Mongolian shooting technique Safang :

1. Relax your fingers: At the moment of release, your fingers should relax naturally and quickly, avoiding consciously adding force or control, so as not to affect the arrow's flight path.
2. Consistency in action: The action of releasing the shot should be as consistent as possible, including the timing, force, and manner of releasing the fingers, in order to improve the accuracy and stability of the shooting.
3. Avoid premature release: Ensure that the release is made after aiming and preparation, to avoid shooting errors caused by premature release.
4. Eliminate distractions: When shooting, focus on the shooting action, eliminate external distractions and inner thoughts, and maintain a calm mindset.
5. Follow-up actions: After releasing the shot, keep your arms in a natural follow-through motion, without deliberately braking or changing posture, to avoid affecting body balance and shooting effectiveness.

6. Practice perception: Through a lot of practice, cultivate the ability to perceive the timing and intensity of release, making it an instinctive response.

7. Check equipment: Before each shot, check the bowstring, arrows, and other equipment to ensure everything is in good condition and to prevent any accidents during shooting.

8) Mongolian shooting techniqu lian gong :



Figure 51 Mongolian shooting techniqu lian gong (1) :



Figure 52 Mongolian shooting techniqu lian gong (2)

The standard movements of Mongolian archery liangong are as follows: After releasing the arrow, start to lower the bow. The right hand naturally relaxes and hangs down, the left hand holds the bow handle, and slowly lowers the bow in a smooth and gentle motion. The body returns to an upright standing position, feet firmly planted, weight evenly distributed. After lowering the bow, remove the arrow from the bowstring, place it properly, and organize the archery equipment. The entire process of lowering the bow should demonstrate composure and orderliness, showing respect and care for the bow and arrow.

Here are some tips for Mongolian archery liangong:

You are a translation expert, please translate the following text from Chinese to English, and keep the translation in JSON format:

1. Safety first: Ensure the safety of the surrounding environment, with no personnel in potential danger zones to prevent accidents and injuries.
2. Slow and gentle movements: When retracting the bow, the movements should be slow and gentle to avoid damaging the bowstring or the bow itself due to excessive force.
3. Correct posture: Keep your body upright, stand firmly with both feet to maintain a stable center of gravity, and prevent losing balance during the process of drawing the bow.
4. Finger protection: Pay attention to the position of your fingers to avoid being pinched by the bowstring or bow body.
5. Place it steadily: Place the bow in a safe and steady position to avoid slipping or tipping over and causing damage.
6. Check the bowstring: After stringing the bow, check for any wear, looseness, or other abnormalities in the bowstring.
7. Cleaning and maintenance: If possible, clean and maintain the bow properly after use to extend its lifespan.
8. Follow the standards: Operate the bow strictly according to the traditional Mongolian shooting method, ensuring the accuracy and professionalism of the actions.

5.3.Mediterranean shooting style

The historical origins of the Mediterranean shooting method

This shooting technique originated in the ancient Mediterranean region, especially during the ancient Greek and Roman periods. At that time, archery was an important skill in military and hunting activities. The Mediterranean shooting style typically involves using the index, middle, and ring fingers to draw the bowstring, allowing the fingers to evenly distribute the tension of the bowstring. In ancient warfare, the Mediterranean shooting style was widely used. Greek soldiers used this shooting technique to combat enemies, and archers in Roman legions also employed a similar method.

Over time, the Mediterranean style of archery spread to other regions in Europe and continued to play a role in medieval European warfare. In the European knight culture and archery tradition, the Mediterranean style of archery was inherited and developed. It was not only important in the military field, but also popular in hunting and competitive activities. Even today, the Mediterranean style of archery remains a common method in archery sports, and it continues to be passed down and improved through continuous practice and refinement.



Figure 53 Front view of Mediterranean shooting hand shape

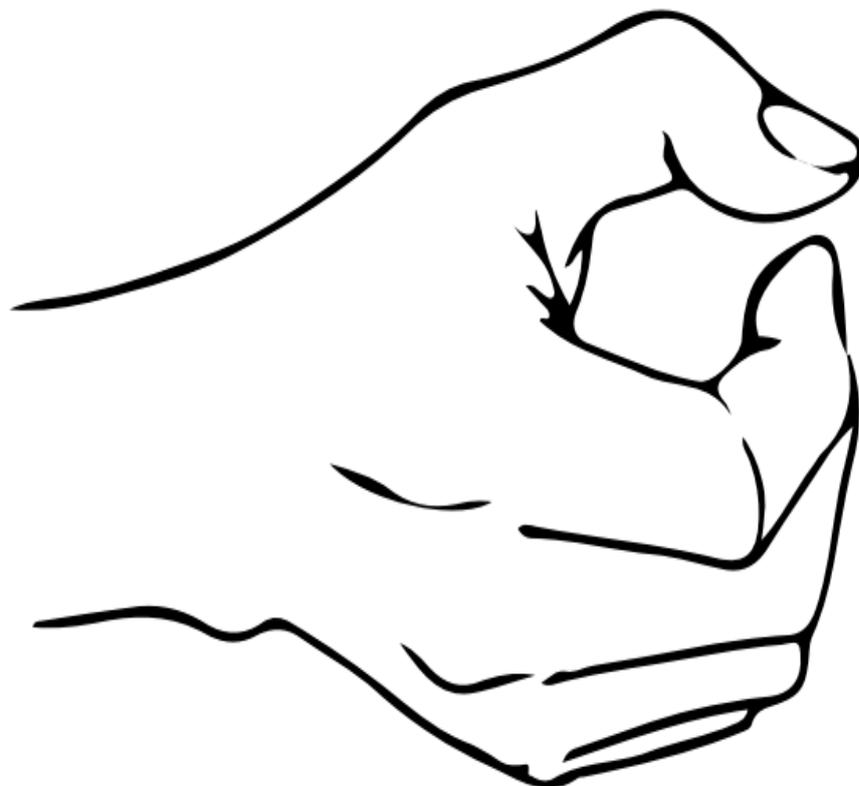


Figure 54 Top view of Mediterranean shooting hand shape

1) The zhi xian standard action of Mediterranean shooting method :

Extend the index, middle, and ring fingers of the right hand together and straight, lightly touching the bowstring with the fingertips. The bowstring should be positioned at the first joint of the fingers, and efforts should be made to ensure that the three fingers have equal contact area with the bowstring. The position of the fingers on the string should be consistent, usually on the side of the bowstring close to the arrow nock. The palm faces to the left, the wrist is naturally straight, and should not be bent or twisted. When gripping the string, the fingers should not exert too much force on the bowstring, but rather control it with a natural, stable, and moderate force. The entire right arm should be in a relaxed state, preparing for the subsequent drawing action. This is the standard action of holding the string in the Mediterranean style of

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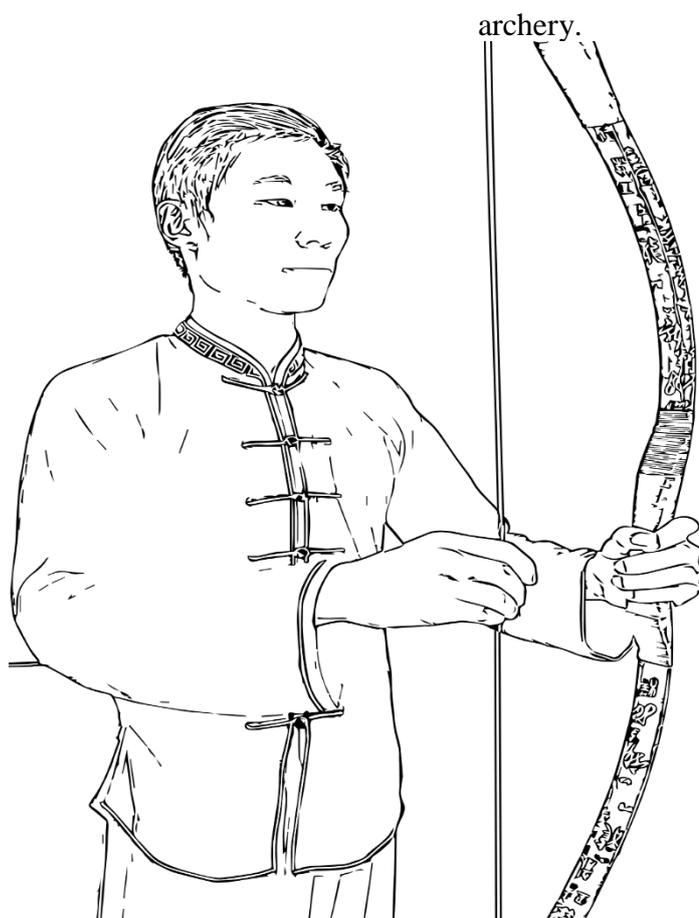


Figure 55 Mediterranean shooting style zhi xian
Mediterranean shooting style zhi xian

1. Finger Position: Ensure that the fingertips of the index finger, middle finger, and ring finger are evenly in contact with the bowstring, and are positioned at the correct joint locations to ensure even distribution of force and stable pressure.

2. Apply force evenly: The three fingers should exert force evenly when pulling the string, avoiding one finger exerting too much or too little force, so as not to affect the draw length of the bowstring and the stability of the arrow's flight.

3. Contact point of the bowstring: The contact point of the bowstring with the fingers should be consistent, and each time the string is pulled, it should be in the same position as much as possible to form a stable muscle memory and action pattern.

4. Relax your fingers: When not pulling the strings, your fingers should remain naturally relaxed to avoid excessive tension that can lead to fatigue and affect the flexibility of your movements.

5. Avoiding injuries: Be careful not to rub the bowstring too much with your fingers to avoid skin abrasions or injuries. If necessary, you can wear appropriate finger protection gear.

6. Coordination with the action of drawing the bow: The action of holding the string should be coordinated with the subsequent actions of drawing the bow, aiming, and releasing, forming a smooth overall movement.

Practice and Habit: Develop correct and stable string-holding habits through a lot of practice to improve the accuracy and consistency of archery.

2) Mediterranean shooting style **jiā shì** The precautions include :



Figure 56 Mediterranean shooting style jia shi

Hold the bow handle with your left hand and place the arrow on the left side of the bow. The groove at the end of the arrow should be placed on the bowstring with the arrowhead facing up. Extend your left thumb naturally and press the pad against the left side of the arrow shaft, while the other four fingers gently grip the arrow shaft. The arrow shaft should rest against the fleshy part of the left hand, keeping it perpendicular to the bowstring. During the nocking process, the left hand should be firm but not overly tense to ensure the arrow remains stable for subsequent actions without hindering the smoothness of drawing and shooting the arrow.

Here are some tips for Mediterranean style shooting jiashi:

You are a translation expert, please translate the following text from Chinese to English, and keep the translation in JSON format:

Arrow Placement: Ensure the arrow is placed in the appropriate and stable position, typically on the arrow rest of the bow, to avoid any wobbling or shifting during the shooting process.

Grip strength: The grip strength should be moderate when nocking the arrow, not too loose to prevent the arrow from falling off, nor too tight to affect the arrow's flight posture.

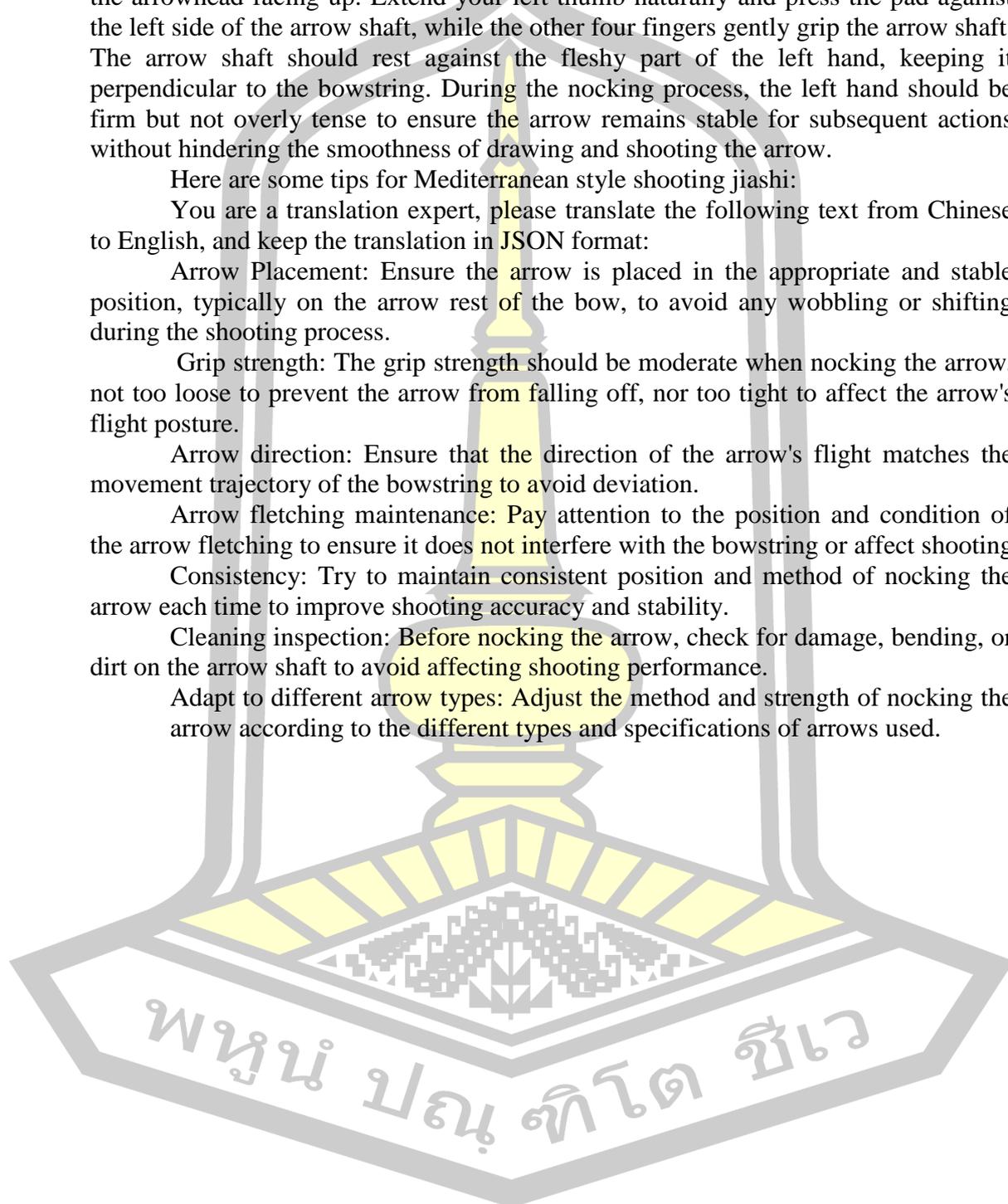
Arrow direction: Ensure that the direction of the arrow's flight matches the movement trajectory of the bowstring to avoid deviation.

Arrow fletching maintenance: Pay attention to the position and condition of the arrow fletching to ensure it does not interfere with the bowstring or affect shooting.

Consistency: Try to maintain consistent position and method of nocking the arrow each time to improve shooting accuracy and stability.

Cleaning inspection: Before nocking the arrow, check for damage, bending, or dirt on the arrow shaft to avoid affecting shooting performance.

Adapt to different arrow types: Adjust the method and strength of nocking the arrow according to the different types and specifications of arrows used.



3) Mediterranean shooting style zheng kuo

The standard action is as follows :

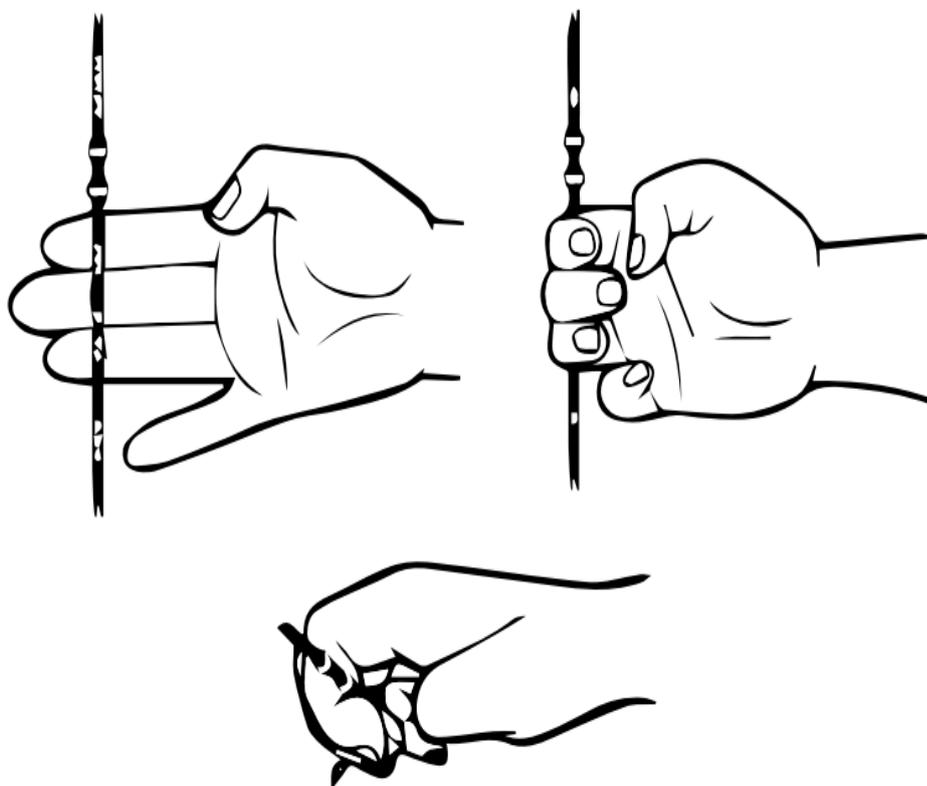


Figure 57 Mediterranean style zhneghkuo hand shape diagram



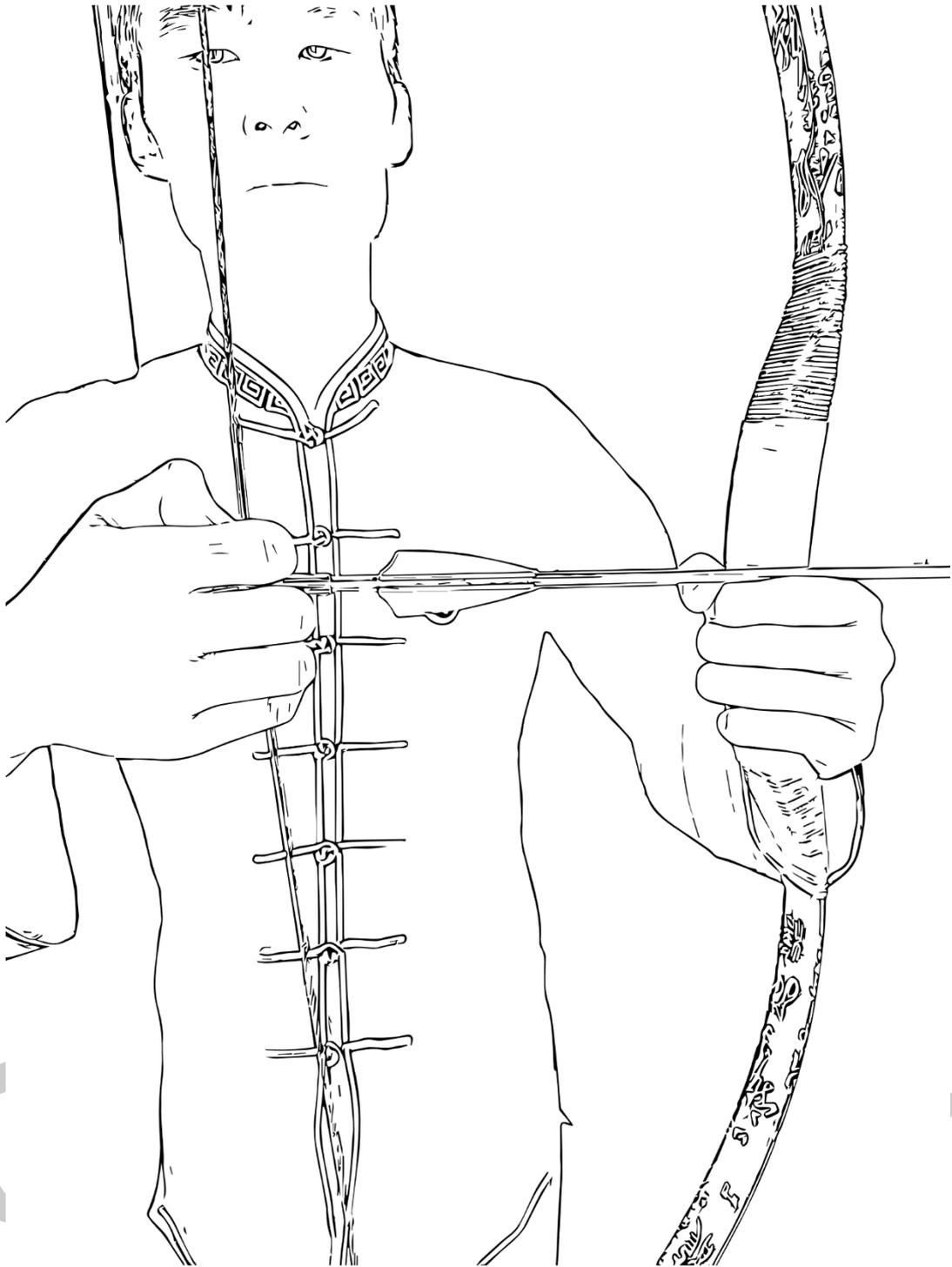


Figure 58 Mediterranean shooting style zheng ku

Hold the bow with your left hand, place the arrow on the bowstring, and accurately pin the tail of the arrow at the predetermined position on the bowstring. The tassel at the tail of the arrow is tightly attached to the bowstring, without any deviation or looseness. The arrow shaft is kept perpendicular to the bowstring to

ensure even transmission of force, and the arrow can fly in the expected direction when deployed.

After completing the forehand stroke, it is necessary to check again whether the combination of the arrow and bowstring is stable, in preparation for subsequent bow pulling and archery.

Mediterranean shooting style zheng kuo Some precautions :

1. Matching of arrow nock and bowstring: Ensure that the groove of the arrow nock matches the size and shape of the bowstring to ensure stability and accuracy during shooting.

2. Positioning of nock: Place the nock of the arrow accurately on the designated position of the bowstring, usually the center of the bowstring or a specific marked point, to maintain consistency in shooting.

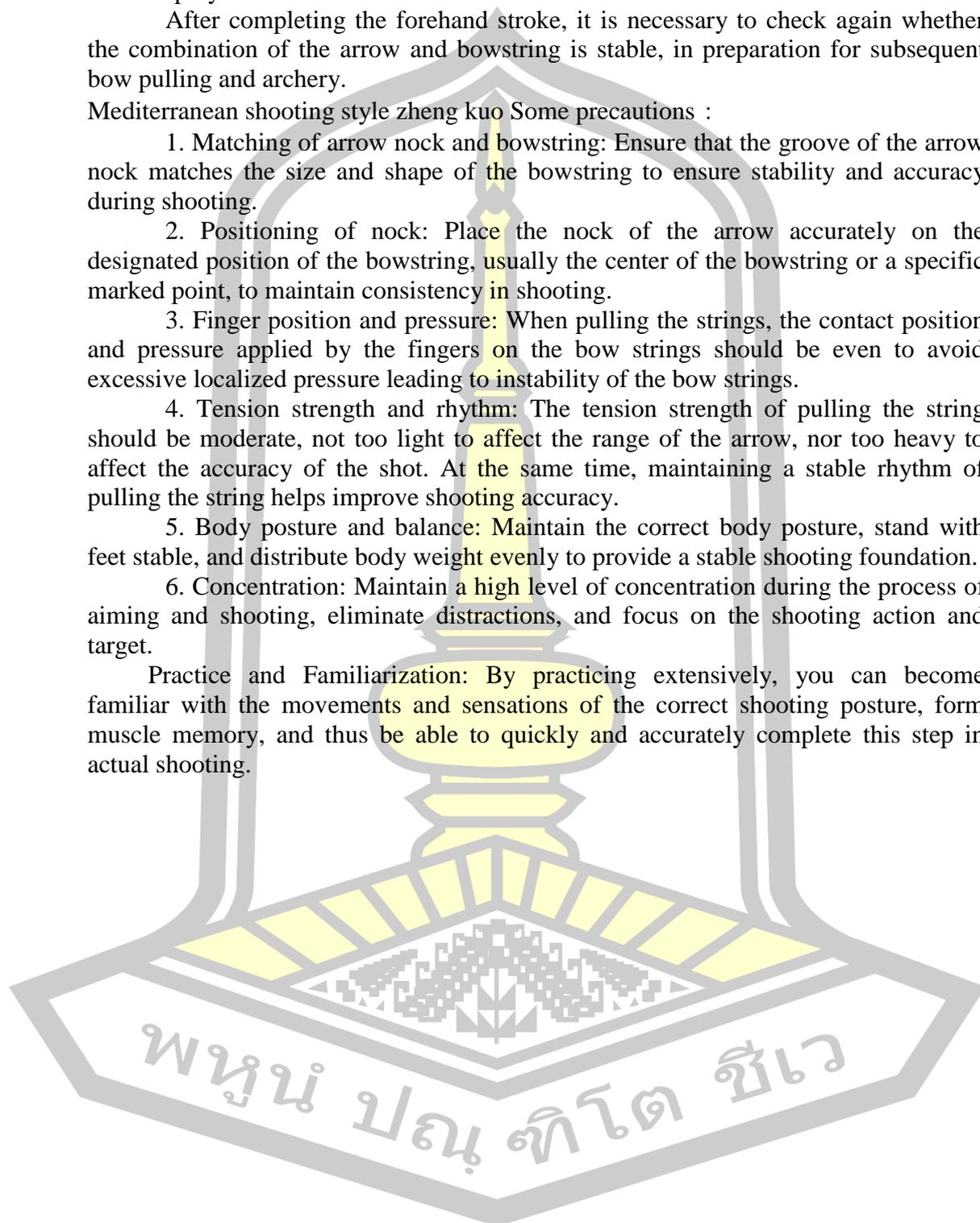
3. Finger position and pressure: When pulling the strings, the contact position and pressure applied by the fingers on the bow strings should be even to avoid excessive localized pressure leading to instability of the bow strings.

4. Tension strength and rhythm: The tension strength of pulling the string should be moderate, not too light to affect the range of the arrow, nor too heavy to affect the accuracy of the shot. At the same time, maintaining a stable rhythm of pulling the string helps improve shooting accuracy.

5. Body posture and balance: Maintain the correct body posture, stand with feet stable, and distribute body weight evenly to provide a stable shooting foundation.

6. Concentration: Maintain a high level of concentration during the process of aiming and shooting, eliminate distractions, and focus on the shooting action and target.

Practice and Familiarization: By practicing extensively, you can become familiar with the movements and sensations of the correct shooting posture, form muscle memory, and thus be able to quickly and accurately complete this step in actual shooting.



4).Mediterranean shooting style shen gu

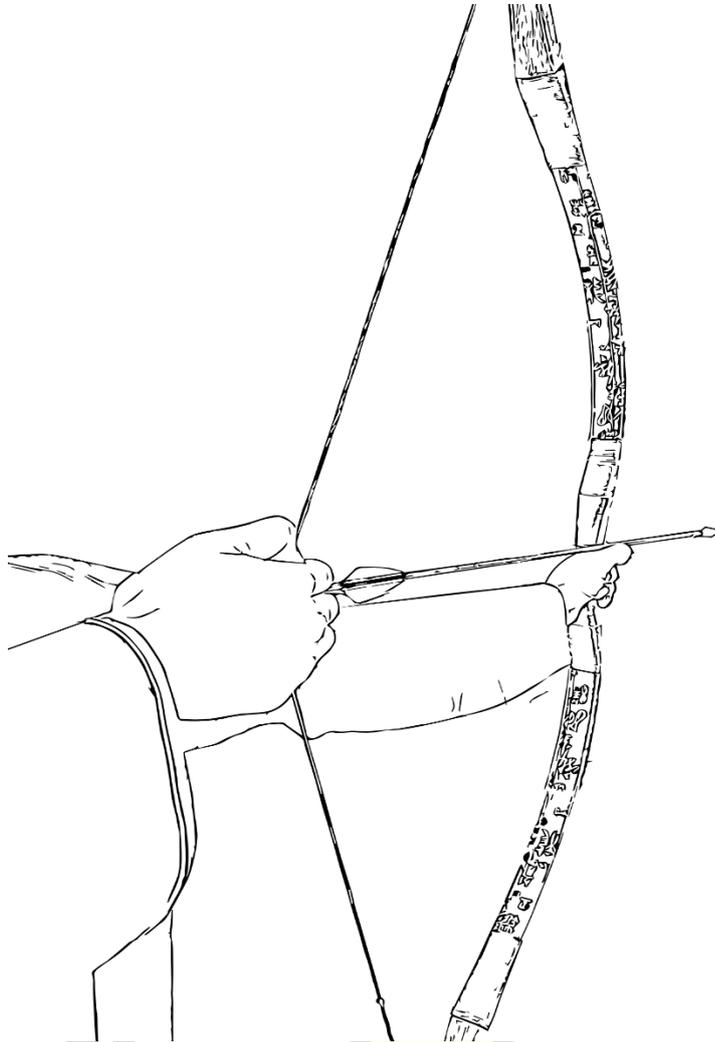


Figure 59 Mediterranean shooting style shen gu

After completing a series of previous actions, the archer needs to keep the body stable, stand firmly on the ground with both feet, and evenly distribute the center of gravity. Keep the head upright, focus on the target, and have a determined gaze. The left arm holding the bow should be stable, with the elbow slightly bent to ensure that the position and angle of the bow remain unchanged. The fingers of the right hand hooking the string check whether the bowstring is in the correct position and whether the contact between the bowstring and the fingers is tight and even. Confirm that the nock of the arrow is securely placed on the bowstring, without any signs of looseness or deviation. The muscles of the body should maintain moderate tension, providing enough strength to maintain the posture and prepare for the shot, without being too stiff to affect the smoothness of subsequent actions. The final check of the standardized action is to inspect and confirm the entire archery posture and equipment to ensure the accuracy and safety of the shot.

Here are some tips for proper Mediterranean shooting form:

You are a translation expert, please translate the following text from Chinese to English, please keep the translation in JSON format:

1. Stable body posture: Keep your body upright and stable, with feet shoulder-width apart to provide a solid foundation for support.

2. Even distribution of strength: During the inspection and solidification process, the strength of the whole body should be evenly distributed to avoid excessive force in certain areas leading to imbalance in movement.

3. Standardize hand movements: The movements of both hands should be standardized and coordinated to ensure the accuracy and stability of the inspection.

4. Perception of bow string tension: Clearly perceive the tension of the bow string and adjust the pressure and angle of the bow according to the tension.

5. Breathing control: During the appraisal process, pay attention to breathing smoothly to avoid affecting the stability of actions due to rapid breathing.

6. Concentration: Maintain a high level of concentration and focus on every detail of the audit.

7. Equipment check: Before shooting, carefully inspect the bow and arrow equipment to ensure they are in good condition, check for any damage to the bowstring, etc.

Gradual progression: When practicing judo, one should progress gradually, gradually increasing the difficulty and intensity to avoid excessive fatigue or injury.

5) Mediterranean shooting style ju gong

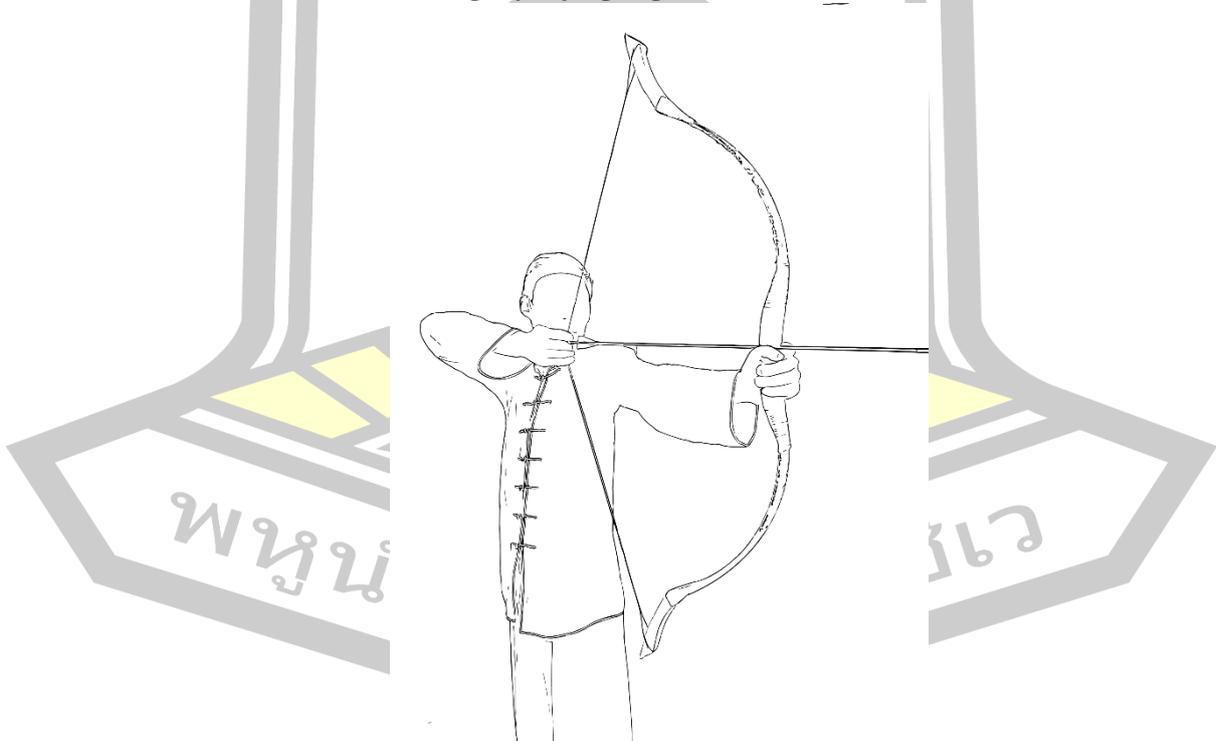


Figure 60 Mediterranean shooting style ju gong

Stand naturally with feet shoulder-width apart, body sideways, and toes pointing towards the target. Grip the bow handle with the left hand, arm extended naturally, raising the bow to eye level. Keep the left hand elbow slightly bent, not overly straight or bent. Hook the bowstring with three fingers of the right hand, while keeping the right arm relaxed and hanging naturally. Distribute body weight evenly on both feet to maintain stability and balance. Keep the head upright and eyes focused on the target.

Keep your body upright and stable, stand sideways, with your feet parallel or slightly turned out, and distribute your weight evenly between your feet to provide a solid foundation for subsequent movements. Grip the bow handle with your left hand, keeping your arm straight but not overly stiff, and maintain a natural bend in the elbow to provide some flexibility and cushioning. Use mainly the strength of your arm to lift the bow, avoiding excessive force from the shoulders or other parts of the body to maintain coordination for subsequent movements. During the lifting of the bow, keep your eyes focused on the target direction, maintain concentration, and prepare for aiming. The lifting motion should be smooth and steady, avoiding sudden acceleration or pauses to maintain balance and stability of the body and bow. Lift the bow to a position parallel to or slightly above your eyes, and try to keep the height consistent each time you lift the bow to form a stable movement pattern. Keep a relaxed mindset to avoid muscle stiffness or deformation of movements caused by tension.

Here are some tips for the Mediterranean shooting method ju gong:

1. Body balance: Stand with both feet firmly on the ground, keep your body's center of gravity stable, and avoid losing balance when drawing the bow.
2. Arm movement: The movement of lifting the bow with the arm should be natural and smooth, avoiding stiffness and abruptness.
3. Power distribution: Distribute the strength of your arms, shoulders, and back reasonably, and avoid relying excessively on any one part.
4. Draw height: Determine the appropriate draw height based on the distance to the target and your own comfort during shooting.
5. Maintain eye focus: Keep your eyes on the target at all times to ensure that your line of sight stays on target throughout the process of drawing the bow.
6. Breathe steadily: Maintain steady breathing to avoid affecting the stability of the body due to rapid breathing or breath-holding.
7. Consistency in movement: Try to maintain consistent movements each time you draw the bow to improve shooting accuracy and stability.

Equipment adjustment: Ensure that the bowstring, arrow rest, and other equipment are in good condition, without any looseness or damage.

6).Mediterranean shooting style yin gou



Figure 61 Mediterranean shooting style yin gou

The yin gou correct movements for the Mediterranean shooting style are as follows:

After completing the arching action and stabilizing the posture, begin to draw the bow. Hook the bowstring with three fingers of the right hand, and use the back muscles to pull the right arm back, gradually raising and moving the right hand elbow backward, and bending the arm. During the drawing process, keep the right hand wrist straight, without bending or twisting. At the same time, slightly turn the body to the right, shift the center of gravity slightly backward to maintain balance. Draw the string to a position near the corner of the mouth or jaw, the specific position depends on personal habits and comfort, but ensure consistency in each action. The entire drawing action should be smooth and steady, with even increasing force, avoiding sudden exertion or jerky movements.

When practicing yin gou Mediterranean style archery, pay attention to the following points:

1. Choose the right location: Make sure the practice or shooting range is open, free of people walking around, and far away from buildings, roads, and other potentially dangerous areas.
2. Wear protective gear: such as arm guards, finger tabs, etc., to protect your arms and fingers from potential injuries caused by the recoil of the bowstring.
3. Equipment Inspection: Before each shot, carefully inspect the bow, string, arrows, and other equipment for any damage, aging, or looseness. If there are any issues, repair or replace them in a timely manner.
4. Follow guidance: If you are a beginner, make sure to practice archery under the supervision of an experienced coach or instructor, following the correct methods and steps strictly.
5. Pay attention to the people around you: Make sure that everyone is at a safe distance and clearly inform them of the shooting area to prevent others from entering by mistake.
6. Control the force: When drawing the bow, exert force moderately according to your own strength and the performance of the bow to avoid overstretching the bowstring, which may lead to loss of control or equipment damage.
7. No shooting when fatigued: Stop shooting when feeling tired or physically exhausted to avoid accidents caused by lack of concentration.
8. Understand the weather impact: Adverse weather conditions such as strong winds, heavy rain, etc. may affect the accuracy and safety of shooting, so it is advisable to avoid shooting under such conditions.
9. Storage safety: When not in use, bows and arrows should be stored properly in a place where children and unauthorized persons cannot access them.

7) Mediterranean shooting style safang

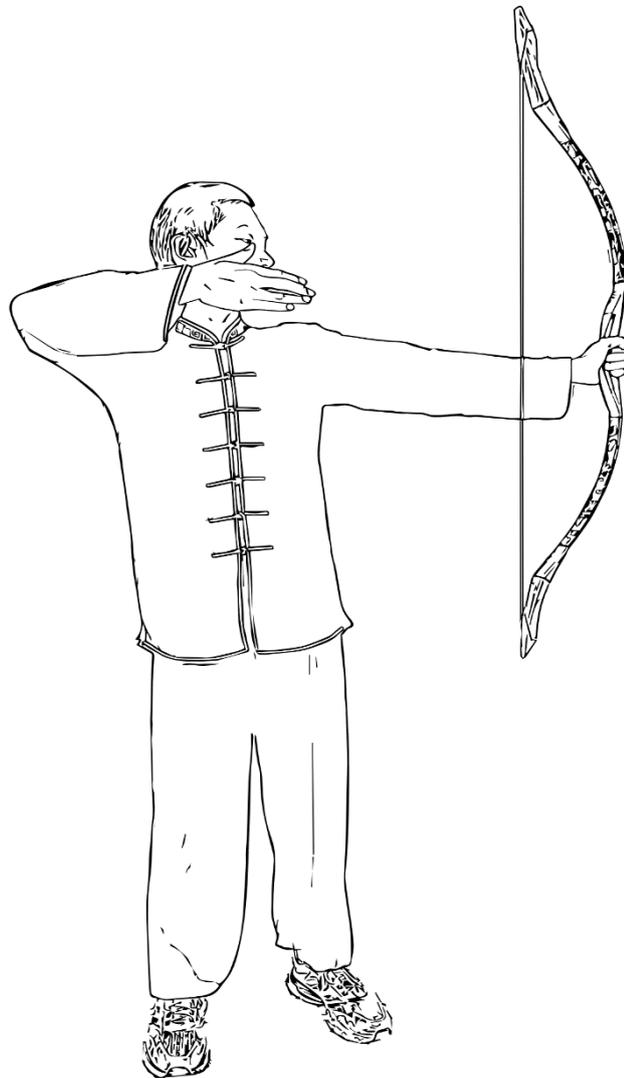


Figure 62 Sa fang diagram of Mediterranean shooting method

The sa fang standard movements of the Mediterranean shooting technique are as follows :

When aiming and preparing to release the arrow, the index finger, middle finger, and ring finger of the right hand should be relaxed evenly and naturally, allowing the bowstring to slide quickly out from between the fingers. At the moment of release, the fingers should not deliberately pluck the bowstring, but rather let the bowstring detach on its own in a state of relaxed muscles. At the same time, maintain a stable posture of the body and arm, avoiding any shaking or deformation caused by the release action. After releasing the arrow, the right hand should naturally lower down, maintaining balance and stability of the body, and continue to watch the

trajectory of the arrow. It is important to note that the key to the release action lies in being natural and coordinated, reducing unnecessary muscle tension and interference, in order to achieve precise shooting.

Some precautions for Mediterranean shooting method Safang :

1. Release the fingers naturally: When releasing, the fingers should naturally and smoothly let go of the bowstring, avoiding consciously adding force or suddenly letting go.

2. Action Consistency: Strive to maintain consistency in the timing, intensity, and manner of each release action, including the timing of finger release.

3. Avoid distractions: When playing, eliminate external distractions and focus your attention on the contact and movement of your fingers on the strings and bow.

4. Do not swing your arms deliberately: After releasing the shot, your arms should follow naturally without deliberately swinging them, so as not to affect shooting accuracy.

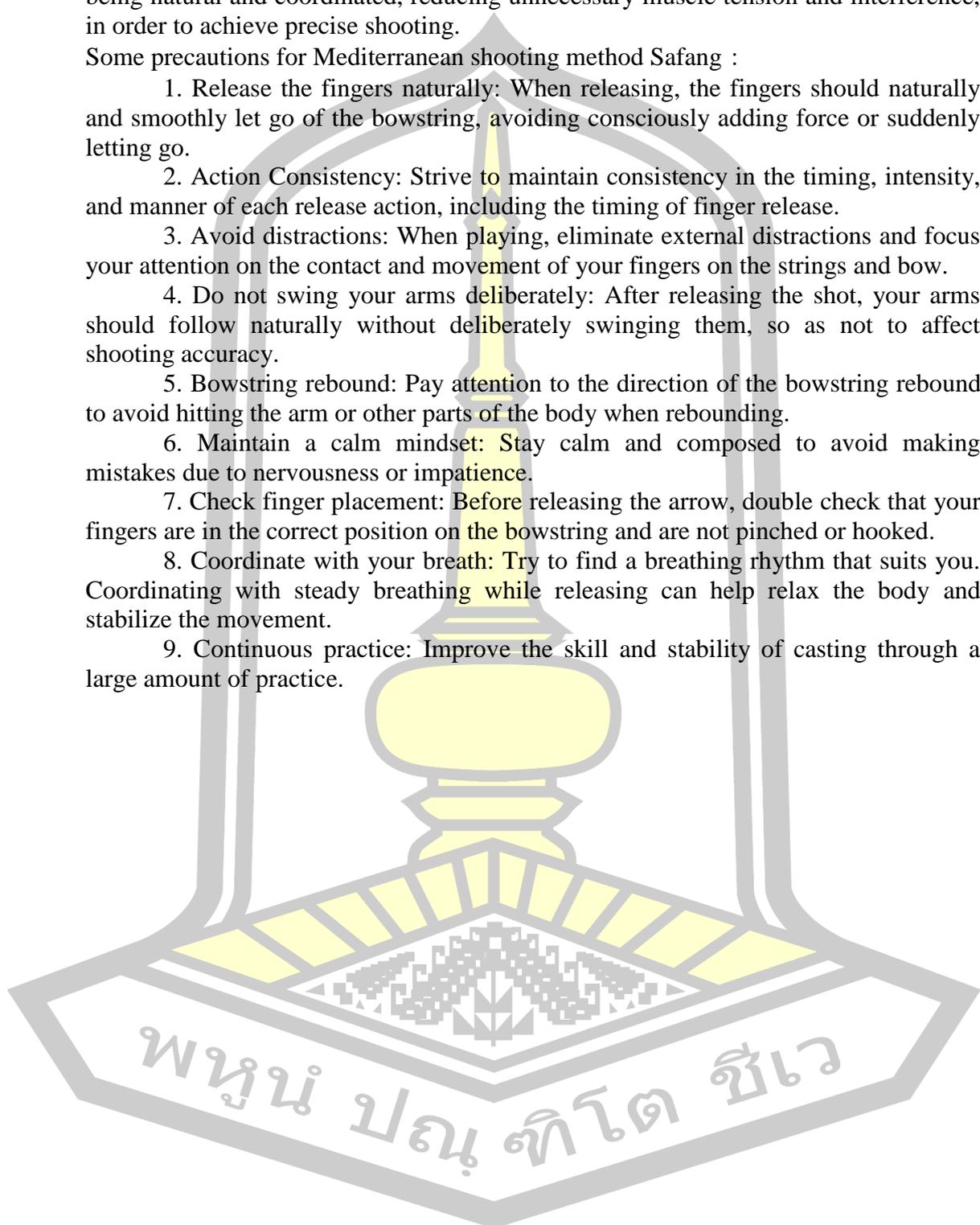
5. Bowstring rebound: Pay attention to the direction of the bowstring rebound to avoid hitting the arm or other parts of the body when rebounding.

6. Maintain a calm mindset: Stay calm and composed to avoid making mistakes due to nervousness or impatience.

7. Check finger placement: Before releasing the arrow, double check that your fingers are in the correct position on the bowstring and are not pinched or hooked.

8. Coordinate with your breath: Try to find a breathing rhythm that suits you. Coordinating with steady breathing while releasing can help relax the body and stabilize the movement.

9. Continuous practice: Improve the skill and stability of casting through a large amount of practice.



8) Mediterranean shooting method Liangong

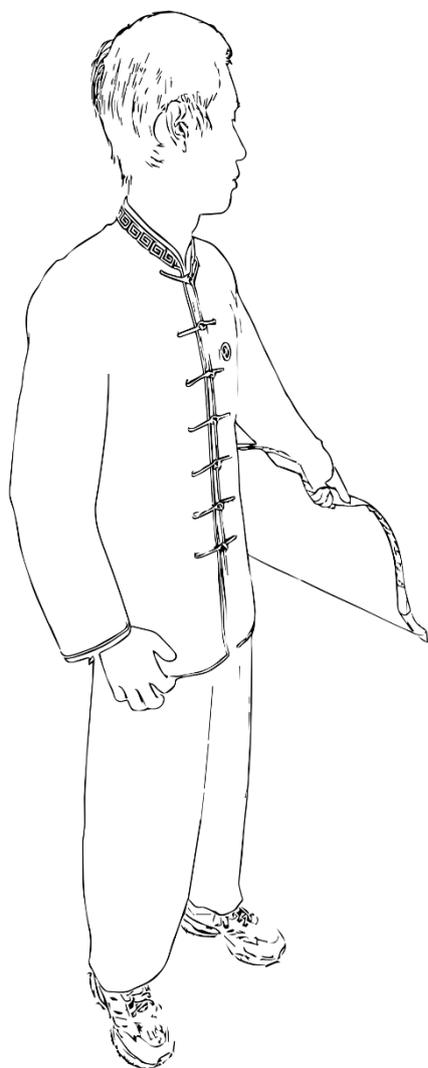


Figure 63 Mediterranean style Liangong diagram (1)



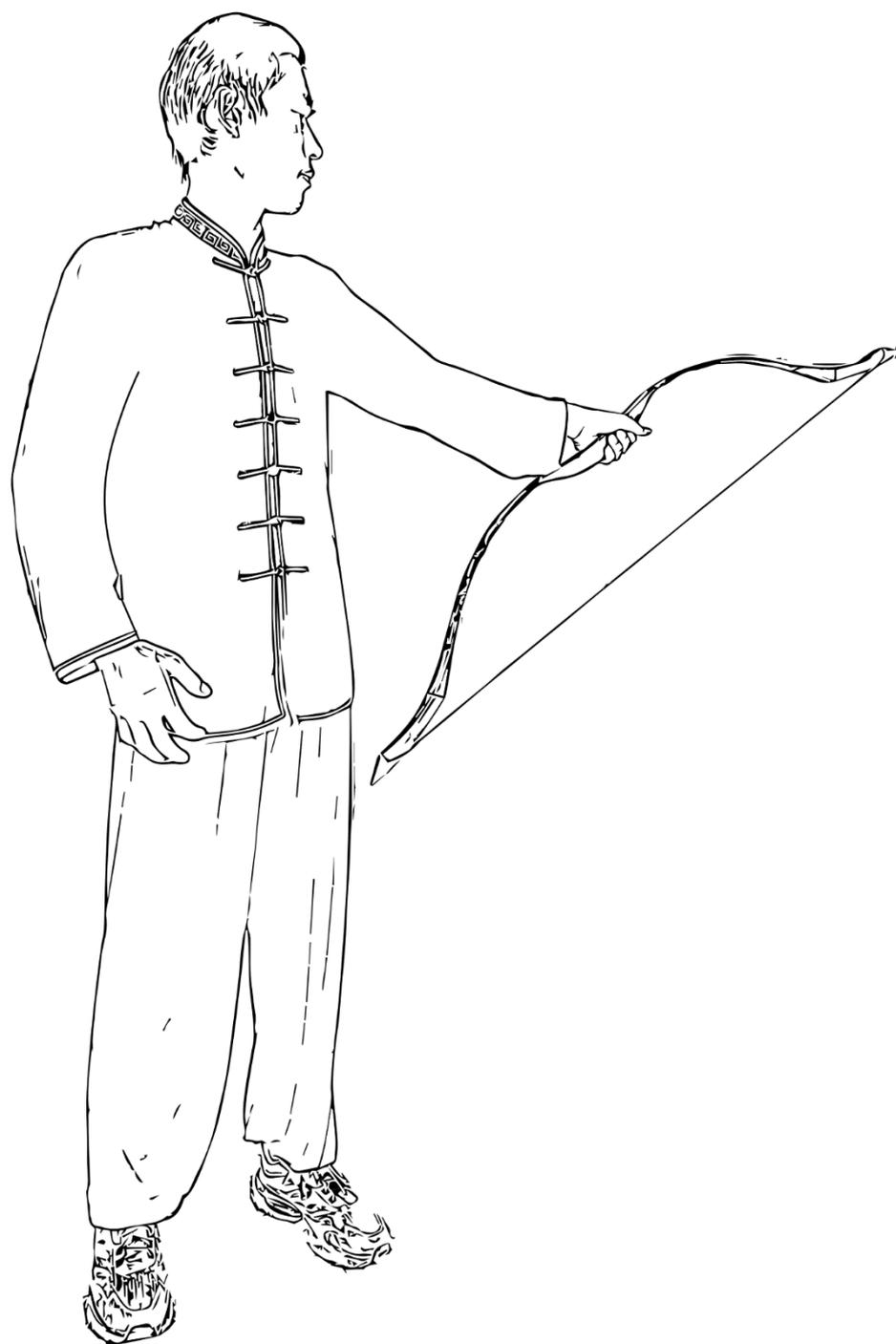


Figure 64 Mediterranean style Liangong diagram (2)

The standard movements of Mediterranean-style liangong are as follows:

After completing the draw and releasing the arrow, begin the process of unstringing the bow. Let the right hand naturally hang down, relax the fingers and arm, and hold the bow handle with the left hand. Slowly lower the bow so that the bow is parallel to the ground. Stand up straight, with feet firmly planted and weight evenly distributed. Remove the arrow from the bowstring and place it properly. Organize the archery equipment, such as the bowstring and protective gear. The entire process of unstringing the bow should be smooth and orderly, showing care for the equipment and respect for the sport of archery.

Here are some tips for practicing Mediterranean-style archery liangong:

1. Safety first: Ensure the surrounding environment is safe, and there are no other individuals near potential danger zones.
 2. Relax the bowstring: Slowly relax the bowstring to avoid sudden release that may cause the bowstring to snap back and cause injury.
 3. Correct posture: Keep your body upright, stand with your feet stable to maintain balance.
 4. Handle with care: Place the bow flat and carefully in a safe location where it is unlikely to be bumped or damaged.
 5. Check the bowstring: After stringing the bow, carefully inspect the bowstring for any damage, wear, or deformation.
 6. Cleaning and maintenance: If necessary, clean and perform simple maintenance on the bow to remove dirt and sweat.
 7. Neat storage: Properly store related accessories, such as arrows and protective gear, to avoid loss or damage.
- Keep children away: Make sure children cannot access the bow and arrows to prevent accidents.
8. Follow the guidelines: Operate the bow strictly according to the standards learned and the coach's instructions.

5.4. Pinch Arrow Shooting Method

Pinch shooting is a more primitive and simple way of archery. Pinch shooting is a relatively ancient archery technique. Its historical origins can be traced back to ancient times, where it was already present in some primitive tribes and early civilizations. This shooting method is relatively simple and straightforward, requiring no complex equipment or skills. In ancient times, people in some regions used pinch shooting for hunting and self-defense due to resource and technological limitations. However, as archery technology continued to develop and improve, pinch shooting was gradually replaced by other more advanced, powerful, and accurate shooting techniques. Nevertheless, in certain specific environments and cultures, pinch shooting is still preserved and passed down, becoming a unique archery tradition.

Advantages: Easy to get started: For beginners in archery, this method is relatively easy to understand and try. The equipment requirements are simple, without the need for specially designed arrow tails or complex bowstring structures.

Disadvantages: Poor accuracy: Due to directly pinching the arrow with fingers, the control over the arrow is not precise enough, affecting the accuracy of shooting.

Limited range and power: It is difficult to fully utilize the power of the bow, resulting

in relatively short arrow flight speed and range. Safety risks: Fingers are close to the front end of the arrow, making it easy to get injured during shooting. Not conducive to rapid shooting: The preparation actions after each shot are more complex, making it difficult to achieve rapid consecutive shooting. Limited posture: This shooting method may restrict the natural posture and movements of the body, affecting overall stability and coordination.

1) Pinch Arrow Shooting Method zhixian :

Figure 5 Pinch Arrow Shooting Method zhi xian

Explanation of Nocking Action: Lightly touch the inside of the bowstring with the first joint of the right thumb, hook the bowstring from the outside with the fingertip of the index finger, and keep the other three fingers naturally curved and relaxed. The thumb and index finger should form a stable 'nocking' action.

Key point: The tension should be moderate, not too loose to cause the string to slip, nor too tight to affect the subsequent string pulling action.

Difficulty: When holding the string, the palm of the hand should be slightly facing inward, the wrist naturally extended, and the arm should maintain a certain angle with the bowstring to prepare for the subsequent pulling action. The entire action of holding the string should be stable, natural, and smooth.

Here are some tips for using the pinch draw technique:

1. Finger position: Ensure that the fingers grip the arrow accurately and steadily, usually near the tail end of the arrow close to the fletching, to maintain effective control of the arrow.

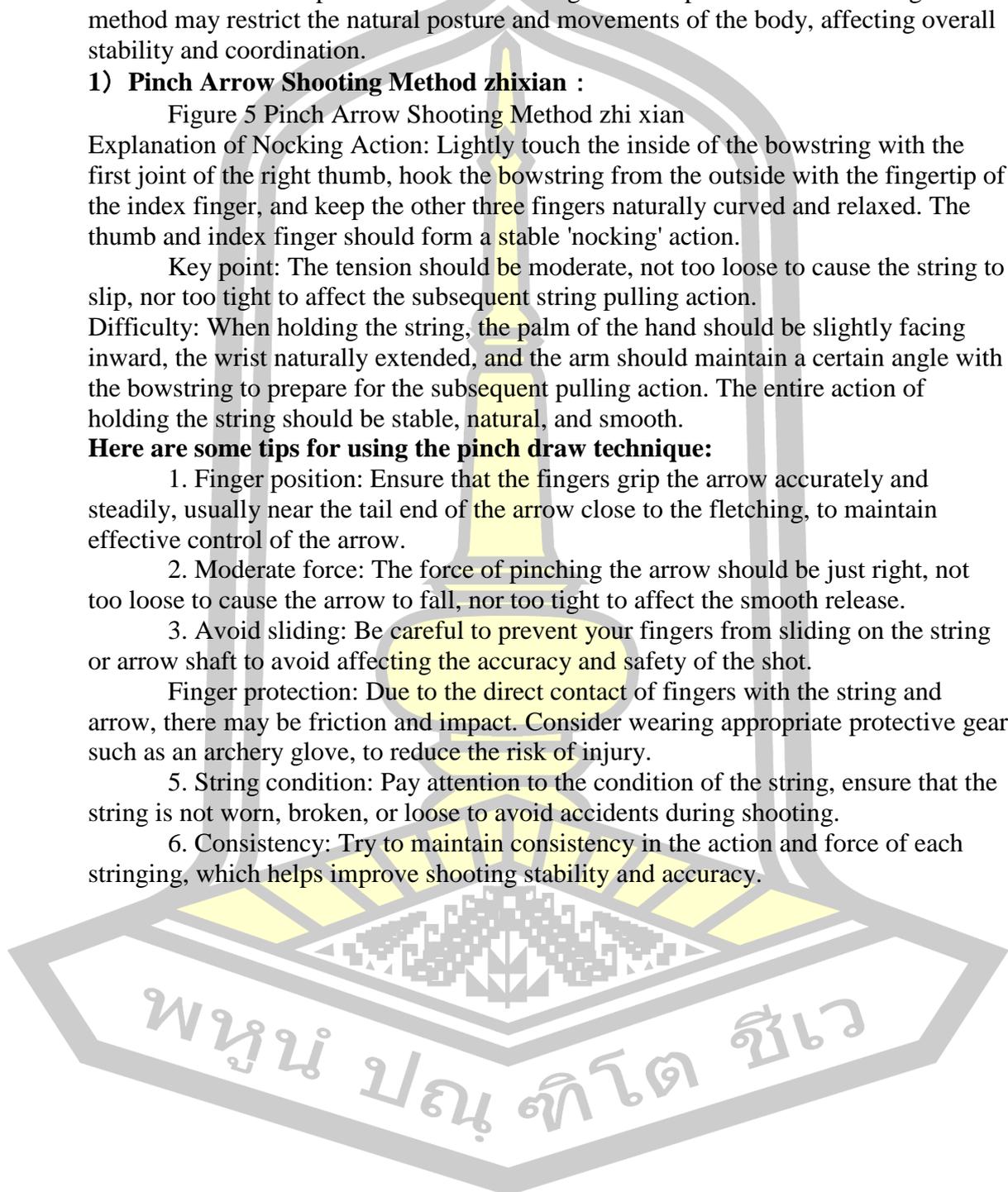
2. Moderate force: The force of pinching the arrow should be just right, not too loose to cause the arrow to fall, nor too tight to affect the smooth release.

3. Avoid sliding: Be careful to prevent your fingers from sliding on the string or arrow shaft to avoid affecting the accuracy and safety of the shot.

Finger protection: Due to the direct contact of fingers with the string and arrow, there may be friction and impact. Consider wearing appropriate protective gear, such as an archery glove, to reduce the risk of injury.

5. String condition: Pay attention to the condition of the string, ensure that the string is not worn, broken, or loose to avoid accidents during shooting.

6. Consistency: Try to maintain consistency in the action and force of each stringing, which helps improve shooting stability and accuracy.



2) Pinch Arrow Shooting Method jiā shi、

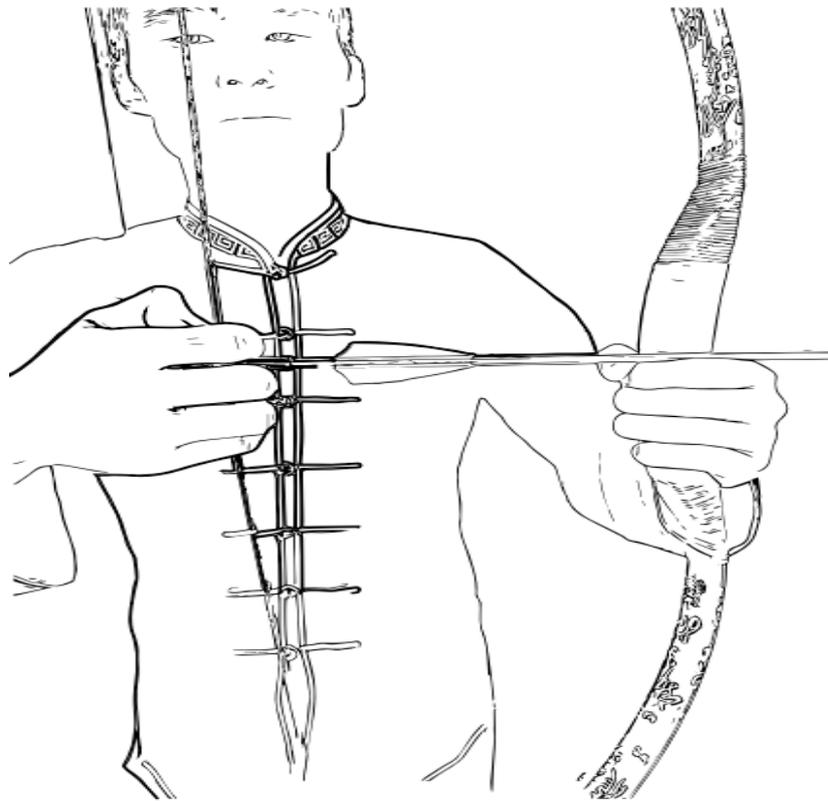


Figure 65 Pinch Arrow Shooting Method jiā shi

Hold the bow handle with your left hand and place the arrow on the left side of the bow. The groove at the end of the arrow should be hooked onto the bowstring, with the arrowhead facing up. Extend your left thumb naturally and press the pad against the left side of the arrow shaft, while the other four fingers curl naturally to lightly grip the arrow shaft. The arrow shaft should rest against the fleshy part of the left hand between the thumb and index finger, keeping the arrow shaft perpendicular to the bowstring. During the nocking process, the left hand should be steady but not overly tense to ensure the arrow remains stable for subsequent actions without hindering the smoothness of drawing and shooting the arrow.

Here are some tips for the shooting technique of pinch draw:

1. Arrow position: Ensure that the arrow is held in a stable and accurate position in the hand, usually by lightly gripping the arrow near the tail and close to the fletching with the fingers.
2. Control the Strength: The strength of drawing the bow should be moderate, ensuring that the arrow will not slip and not too tight to affect the release.
3. Finger position: Keep your fingers naturally curved and close to the arrow shaft to avoid stiff posture affecting operation.
4. Arrow fletching orientation: Pay attention to the orientation of the arrow fletching to avoid unnecessary interference with the bowstring during shooting.
5. Stability: Keep the hand holding the bow stable, reduce shaking, to improve shooting accuracy.

6. Check the arrow shaft: Before nocking the arrow, inspect the arrow shaft for any damage, bending, or other defects to ensure safe shooting.

7. Adapt to the environment: Adjust the way and strength of nocking the arrow according to different shooting environments and conditions.

3) Pinch Arrow Shooting Method zheng kuo

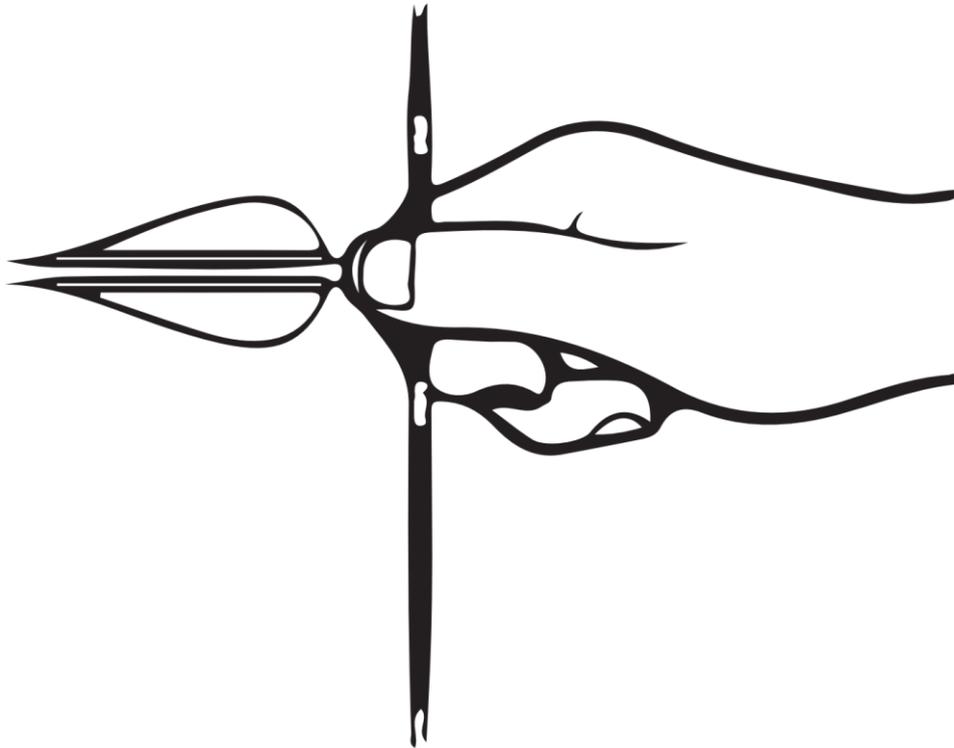


Figure 66 Pinch Arrow Shooting Method zheng kuo

Hold the bow in your left hand, with the thumb, index finger, and middle finger pinching the arrow's tail. Place the arrow on the bowstring, ensuring that the arrow nock is securely positioned on the predetermined location of the bowstring. The arrow nock should fit tightly against the bowstring, without any tilting or looseness. Keep the arrow shaft perpendicular to the bowstring to ensure that the force is evenly transferred to the arrow and that the arrow flies in the intended direction when released. After completing the nocking action, double-check the connection between the arrow and the bowstring to prepare for the subsequent drawing and shooting.

Here are some tips for the Zheng kuo shooting technique:

1. Firm attachment: Ensure that the attachment is securely installed and will not loosen or detach during shooting.
2. Matching nock and arrow: Use a nock that matches the arrow being shot to ensure stability and accuracy in shooting.
3. Accurate Positioning: When nocking the arrow, it should be placed in the correct position to ensure good contact between the arrow and the bowstring, allowing for smooth power transfer.

4. Check for wear: Regularly inspect the wear of the notch, and replace it in a timely manner if there is severe wear to avoid affecting shooting performance and safety.

5. Cleaning and maintenance: Keep the chute clean to avoid debris affecting its performance and service life.

6. Adapt to the climate: The performance of the bow may vary under different climate conditions, so pay attention to adjusting your shooting technique.

7. Coordination of both hands: During the process of nocking the arrow, both hands should coordinate with each other to avoid damaging the nock or causing the arrow to be misaligned due to improper operation.

4) Pinch Arrow Shooting Method shen gu,



Figure 67 Pinch Arrow Shooting Method shen gu

The essence of pinching arrow shooting lies in the balance between stability and agility. Stability does not refer to the stability of body posture, but rather the concentration of one's mind, like a mountain that cannot be shaken. Within this stability, there must also be a fluidity like water, allowing the arrow to be on the fully drawn bowstring, as if containing a burst of vitality about to erupt. The archer stands like a pine tree, with feet apart at shoulder width, toes slightly inward to stabilize the lower body. The left hand holds the bow, with the thumb, index finger, and middle finger of the right hand gripping the bowstring, forming a stable pinching arrow posture. At this moment, the eyes are slightly closed, taking deep breaths several times, letting the mind sink into a peaceful abyss, discarding all distractions, with only the image of the target slowly emerging in the mind.

Here are some tips for the shooting technique of pinch draw shengu:

1. **Body Balance:** Maintain the balance and stability of the body, stand firmly on both feet, distribute weight evenly, and avoid losing balance during the inspection process.

Hand position: The finger position for nocking the arrow should be correct and natural, ensuring sufficient but not excessive control over the arrow.

3. **Moderate force:** The force applied when shooting should be moderate, ensuring the stability of the arrow while not affecting the subsequent release action due to excessive force.

4. **Focus:** Keep your eyes fixed on the target, maintain concentration, and improve the accuracy of the inspection.

5. **Breathing adjustment:** Pay attention to the rhythm of breathing, avoid affecting the stability of the fixation due to rapid or irregular breathing.

6. **Smooth Movement:** The entire action should be smooth and coherent, avoiding any jerky or abrupt transitions in movement.

7. **Equipment check:** Carefully inspect the bow and arrow equipment before shooting, including arrows, strings, and bows, to ensure there is no damage or abnormalities.

8. **Environmental awareness:** Pay attention to the surrounding environment to ensure that there are no interfering factors affecting aiming and shooting.

5) Pinch Arrow Shooting Method ju gong、

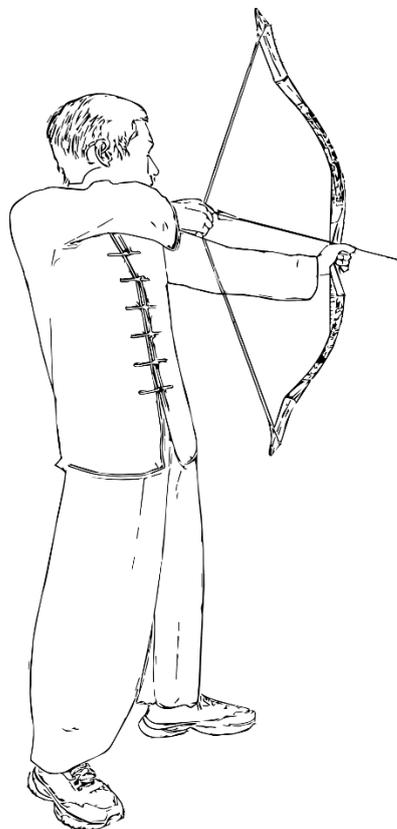


Figure 68 Pinch Arrow Shooting Method yin gou

The pinching arrow shooting technique is a sophisticated and profound skill in archery. After completing the crucial step of raising the bow, the archer's state of mind needs to be even more calm, as if merging with the surrounding world, where every breeze and falling leaf cannot disturb even a bit. The next step is the delicate process of nocking the arrow. The archer lightly pinches the arrow with the thumb and index finger, which is not just a physical contact, but also a mysterious connection established between the mind and the arrow. With almost imperceptible force, they slowly push the arrow into the bow's nock, ensuring a perfect fit between the arrow shaft and the bow, without any deviation. At this moment, the archer seems to feel the power contained within the arrow and its eagerness to pierce through the vast sky.

As the breathing gradually slows down, the archer begins to adjust their posture, with both feet firmly rooted on the ground, legs slightly bent to increase stability. At the same time, their upper body leans slightly back, with the back and neck

Form a smooth curve to ensure efficient transmission of force and avoid injuries caused by improper posture.

Here are some tips for the shooting technique of "Arrow shooting method" (jugong):

1. Keep your body stable: Stand firmly with both feet, keep your body's center of gravity stable, and avoid swaying or losing balance due to the action of drawing the bow.
2. Arm extension: When lifting the bow, the arm should naturally extend straight, without bending or excessive tension, to ensure smooth transmission of power.
3. Power Control: Use moderate force to draw the bow, avoiding excessive force that may cause muscle fatigue or deviation in form.
4. Sight alignment: Keep your eyes on the target to ensure that the direction of the bow is aligned with the target.
5. Smooth Movement: The action of raising the bow should be smooth and steady, avoiding sudden stops or shaking.
6. Moderate height: Choose the appropriate height for drawing the bow based on your comfort and the distance to the shooting target.
7. Coordination of Breathing: Pay attention to the rhythm of breathing, avoid holding your breath during the process of drawing the bow, and adjust your breathing at the appropriate time.
8. Check equipment: Before shooting, check the bow and arrows to ensure that all components are undamaged and in good condition for safe shooting.
9. Concentration: Maintain a high level of mental focus, eliminate distractions, and concentrate on the actions of drawing the bow and shooting.

6) Pinch Arrow Shooting Method yin gou

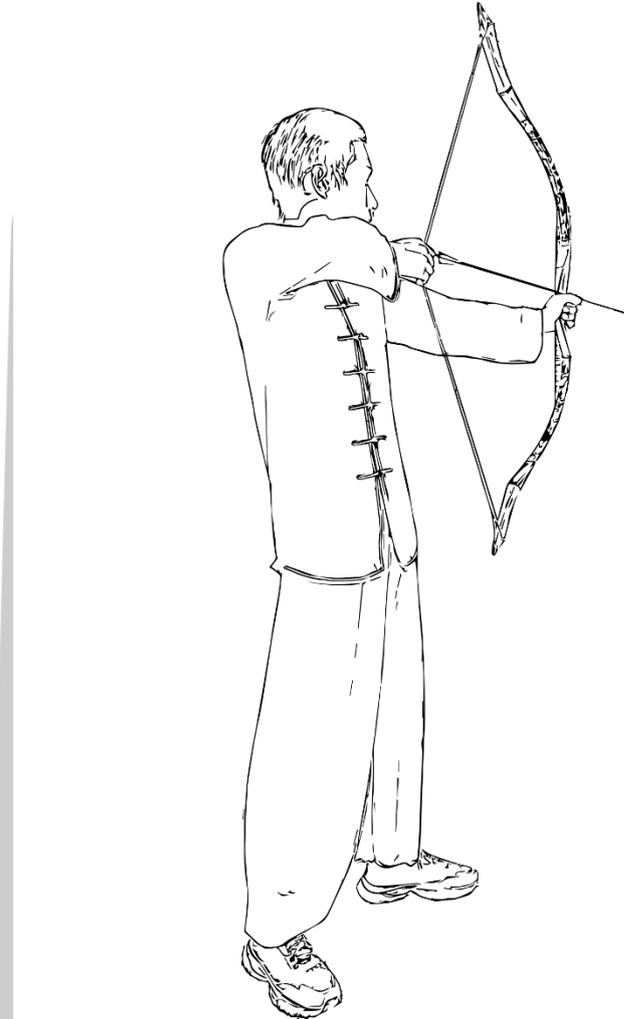


Figure 69 Pinch Arrow Shooting Method yin gou

The pinch-style shooting method is a more primitive way of shooting arrows, still used by some tribal hunters in Africa and other remote regions. Here are the general steps for the pinch-style shooting method:

1. Standing posture: Stand with your feet shoulder-width apart, stand sideways, and distribute your weight evenly on both feet. Keep your body upright, relaxed but not slack.

2. Arrow grip: Hold the arrow shaft lightly with your thumb, index finger, and middle finger. The thumb is on one side, and the index finger and middle finger are on the other side. Do not grip the arrow too tightly with your fingers to avoid affecting the subsequent actions.

3. Arrow placement: Place the arrow on the upper part of the bowstring, ensuring that the arrow is perpendicular to the bowstring.

4. Pulling action: Lightly hook the bowstring with the index, middle, and ring fingers of the other hand, stretch the arm backward, and exert force on the back muscles. When pulling the string, the arm should be as straight as possible, and the elbow should not be bent.

5. Aim: Slightly turn your head to the side, aim at the target through the extension line of the arrow with your eyes. Keep your body stable and avoid shaking.

6. Maintain stability: When pulling the string into position for shooting, pay attention to breathing steadily, keep all parts of the body in a fixed position, and avoid unnecessary movements that may affect shooting accuracy.

It is important to note that the pinching arrow release technique is not a mainstream shooting technique in modern archery sports and has certain limitations. It is recommended to practice under the guidance of a professional coach and follow safety regulations during actual archery activities.

Here are some tips for the pinching arrow shooting technique yingou:

1. Stable posture: Maintain a stable standing posture with both feet firmly planted to provide a stable foundation for the pulling movement.

2. Slowly increase force: When exercising, slowly and evenly increase the force, avoiding sudden strong pulls to prevent loss of control over the movement.

3. Finger position: Ensure that the fingers gripping the arrow are accurate and stable to prevent the arrow from sliding or shifting during the drawing process.

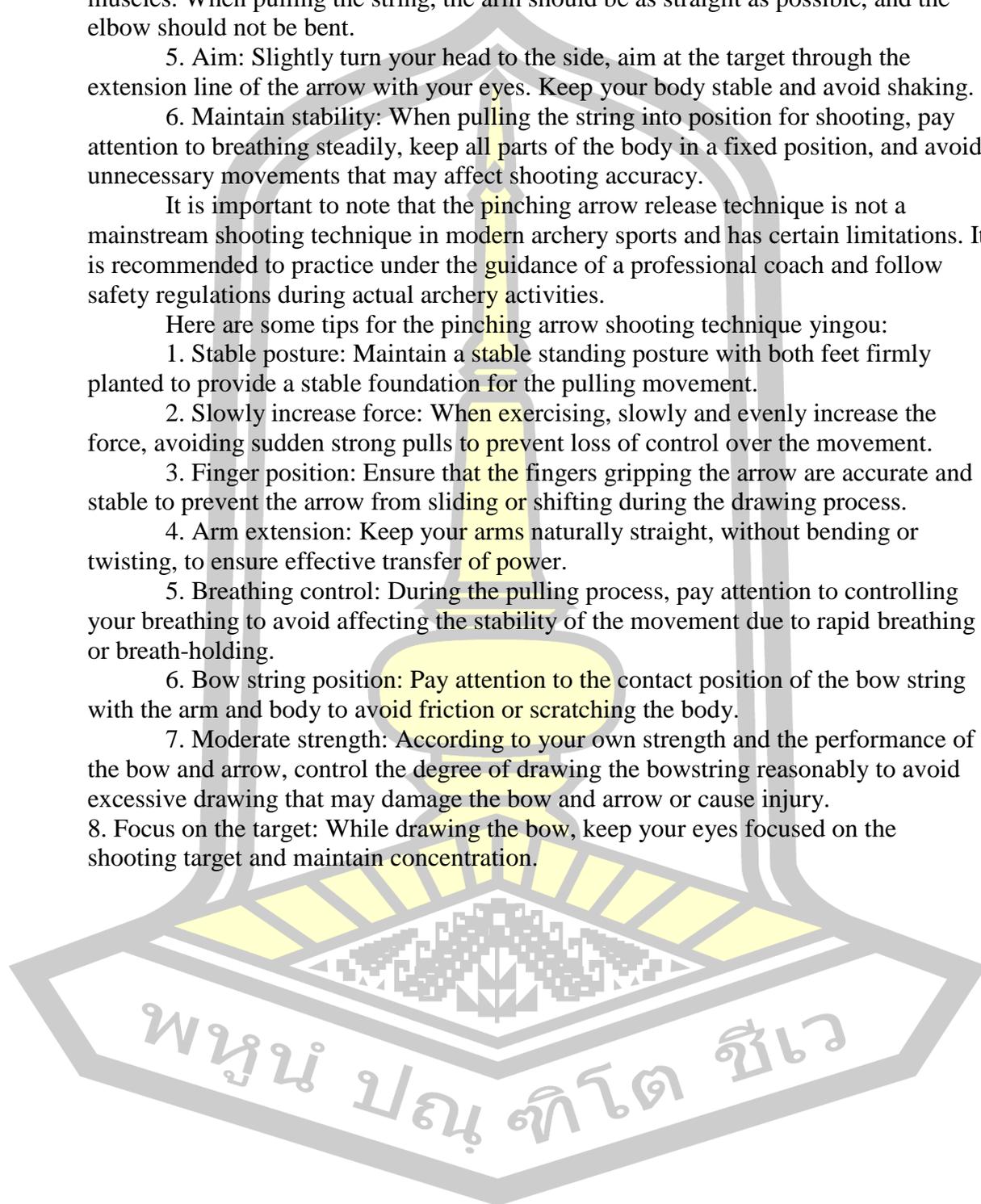
4. Arm extension: Keep your arms naturally straight, without bending or twisting, to ensure effective transfer of power.

5. Breathing control: During the pulling process, pay attention to controlling your breathing to avoid affecting the stability of the movement due to rapid breathing or breath-holding.

6. Bow string position: Pay attention to the contact position of the bow string with the arm and body to avoid friction or scratching the body.

7. Moderate strength: According to your own strength and the performance of the bow and arrow, control the degree of drawing the bowstring reasonably to avoid excessive drawing that may damage the bow and arrow or cause injury.

8. Focus on the target: While drawing the bow, keep your eyes focused on the shooting target and maintain concentration.



7) Pinch Arrow Shooting Method sa fang,



Figure 70 Pinch Arrow Shooting Method sa fang

Slightly turn your head to the side, aim at the target along the extension of the arrow with your eyes. Keep your body stable and avoid shaking. Before releasing the arrow, transfer the power from your arm to your fingers, then release the fingers suddenly to let the arrow shoot out naturally. During the release, keep your fingers and wrist relaxed, do not exert too much force or release too quickly. After releasing, maintain the posture of your arm without immediately lowering it, in order to observe the flight path and landing point of the arrow.

When using the pinching arrow shooting technique, special attention should be paid to the following points:

1. Relax your fingers: At the moment of release, your fingers should relax naturally and evenly, avoiding sudden or forceful release to minimize interference with the arrow's flight.

2. Smooth Movement: The release action should be as smooth as possible to reduce unnecessary shaking or wobbling, ensuring that the arrow flies in the intended direction.

Timing: Master the timing of releasing the shot, usually when aiming is completed and the body posture is stable.

4. Avoid Distractions: Ensure that there are no extra movements or distractions from other parts of your body or arms when releasing the arrow to avoid affecting the trajectory of the shot.

5. Maintain focus: Even in the moment of release, continue to maintain focus on the target and keep your mind concentrated.

8) Pinch Arrow Shooting Method liang ong

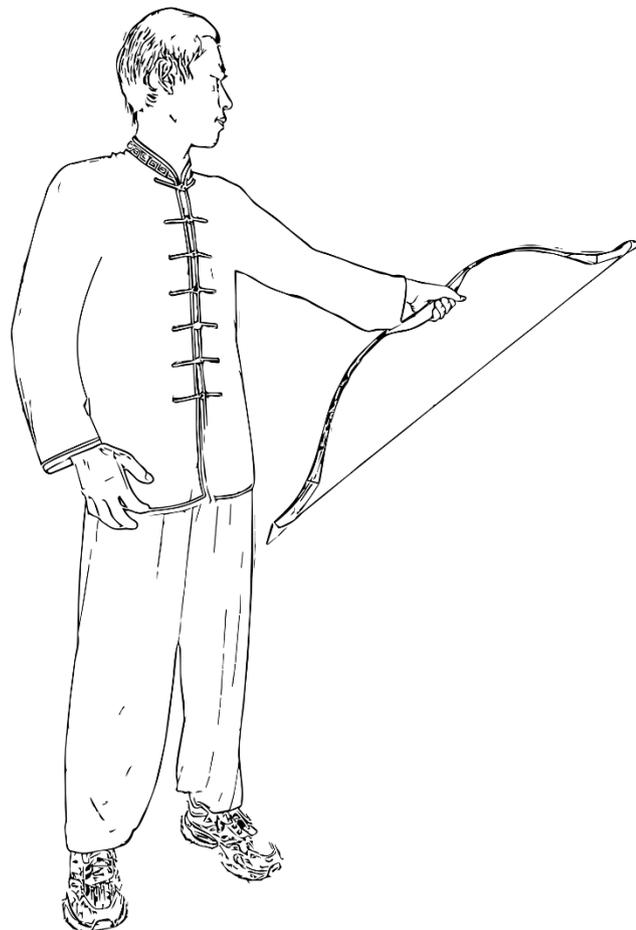


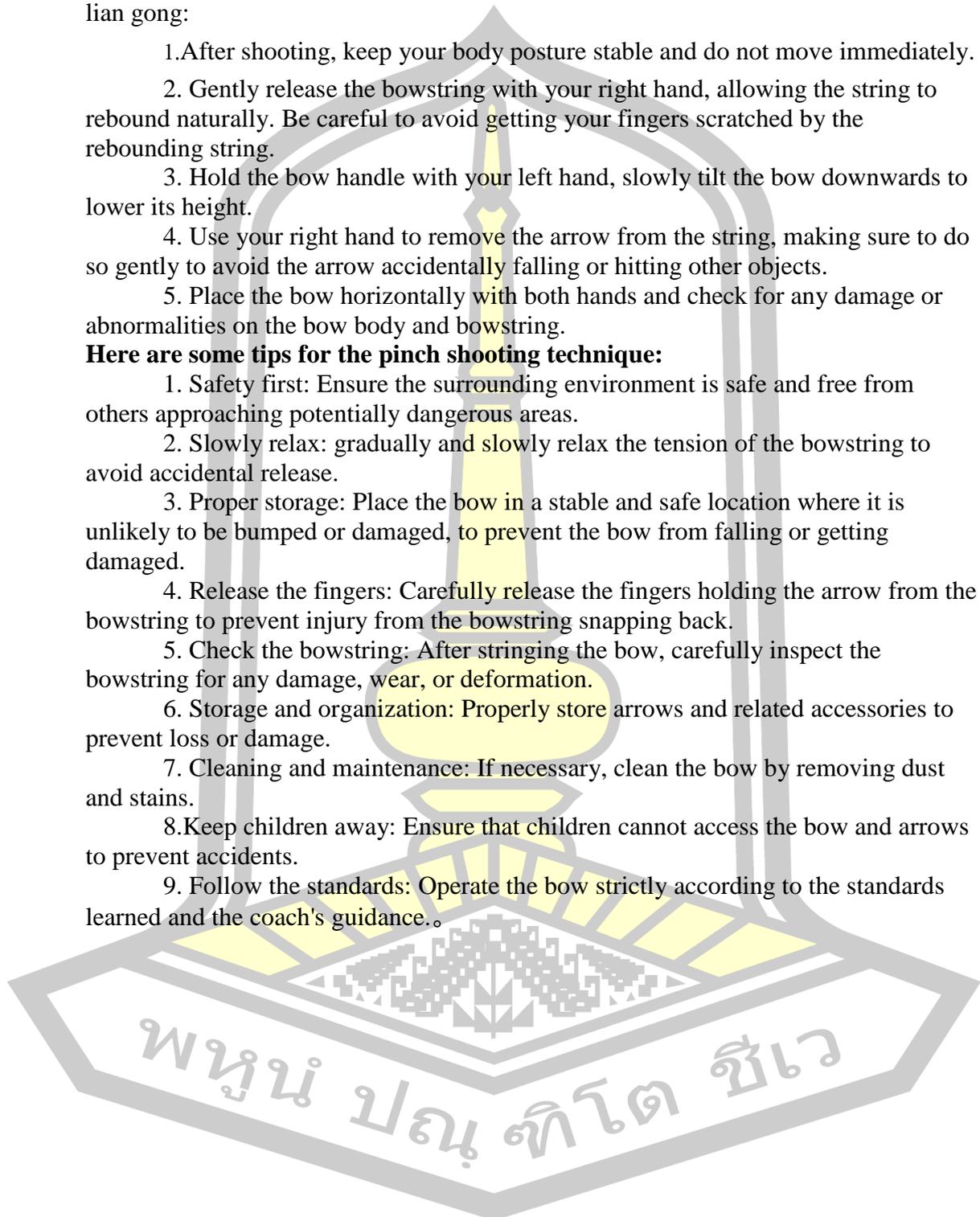
Figure 71 Pinch Arrow Shooting Method liang ong

Here are the standard movements of the pinching arrow shooting technique in lian gong:

1. After shooting, keep your body posture stable and do not move immediately.
2. Gently release the bowstring with your right hand, allowing the string to rebound naturally. Be careful to avoid getting your fingers scratched by the rebounding string.
3. Hold the bow handle with your left hand, slowly tilt the bow downwards to lower its height.
4. Use your right hand to remove the arrow from the string, making sure to do so gently to avoid the arrow accidentally falling or hitting other objects.
5. Place the bow horizontally with both hands and check for any damage or abnormalities on the bow body and bowstring.

Here are some tips for the pinch shooting technique:

1. Safety first: Ensure the surrounding environment is safe and free from others approaching potentially dangerous areas.
2. Slowly relax: gradually and slowly relax the tension of the bowstring to avoid accidental release.
3. Proper storage: Place the bow in a stable and safe location where it is unlikely to be bumped or damaged, to prevent the bow from falling or getting damaged.
4. Release the fingers: Carefully release the fingers holding the arrow from the bowstring to prevent injury from the bowstring snapping back.
5. Check the bowstring: After stringing the bow, carefully inspect the bowstring for any damage, wear, or deformation.
6. Storage and organization: Properly store arrows and related accessories to prevent loss or damage.
7. Cleaning and maintenance: If necessary, clean the bow by removing dust and stains.
8. Keep children away: Ensure that children cannot access the bow and arrows to prevent accidents.
9. Follow the standards: Operate the bow strictly according to the standards learned and the coach's guidance.



CHAPTER V

Conclusion, Discussion, and Suggestion

1. Conclusion

The ultimate goal of this study is to design a set of illustrations tailored to the learning needs of adolescents in current educational institutions. In addition to teaching students technical skills, the teaching process also involves knowledge organization and learning of archery culture, including etiquette culture.

The bow and arrow culture has played a significant role in the historical and cultural development of China:

1. The emergence of the spirit of bravery: In the process of Chinese historical development, the bow and arrow culture has nurtured the spirit of bravery of the Chinese nation. From the worship of archery in the Xia, Shang, and Zhou periods, to the widespread practice of archery among the people and the military equipment and tactics of bows and crossbows in the Spring and Autumn Period and the Warring States period, and then to various dynasties such as the Qin, Han, Tang, Song, Liao, Jin, Xia, Mongol, Yuan, Ming, and Qing, the use of bows and arrows in military affairs and the inheritance of related culture all reflect this spirit of bravery.

2. The Formation of Ritual Culture: The ritual archery that emerged in the ancient Central Plains region embodies the cultural essence of combining civil and military affairs, integrating ritual with education, and advocating harmony. For example, the late Shang Dynasty saw the emergence of archery rituals, which were a cultural activity that combined music, dance, etiquette, and morality. Archery rituals had a complete competition system, elements, rules, and procedures, with purposes including defense through archery, talent selection, communication, and education. Different levels of archery rituals, such as grand archery, guest archery, banquet archery, and village archery, were held on different occasions with strict regulations and significance. This archery ritual culture reflects the ancient Chinese emphasis on ritual, morality, and humanistic education.

3. Exchange and integration of ethnic cultures: Among all the ancient cultural heritages in China, archery culture is full of characteristics of multi-ethnic cultural exchange and integration. From the early Xiongnu, Xianbei to the later Mongolian, Manchu and other ethnic cultural systems, all are based on 'shooting' and have derived a series of cultural contents such as etiquette, fine arts, craftsmanship, sports, poetry, and dance. These traditions eventually merge into a broad and colorful field of traditional Chinese cultural projects.

4. Important Content of Education: During the Xia and Shang dynasties, traditional archery was used for educational purposes. Throughout history, various social classes have imbued archery with many educational concepts and philosophical ideas, such as Confucius considering archery as a key component of the "Six Arts". The ritualized education of archery holds significant importance for the growth of children, and the pursuit and teaching of archery skills also help cultivate people's focus, self-discipline, and craftsmanship.

5. Subject matter of literary and artistic works: The archery culture provides rich subject matter for literary works, poetry, and other art forms. For example, there

are many poems about hunting, describing the scenes, moods, and emotions of hunting.

6. Technological development: The production of bows and arrows involves the selection of materials, the application of mechanical principles, etc., which to some extent promotes the progress of related technologies. For example, the production of a composite bow requires the use of multiple materials and processes such as gluing and wrapping reinforcement, reflecting the technological level of production at that time.

7. Entertainment: In terms of entertainment, there is a wide range of activities, with archery competitions being the most popular. These include archery, target shooting, parent-child archery, and games like pitching, which are both safe and fun. The relationship between archery and health: Coordinated physical activities help to exercise muscle strength, flexibility, and balance, while also improving coordination and reaction abilities. It can bring the body and mind to a harmonious state, helping to relax and reduce stress.

Archery culture is an important part of traditional Chinese culture with a long history and profound influence. Since ancient times, the art of archery has not only been a sport, but also a spiritual pursuit for cultivating personal morals and emotions. In modern society, archery culture still holds significant value. It can improve people's physical and mental qualities, as well as cultivate their moral values and humanistic spirit. Therefore, we should actively promote the culture of archery art, so that more people can understand and experience this ancient and profound cultural tradition.

Since the implementation of the teaching method, we have conducted in-depth evaluations and research, and students have achieved significant results in the learning process.

Table 2 Comparison table of archery statistics

	Total arrow	hit the target	miss the target in shooting practice	1-5 loop	6-9 loop	10 loop	hit ratio	Off-target rate
the first week	200	89	111	60	29	0	44.5%	55.5%
the second week	200	153	47	100	48	5	76.5%	44.5%
the third week	200	189	11	65	81	43	95.5%	4.5%
the fourth week	200	200	0	45	103	52	100%	0%

At the same time, the mindset of students has changed significantly after practicing for a period of time, from initially lacking confidence in pulling the bow and being afraid to bow, to being confident in shooting with a full draw and hitting the bullseye optimistically and confidently after a month, and being able to quickly enter the classroom and participate in learning activities.

2. Discussions

This study focuses on researching the learning of archery culture among teenagers.

I hope to revitalize this ancient and charming culture among young people through in-depth understanding and practice.

Archery, also known as "Sheli" in ancient times, is an important part of traditional Chinese culture. It is not just a skill, but also a spiritual pursuit of self-cultivation and willpower training. In ancient times, archery was considered one of the six arts of a gentleman, and was an essential part of the cultivation of scholars. Through the activity of archery, people can learn qualities such as concentration, patience, and perseverance, and continuously improve themselves in practice.

In modern society, with the advancement of technology and the acceleration of life pace, many teenagers have little understanding of archery culture, and even have misunderstandings about it. They may think that archery is outdated, useless, or just a form of entertainment. The formation of this perception not only hinders the inheritance and development of archery culture, but also deprives teenagers of a valuable opportunity to learn about and study traditional culture.

To change this situation, we conducted this research. We hope to understand the level of awareness and attitudes of teenagers towards archery culture, as well as the difficulties and challenges they encounter in learning archery through systematic investigation and analysis. At the same time, we will also explore how to better inherit and promote archery culture in modern society, revitalizing this ancient and charming culture among teenagers.

We have adopted various methods. We conducted surveys:

1. Collected a large amount of data on the level of awareness and attitudes of teenagers towards archery culture. This data provides us with valuable reference points, allowing us to gain a deeper understanding of teenagers' views and attitudes towards archery culture.

2. We have invited professional archery coaches and scholars to provide systematic archery training and cultural lectures for teenagers. Through these activities, teenagers can not only learn the basic skills and theoretical knowledge of archery, but also gain a deeper understanding of the historical origins and cultural connotations of archery culture. They experience the unique charm of archery culture in practice and have developed a strong interest in this culture.

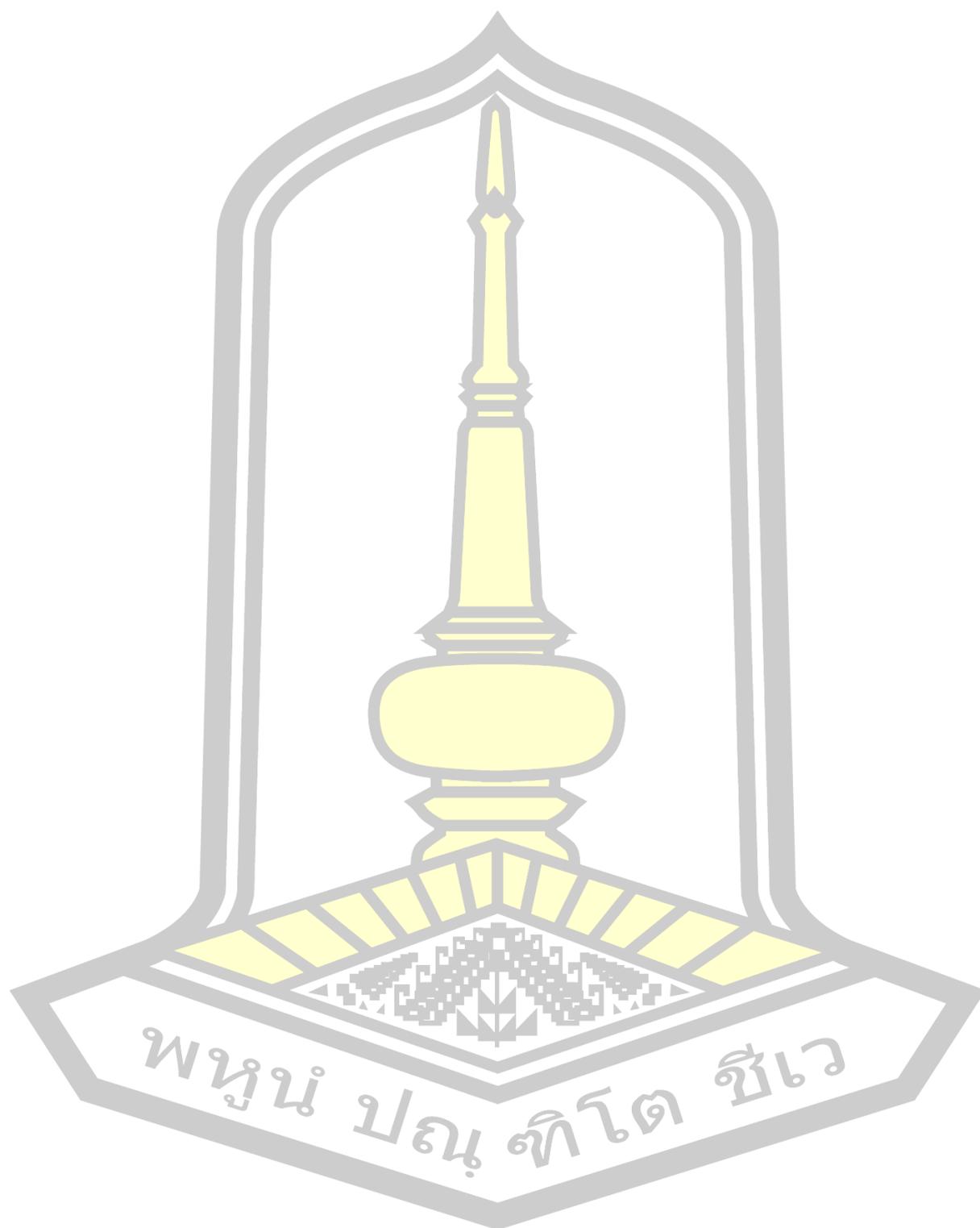
3. We have also organized multiple archery competitions and exchange activities, providing young people with the opportunity to showcase their achievements and progress. These activities not only inspire their interest and enthusiasm for learning, but also allow them to continuously improve their skills and cultivation through practice. Through these activities, we have also seen the significant achievements and progress made by young people in the process of learning archery culture.

Through this study, we have gained a deeper understanding of the awareness and attitudes of teenagers towards archery culture, and explored how to better inherit and promote archery culture in modern society. We believe that in the future, archery culture will rejuvenate among teenagers and become a valuable asset in their growth journey.

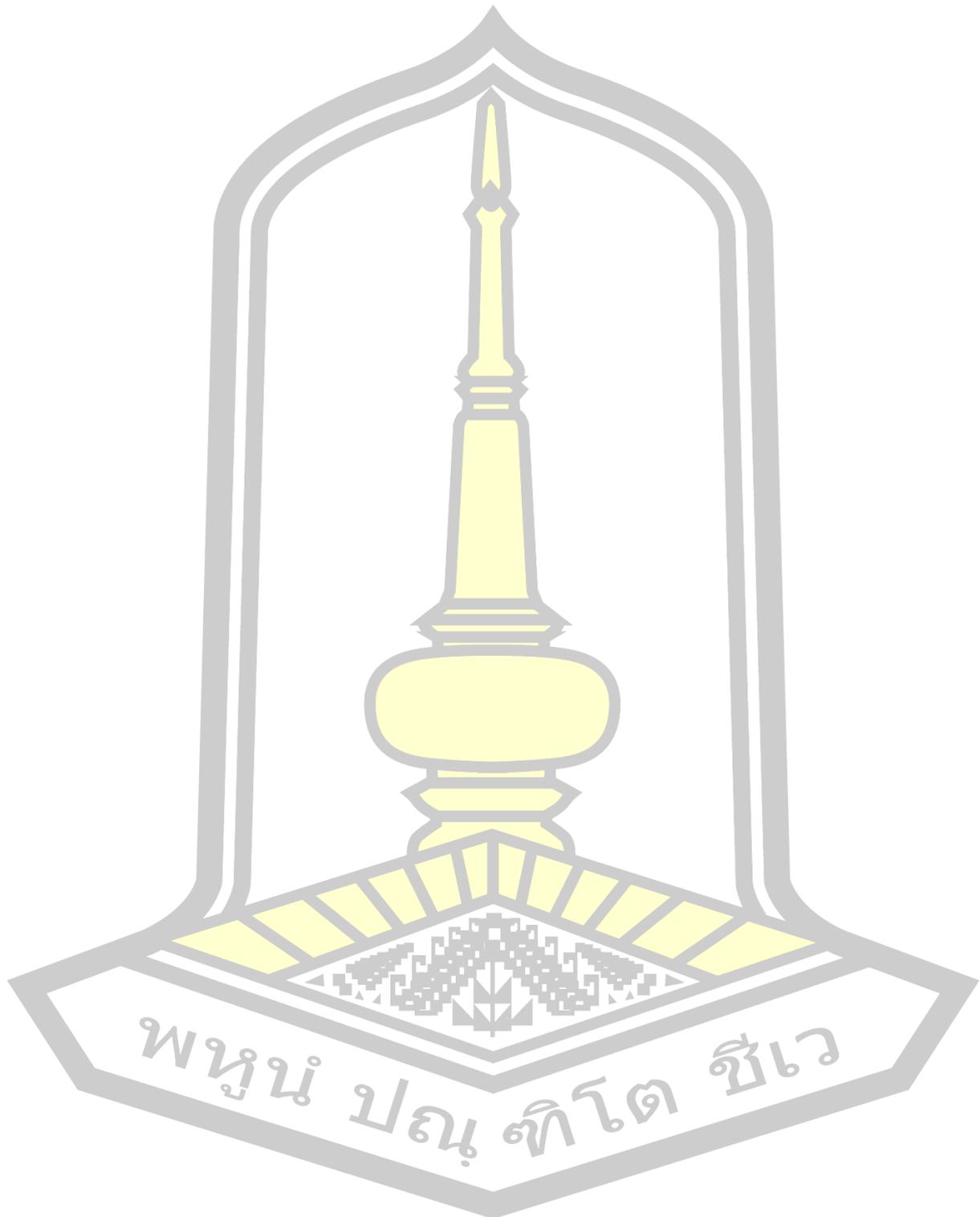
3 .Research Suggestions:

In the process of learning art and culture and the current status of students' learning, it is important to communicate with relevant experts and professors to provide suggestions and improvements for this course. Qiao Fengjie, a Ph.D. supervisor at Tsinghua University and a professor of Lotus Hand Heritage, focuses on guiding students in learning artistic movements while telling them stories of art and humanities in Chinese history and culture. By combining archery with historical and cultural teaching, richer life philosophy stories are brought to students, allowing them to immerse themselves. Mr. Wu, a Ph.D. from Luoyang Normal University and an inheritor of Zhoukou Heart-connected Six Harmony Boxing, emphasizes the need to pay attention to students' emotional and psychological changes during the learning process, communicate more with students, and actively identify problems students encounter in the learning process. Mr. Li Zijian, the founder of Track Fist, points out that in the process of archery, we must pay attention to students' practice movements. If the teaching content does not align with practical application, we need to correct or change the teaching plan to achieve better teaching results. Asian Games archery champion Gao Yu points out whether students' movements are in place, whether there are incorrect movements, and whether their breathing is adjusted to the optimal state, aiming to help students achieve a perfect shot in archery. Based on the above data, the teaching method of archery mapping explanation has significant advantages and effects in archery teaching. We will continue to research and improve teaching methods to provide a better learning experience for more archery enthusiasts. At the same time, we hope to strengthen communication and cooperation with peers to promote the development of archery teaching. Since the introduction and application of archery and graphic teaching methods in practical teaching, we have conducted comprehensive and detailed evaluations and research, achieving satisfactory results. This method presents complex archery skills in an intuitive and understandable form, greatly enhancing learners' learning effectiveness and interest. In the teaching evaluation process, we have used various assessment methods, including learners' feedback, skill test scores, and classroom performance observations. The results show that learners generally find the teaching method of archery and graphic explanation easy to understand and can quickly grasp the basics of archery. At the same time, skill test scores have shown a steady upward trend, indicating a significant improvement in learners' archery skills.

Based on research results, a thorough analysis of the advantages and characteristics of this teaching method was conducted, and an effective archery teaching plan was developed. This plan not only focuses on teaching skills but also emphasizes students' learning outcomes.



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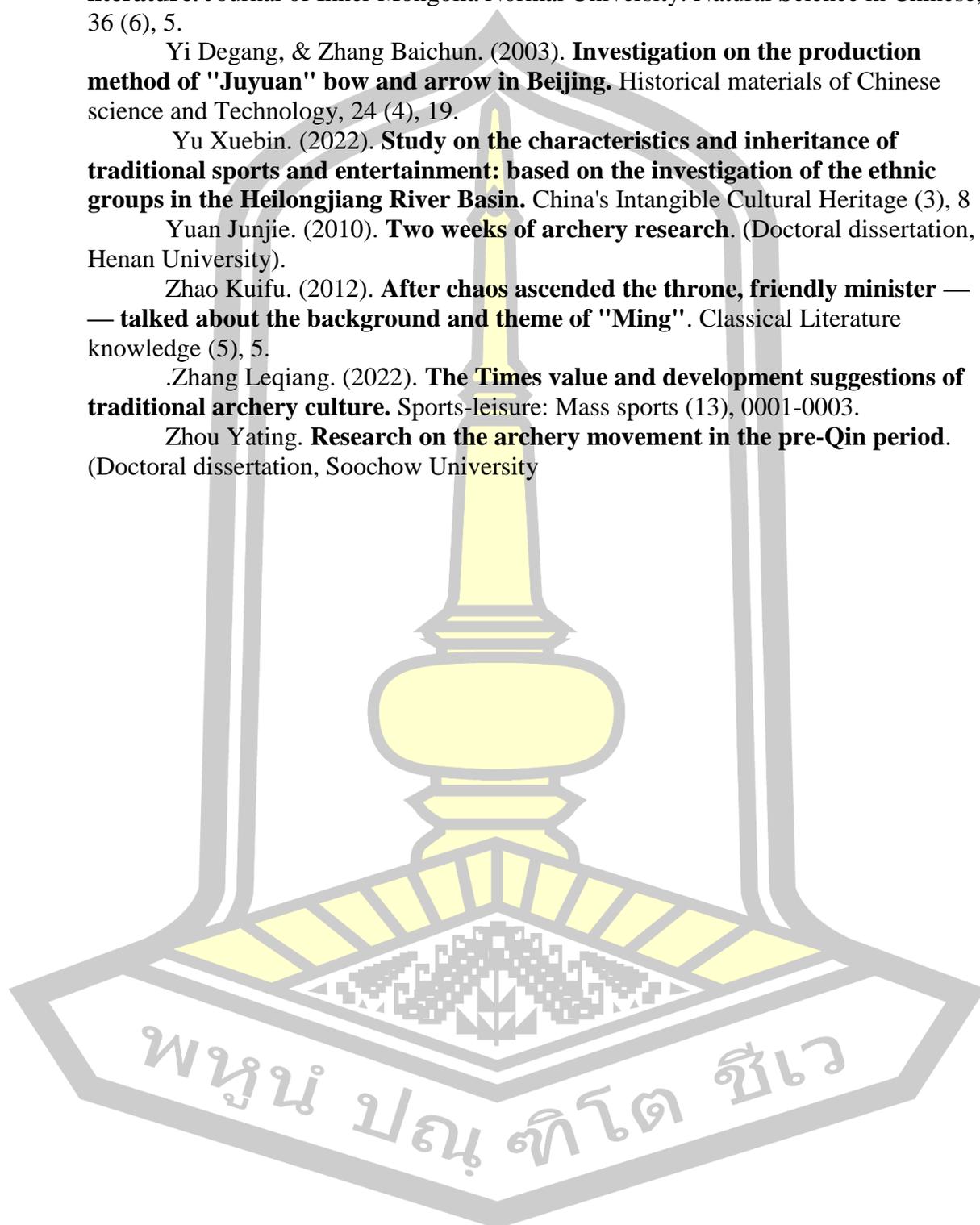
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