



Erhu Pedagogy in Selected Universities in Gui Zhou Province in China.

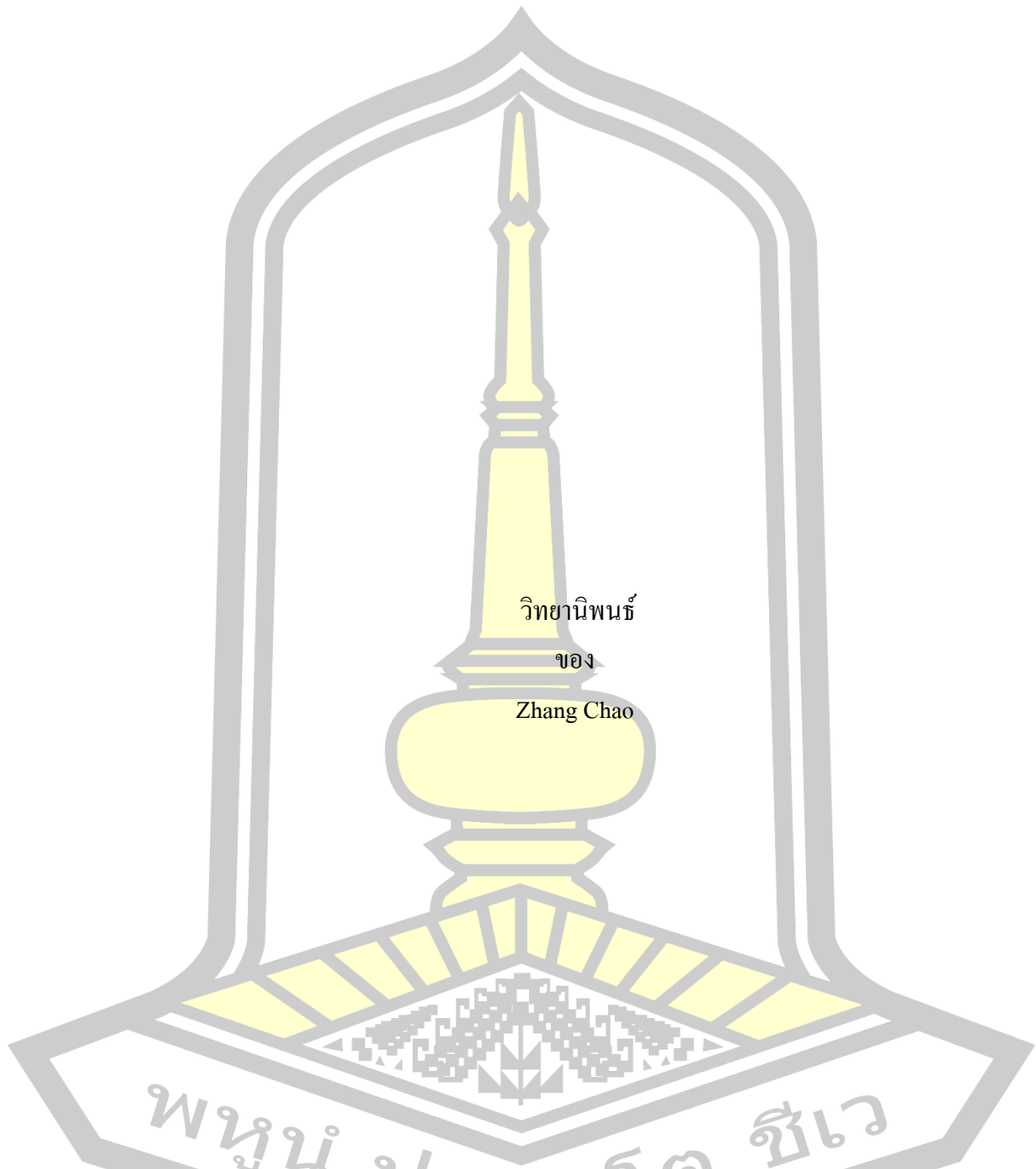
Zhang Chao

A Thesis Submitted in Partial Fulfillment of Requirements for
degree of Doctor of Philosophy in Doctor of Philosophy Program in Music

September 2019

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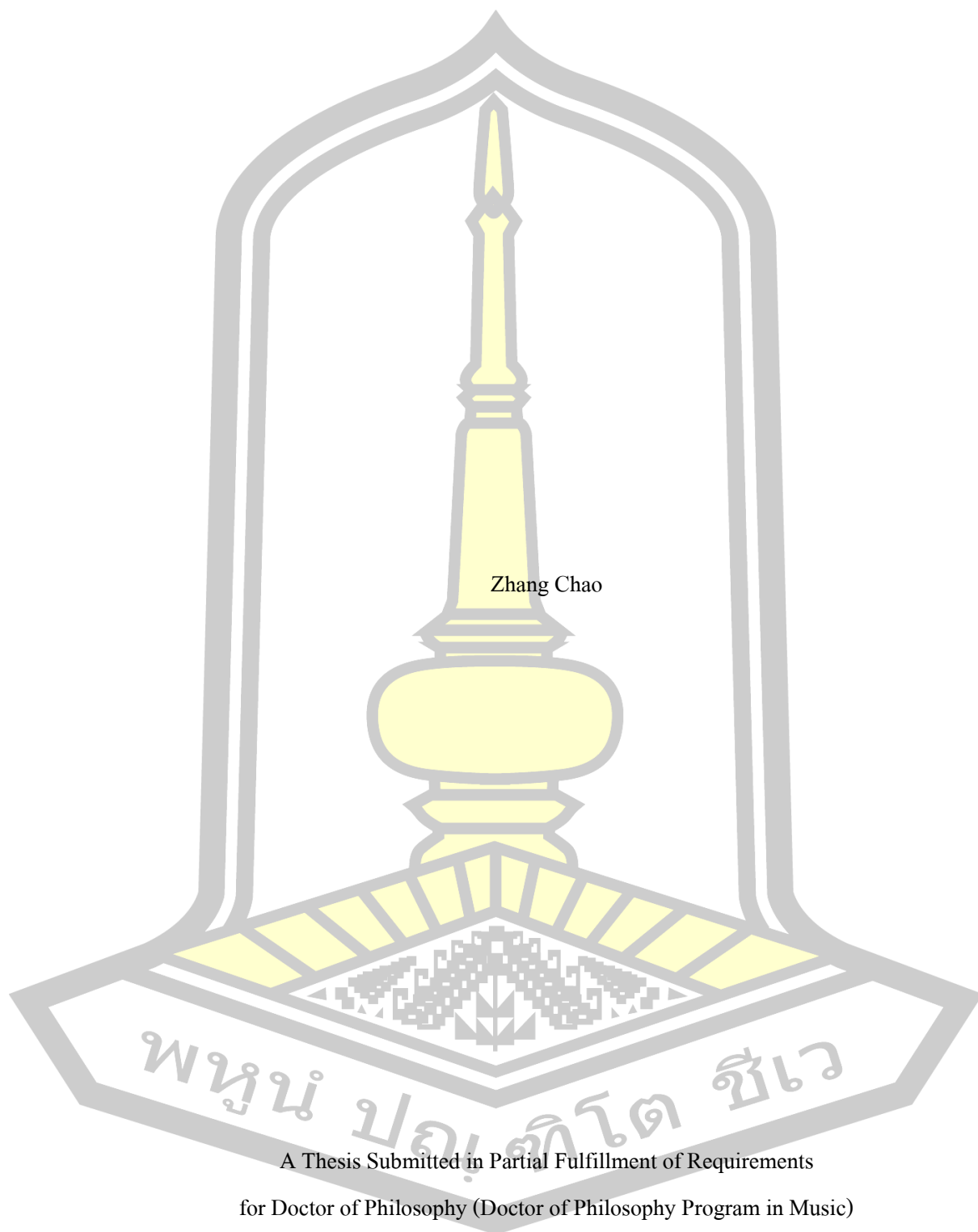
เสนอต่อมหาวิทยาลัยมหาสารคาม เพื่อเป็นส่วนหนึ่งของการศึกษาตามหลักสูตร

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Erhu Pedagogy in Selected Universities in Gui Zhou Province in China.



Zhang Chao

A Thesis Submitted in Partial Fulfillment of Requirements
for Doctor of Philosophy (Doctor of Philosophy Program in Music)

September 2019

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ABSTRACT

This dissertation aims to study Erhu pedagogy in selected universities in Guizhou Province, China. The objectives of this dissertation are 1) To infer the selected Erhu primary techniques; 2) To explore the new teaching pattern and propose related projects. 3) To test students' satisfaction of the new Erhu teaching method and provide related suggestions. This dissertation was a qualitative research which includes related research, surveying, observing, interviewing. The data were collected based on the fieldwork from 3 Erhu instructors and 9 Erhu students in selected universities in Guizhou province. This article presents a descriptive analysis using data collected from the fieldwork, artists and professors.

The results of this dissertation are as follows: 1) There are a lot of Erhu primary techniques, which has been a great change with so many years of development since the creation of Erhu; 2) The new teaching pattern should be explored because of teaching problems and difficulties which are remained to be solved in Erhu teaching process; 3) Teachers' and students' satisfaction of the new Erhu teaching method is the standard to test the merits. During the development of Erhu performance art, the innovative teaching methods should be proposed and perfected constantly to establish the systematic Erhu education system in the future.

Keyword : Erhu, techniques, pedagogy, new teaching method

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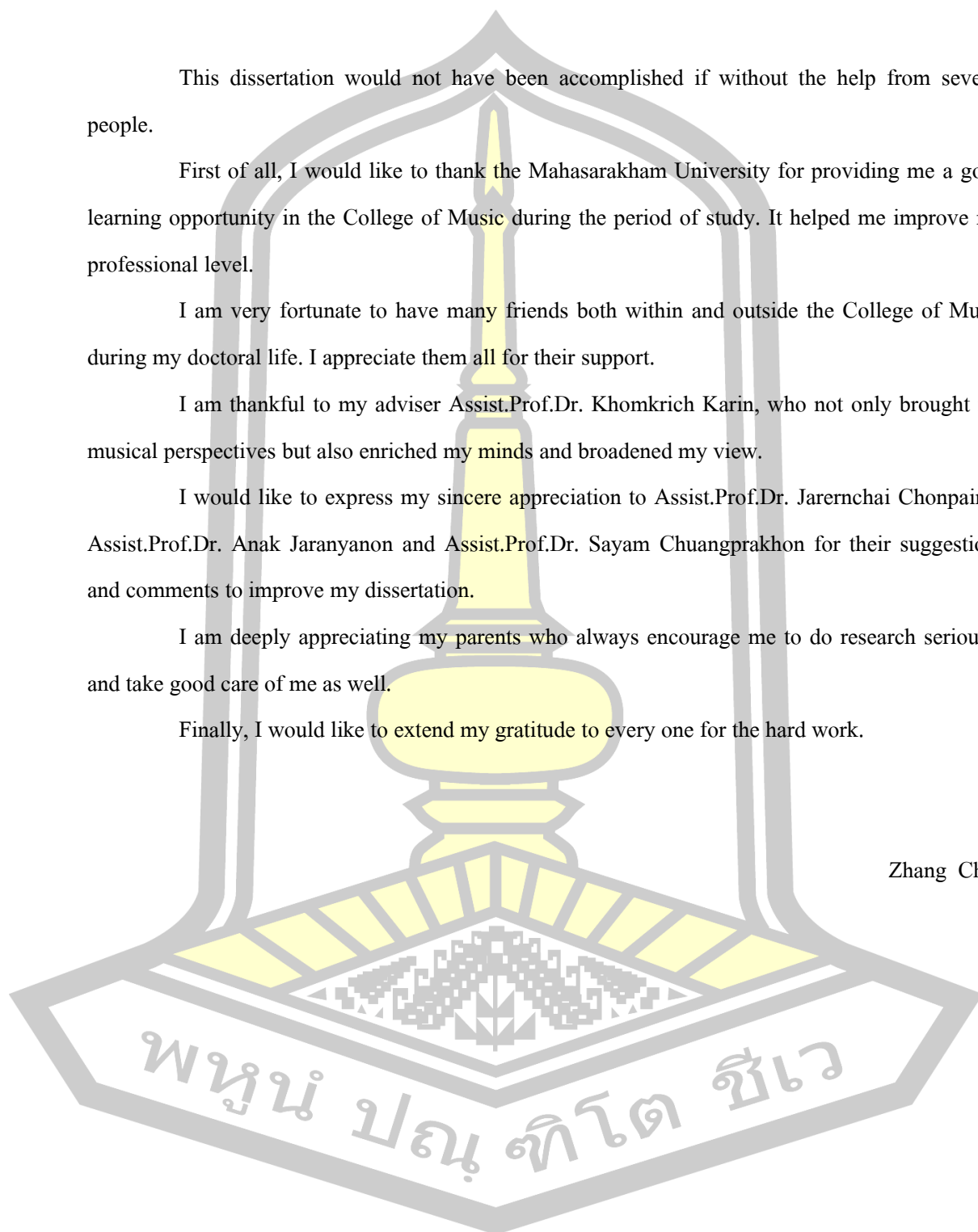


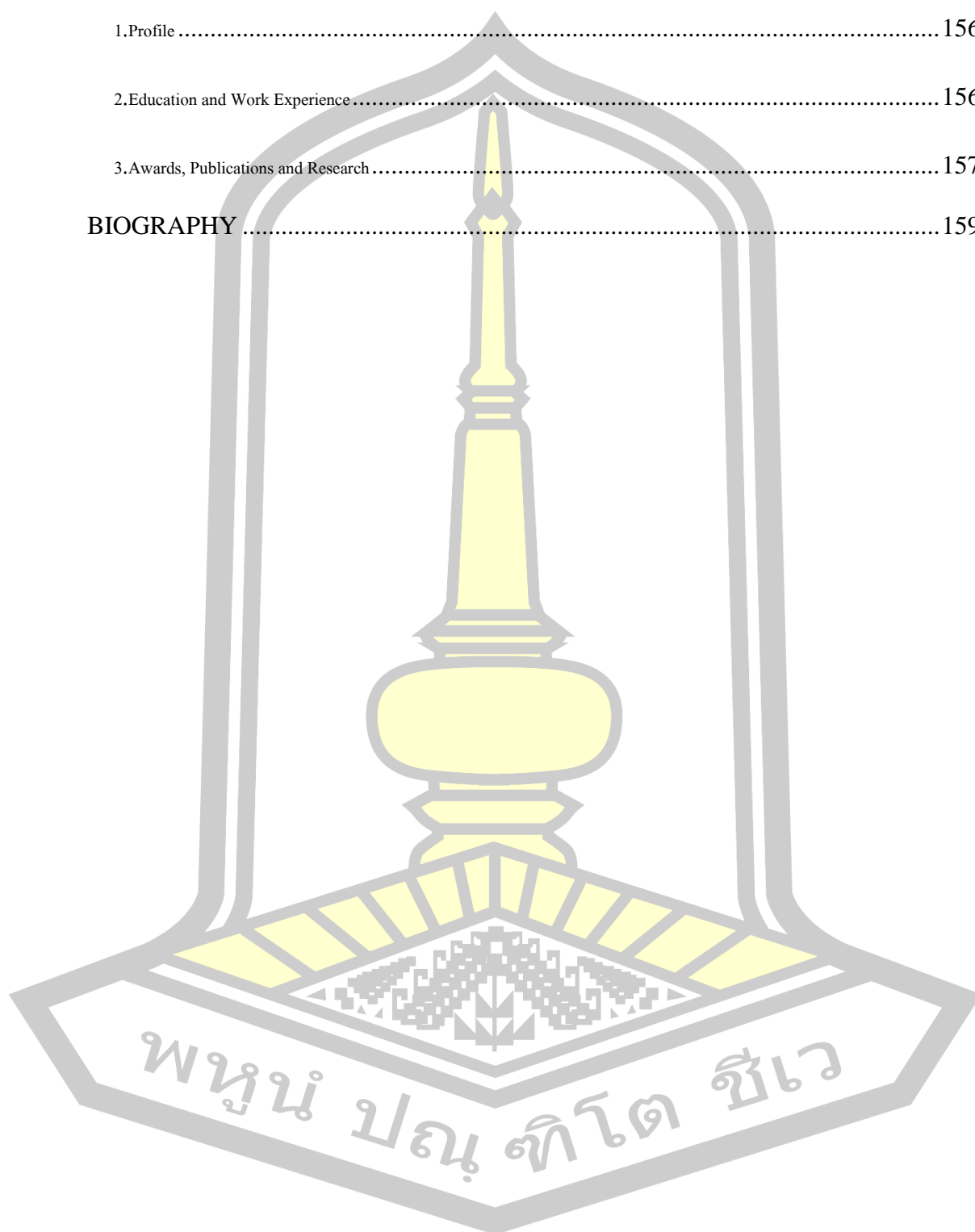
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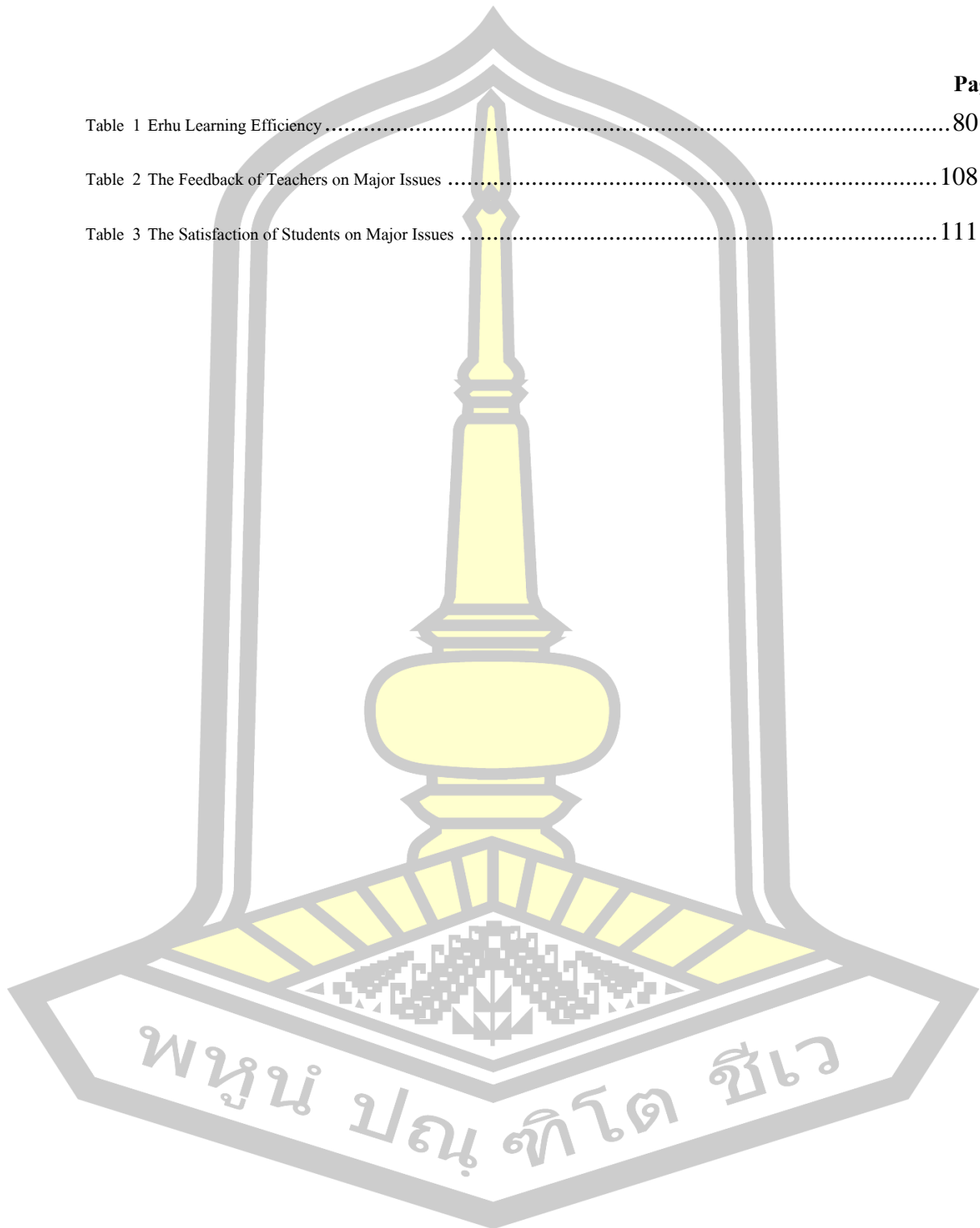
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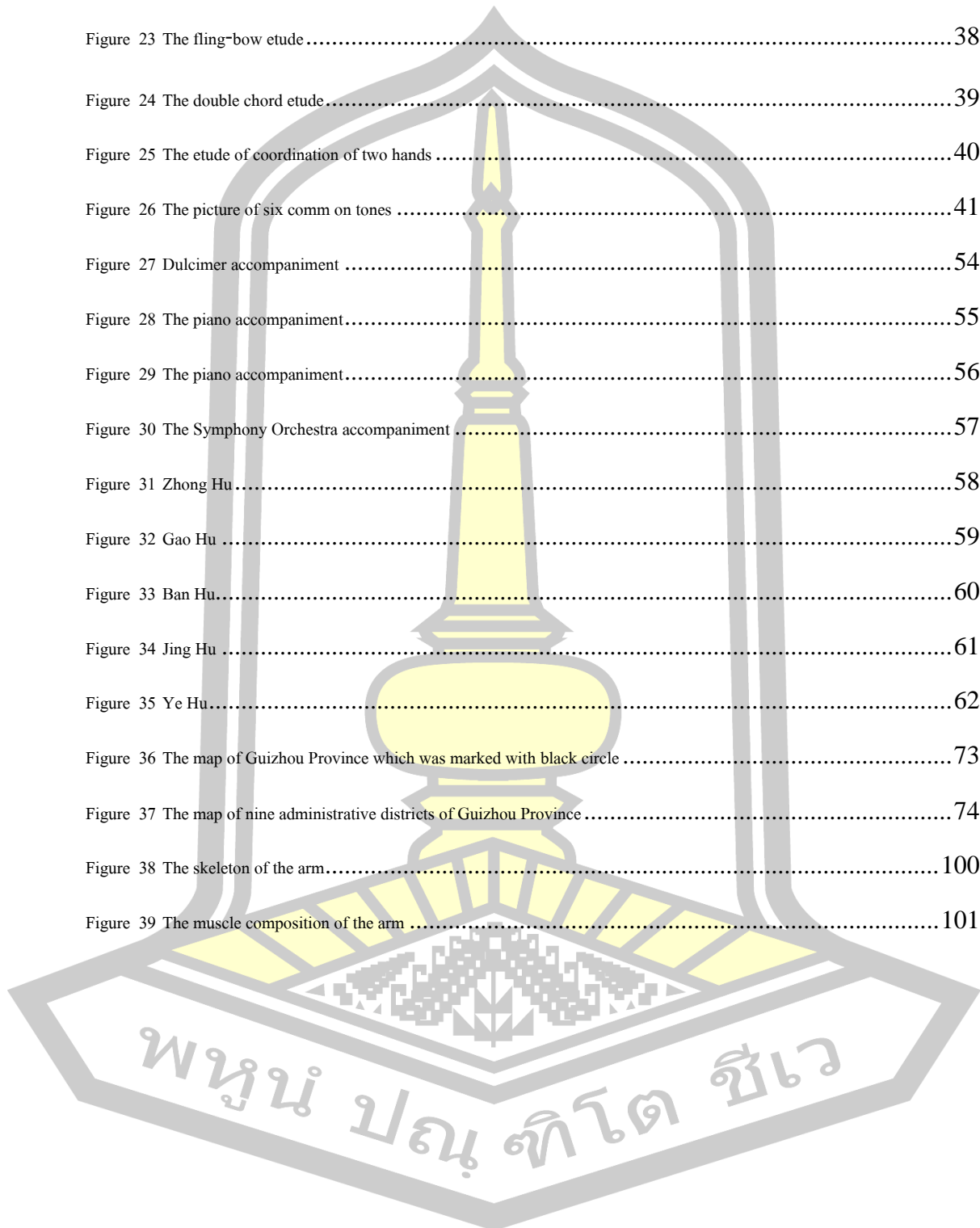
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CHAPTER I

INTRODUCTION

1. Background

Erhu is one of the most representative bowstring instruments in China with elegant tone and protean technique. It also has a long history and involves deep traditional connotations that represents the great wisdom of the Chinese people.

From its emergence to specialized education, Erhu has undergone through a series of evolutionary process that embody the hard work of many performers and educators. But the detailed account of the representative figures and works was produced only during the last hundred years. With the continuous development of the contemporary Erhu performing arts, relevant performance technologies have been more specialized, and the content of performance has also become more enriched and the playing types have been more diversified, at the same time serious challenges have also been brought onto Erhu teaching. With the rapid development of science and technology, education has also placed a high demand on information and data techniques. In colleges and universities, more scientific teaching methods and administrative systems should be applied. The new generation of Erhu players should not only improve their music appreciation skills, but also should inherit the traditional music to innovate modern ones. From my perspective, all the performers should undertake the responsibility of bringing Erhu performance art to the international arena and create a more brilliant future. (Huang Y, 2011)

In order to improve the quality and level of teaching, I attempt to explore the different changes in each development process from its early ages to the present. In particular, the teaching method of *Erhu* has been discussed continuously since the instrument was included into a specialized education system. To acquire more profound understanding, it is necessary for us to learn the history of *Erhu* development.

In modern times, *Erhu* has changed in many aspects. A lot of innovations have been conducted on playing techniques and performing works. Tons of modern elements have been integrated into the composition of *Erhu's* works, and the relevant playing techniques have also

improved significantly. The repertoire has increased and the style has been more and more diversified. However, there are also a lot of problems emerging during the teaching process. Therefore, I try to conduct some research regarding to this issue to make the playing techniques more systematic.

From the perspective of music historiography, we can analyze the previous data of *Erhu* and summarize the music features and morphology in each historical period. Considering the aspects of politics, economy, culture and society, I will discuss the factors affecting the development process and compares the ways of different inheritances in each stage. Finally, the internal impetus for the changes in *Erhu* performance and musical style can be obtained.

From the perspective of music pedagogy, we can analyze the different teaching methods from the time when *Erhu* became a professional field of education. By exploring the course syllabus and the objectives, content, means and evaluation systems of teaching, I will propose a well-defined teaching theory and system which can be put into practice.

From the perspective of data establishment, I will explore the influence of data on *Erhu* teaching. With the rapid development of science and technology, music education has also ushered in a high level of data era. Through the construction of data resources, data tracking and analysis, the prediction of learning process and the evaluation of learning results can be realized. In the future, intelligent means will be used to assist *Erhu* teaching.

This study is conducted to find out problems existing in Erhu teaching system and thus to upgrade playing techniques. Therefore, Chinese musical disciplines are adopted as a sort of typical practices in the study of music cultures and other instruments.

2.Purpose of the Research

- 2.1 To infer the selected *Erhu* primary techniques.
- 2.2 To explore the new teaching pattern and propose related projects.
- 2.3 To test students' satisfaction of the new *Erhu* teaching method and provide related suggestions.

3. Scope of the Research

3.1 The Overview of Erhu

The overview of Erhu, including the history of Erhu, representative personages, the structure of Erhu, the process of Erhu making, geographical division of Erhu performance style, the level for playing of Erhu, and the musical accompaniment for Erhu performance as well as similar instruments, such as the heritage of bow instruments. Erhu has experienced more than one thousand years, but some issues are still awaiting deeper explorations. The selected playing techniques include three aspects. Left hand techniques include tremolo, glissando, overtone, rapping, kneading, handlebar. Right hand techniques include fast-speed bow, medium-speed bow, slow-speed bow, jumping bow, quivering bow and double-string bow. Meanwhile, the cooperation of two hands always play an important role in performance. Each kind of technique requires performers to learn relevant professional knowledge and receive systematic trainings. (Cai Yue, 2017)

3.2 The Innovative Pedagogy

The pedagogy of Erhu and the application of innovative teaching mode in colleges and universities are imperative to be consider. With the fast development of science and technology, instructors should fully explore the potential of new technologies in music teaching and apply these technologies into courses to achieve optimized teaching outcomes. (Chen Jun, 2006)

3.3 Suggestion for Instructors and Students

In the teaching process, instructors are supposed to take advantage of innovative pedagogy to categorize different playing techniques and provide clear interpretations. Students are supposed to follow the principles and instructions to improve their performing level.

4. The maps of Selected Institutes

4.1 Guizhou Normal University

Address: Bao Shan Campus: No.116, North Bao Shan Road, Guiyang City, Guizhou province. Location the university is marked by black circle as follows:



Figure 1 location of Guizhou Normal University

Retrieved from <https://maps.app.goo.gl/ck5bSW5h3GcJqbRQA>

4.2 Guizhou Normal College

Address: No.115 Gao Xin Road, Wu Dang District, Guiyang City, Guizhou province.

Location the university is marked by black circle as follows:



Figure 2 The location of Guizhou Normal College

Retrieved from <https://maps.app.goo.gl/SzzzEid5P49jK8b8A>

4.3 Tong Ren University

Address: 103 Qing Shui Avenue, Tong Ren City, Guizhou province. Location of the university is marked by black circle as follows:

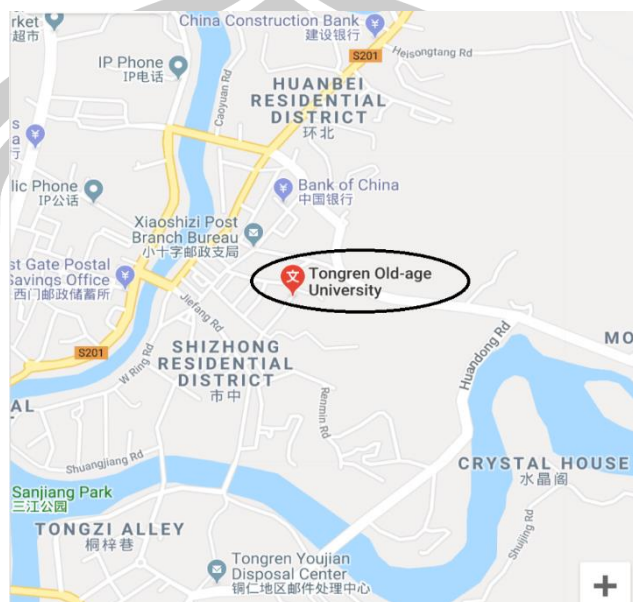


Figure 3 The location of Tong Ren University

Retrieved from <https://worlduniversitydirectory.com/Tongren-University-/map/4924/>

5. Conceptual Framework

I have been engaged in education of Erhu performance for many years and have made some attempts and explorations. This study will take the new teaching mode to analyze Erhu education as follows.

5.1 The Background of Exploring New Teaching Pattern

5.1.1 Introduction of Erhu Teaching Mode

In the teaching of Erhu in colleges and universities, instructors cannot apply unified syllabus, teaching content or schedule dues to the difference of students' actual performance skills. Therefore, in the current Erhu teaching, the "one-to-one" tutoring mode is mostly adopted, that is, every Erhu major student has a separate class with the tutor every week. However, every tutor has his or her advantages and disadvantages in playing and teaching. They often impart their most profound playing skills to students, while relatively ignoring other playing skills. For example, some teachers pay attention to the bow explanation and training of right hand; some

focus on the skills and training of left hand; some emphasize on the explanation and training of traditional songs, while others render explanation and training of modern works. In this way, if a student follows only one teacher, the teaching content will be relatively simple and repetitive. In my opinion, if there could be more than one Erhu teacher in the school, students can choose one teacher as their primary tutor others as secondary ones. If there is only one Erhu teacher in the school, teachers from similar colleges and universities can be invited as guest speakers to make full use of resources and create a "many-to-one" teaching mode. This way students could acquire the explanation and imparting of a number of teachers, which allows them to enjoy a diverse and comprehensive learning experience. (Zhang Hexing, 2016)

5.1.2 Introduction of Erhu Teaching Materials

Erhu teaching materials are the main basis for instructors to teach and students to learn and practice. Therefore, the choice of teaching materials is of paramount importance. Most of the existing Erhu teaching materials are compiled according to the difficulty of the repertoire, but few of them are prepared for Erhu playing techniques. In the teaching process, most instructors teach skills through the performance of the repertoire. In this way, the teaching methods of substituting music for work will make the playing techniques lack of individually targeted exercise, thus failing to achieve the actual performance effect. In my opinion, a series of separate systematic textbooks can be compiled for each single technique, such as textbooks of slow bow moving, bow technique, fast bow moving bow technique, interval module moving technique, string kneading technique, changing technique, slide technique. In this way, it is possible to carry out specialized single exercise of different techniques, step by step from the shallow to the deep, and avoid the learning process in one move. At the same time, instructors can also teach students in accordance with students' aptitudes, check the gaps and make up for the gaps, and prepare a study plan and materials suitable for each student. (Ren Jie, 2017)

5.2 The new Teaching Pattern Will Be Expored in this Research

5.2.1 The Teaching Form of Two-line

- 1) Offline one-to-one teaching courses;
- 2) Online expert skills courses;
- 3) Online repertoire demonstrations courses;
- 4) Online concert and lecture appreciation courses;

5) Online basic knowledge courses;

5.2.2 The Teaching Form of Three-dimensional Movement Analysis of Skills

Instrumental performance is a form of artistic performance. In a larger sense, instrumental performance is also a form of movement. Because the key to it lies in the reasonable coordination of shoulder, arm, elbow, forearm, wrist, hands, fingers and other body parts. Each kind of motion should follow scientific and effective principles that conform to the essential law of the certain movement. (Huang Wenhui, 2017)

By analyzing the movement essentials of Erhu in a three-dimensional way, students could acquire a clear understanding of the coordination between different parts of the bow, which will make the process simpler for students.

5.2.3 The Teaching Form of Audio-visual Data Feedback

It is an effective way to inspire the participation of teachers and students by using modern medias with audio-visual features. The process needs comprehensive collection and analysis of videos of Erhu class, but it is highly flexibility and freedom. Both teachers and students could realize their self-evaluation and peer-evaluation to find problems in teaching process. It is helpful to improve teaching and learning quality via offering their ability to set priorities to the courses. (Dong Jianhui, 2017)

5.3 Satisfaction of New Teaching Method

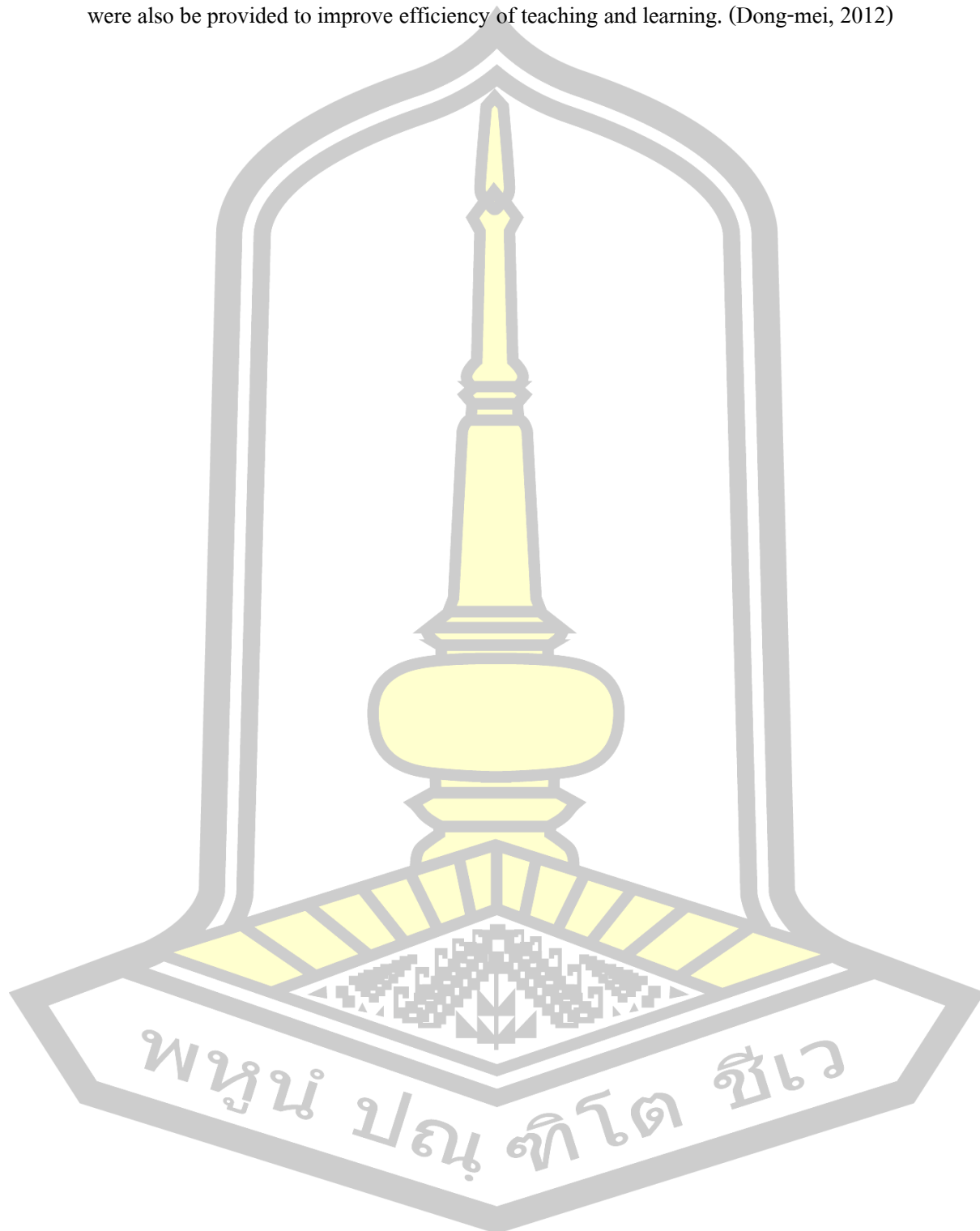
5.3.1 Testing Teachers' satisfaction of New Teaching Method and providing teaching suggestions.

5.3.2 Testing Students' satisfaction of New Teaching Method and providing learning suggestions.

6. Definition

Erhu is a kind of distinctive string-instrument in China. It has a long history and has been upgraded for many dynasties. When it became a formal subject in universities, the corresponding teaching method was improved and upgraded gradually. Although the pedagogy has becoming better and better, some problems have appeared at the meanwhile in teaching practices. In this context, I conducted a study and collected data from three institutes, namely, Guizhou Normal University, Guizhou Educational University and Tong Ren University. Some new teaching

patterns were be explored and applied in practice classes. Meanwhile some related suggestions were also be provided to improve efficiency of teaching and learning. (Dong-mei, 2012)



CHAPTER II

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

1. Introduction

1.1 The History of Erhu

Erhu has a historical standing of more than one thousand years. It witnessed the raising and perishing of Tang dynasty, Song dynasty, Yuan dynasty, Ming dynasty, Qing dynasty and other dynasties in China. At the above times, its development was relatively slow and relevant records was insufficient. In the modern era, Erhu entered a period of rapid development, along which its theories and technique were dramatically upgraded. (Chen Kunpeng, 1998)

Erhu originated from an ethnic minority group in the north of China during the Tang dynasty. It was called the “Xi Qin” at that time. According to a record (Shi Yuan Wen Xi Qin Zuo), the early “Xi Qin” was just a plucked instrument and then it became a stringed instrument progressively. Another book, Yue Shu, recorded that its tube was made of rosewood and the leather was acquired from snakes. It was a premiere predecessor of classic instrument in China, and then it was introduced to Japan in 946 AD. (Retrieved from <https://md.mbd.baidu.com/va705fy?f=cp>)

In the Song dynasty, Erhu was called “Ji Qin”. Along with the growth of the commodity economy back then, people began to pursue spiritual needs while satisfying their production requirements. Increase of music cultural demands promoted the development of “Ji Qin”. According to Shi Lin Guang Ji and Meng Xi Bi Tan, the bow of “Ji Qin” was made with horse tails and players were required to have delicate performance skills. (Retrieved from <https://md.mbd.baidu.com/va705fy?f=cp>)

In the Yuan dynasty, Erhu was renamed as “hu qin”. The manufacture process was studied profoundly and the principles were further elaborated. With the continuous consummation of procedures, performers’ skills also improved enormously, which allowed people to have a more profound comprehension of of Erhu itself. (Retrieved from <https://md.mbd.baidu.com/va705fy?f=cp>)

In the Ming and Qing dynasty, cultural exchanges between ethnic groups became more and more frequent. Consequently, “Hu Qin” became widely known as one of the primary instruments of folk opera accompaniments and instrument ensembles. Many folk artists also devoted themselves into playing different kinds of “Hu Qin” according to the specific functions, while each type of “Hu Qin” had its distinct timbre, which greatly enriched people's cultural activities. (Retrieved from <https://md.mbd.baidu.com/va705fy?f=cp>)

In the long period of empires, Hu Qin was used to be considered as a crude instrument in the eyes of the rulers, so that it could not be taken seriously and could not be performed without accompanies. Some Hu Qin artists were reduced to busking, which also impeded the development of this instrument. But when it came to modern times, Hu Qin was renamed Erhu and entered a new track of development. (Retrieved from <https://md.mbd.baidu.com/va705fy?f=cp>)

During those days, Erhu was modified a lot in many aspects. There has been a lot of innovations in playing techniques and performing works. In the composition of Erhu's works, a large number of modern elements were integrated, and the standard of playing techniques was tremendously improved. The repertoire was increasing and the style became more and more diversified. There were many problems, nevertheless, emerging during the teaching practices. In this respect, this study was performed in a hope of making the playing techniques more systematic, which requires identification of relevant problems. Furthermore, Chinese musical disciplines should be included as a subject into music culture studies and constituted a database not only for Erhu, but also for other instruments. (Cai J, 2010)

The following paragraphs provide a brief introduction of Erhu majors in colleges and universities.

1.1.1 Teaching Objectives

Colleges are supposed to be places that promote students' moral, intellectual and physical development, and help them to build a good humanity background and accomplishments. Instructors should help students to master Erhu playing skills and other fundamental music knowledge and skills, so that students could become qualified music practitioners with certain creative abilities that could meet the needs of the society.

1.1.2 Teaching Requirements

Students in this major are required to learn the basic knowledge of Erhu performance and music education, receive the basic training of music knowledge and experiments, and acquire the basic ability to engage in music education, educational research and music performance.

Students are supposed to acquire the following professional knowledge and skills through professional study of Erhu:

- 1) Capable of playing Erhu at a high level, such as solo, ensemble, ensemble and orchestra, and playing many pieces of works at home and abroad;
- 2) Solid music basic knowledge and abilities, including good music hearing, solfeggio ability, basic music technical knowledge, preliminary application skills, and music analysis abilities;
- 3) Basic ability and professional proficiency to engage in music career, familiar with education laws and regulations, master basic knowledge of music education theories, have preliminary music teaching practice ability, capable of utilizing modern equipment and adapting to the requirements of future education and teaching development;
- 4) Understand the development trend of music field, acquire extensive cultural literacy through interdisciplinary penetration;
- 5) Have strong language expression abilities and scientific research skills; (Li Jianxiong, 1995)

1.1.3 Supporting Courses

- 1) Basic music theory
- 2) Solfeggio and ear training
- 3) National folk music introduction
- 4) Chinese music
- 5) Western music
- 6) Vocal and the piano
- 7) Advanced harmony
- 8) Analysis of melody style and works
- 9) Impromptu piano accompaniment
- 10) The analysis and composing songs

- 11) Chorus and conductor
- 12) Computer music making
- 13) Form, dance and music teaching
- 14) Music aesthetics
- 15) Instrumental music
- 16) Introduction to arts

1.1.4 Educational Practice

- 1) Internship principle: places of internship should be arranged by the schools under the tutorial system, and the duration should be within 8-10 weeks, generally completed in the seventh semester.
- 2) Internship: teaching practice includes preparation, classroom teaching, after-class activities, and educational surveys.

1.1.5 Graduation Paper

- 1) The tutorial system should be applied and arranged by college instructors. Graduation paper should be finished before graduation in the following steps: 1. instructors should guide students to look up the materials, determine the topic and write outline of the paper; 2. instructors should help students to complete the paper; 3. Thesis defense and assessment.
- 2) Requirements for paper writing: 1. The topic should keep in line with the requirements of professional disciplines, show certain academic values and practical significance, and have correct views; 2. Arguments should be organized reasonably with clear logic and fluent language, and should meet the basic requirements of paper writing; 3. The paper should include a standard and complete outline, bibliography, literature review part and should be modified from the first to final draft.

1.1.6 Length of Program and Degree Granting

- 1) Length of Program: four years (normal), 3 to 6 years of schooling;
- 2) Graduation: students who are qualified morally, intellectually and physically will be granted graduation if they have completed the Erhu courses and other courses stipulated in the training plan and obtained corresponding credits;

3) Degree: students who are approved to graduate will be granted the bachelor's degree of Erhu performance after examination by the academic degree committee of the school and in accordance with relevant regulations of the state and the university.

1.2 Representative Personages

1.2.1 Liu, Tianhua

Liu, Tianhua (1895-1932), a native of Jiangyin, Jiangsu Province, was a Chinese composer and performer in modern times.

Liu, Tianhua's parents died early when he was young and his family was poor, but he loved music very much. He devoted all his life to the improvement of Chinese music and music creation and teaching. His music achievements are mainly reflected in folk instrumental music. He visited folk artists, collected folk music and conducted in-depth research on national music to find out the advantages and disadvantages of national music. The idea is to improve national music by learning western music. We cannot remain the same, nor can we westernize everything. We should not only keep the essence of national music, but also learn the advanced music thought and composing techniques from the west. He improved the music appreciation ability of Chinese people, popularized and promoted music education. His contributions to the Erhu and pipa are as follows:

1) Erhu:

Before him, Erhu players were all folk artists with low social status, while Erhu was an accompaniment instrument for folk opera and local music. He borrowed the playing skills of the violin, upgraded the materials made by the Erhu, adjusted the intonation, beautified the timbre and improved the performance. At the same time, he summarized Erhu performance technology and made innovations to establish a systematic Erhu teaching method, which turned Erhu into a solo instrument, elevated it into higher music education and helped it become a specialized subject in universities, which initiated a rapid stage of Erhu development. (Jian-pei Z. H. A. O., 2003)

Creation of solo pieces: "Liang Xiao", "Yue Ye", "Kong Shan Niao Yu", "Bing Zhong Yin", "Xian Ju Yin", "Bei Ge", "Guang Ming Xing", "Ku Men Zhi Qu", "Zhu Ying Yao Hong" and forty-seven Erhu etudes. (Fu Lihua, 2009)

2) Pipa:

Liu, Tianhua invented a new type of pipa in accordance with the western law of the twelve equal parts to ensure that pipa could have accurate intonations and play chromatic scales. At the same time, he widened the playing range of the pipa, innovated many playing techniques, and greatly improved the effect of pipa performance.

Solo: "Gai Jin Cao", "Ge Wu Yin", "Xu Lai", and fifteen pipa etudes.

Through his creation and innovation, Liu, Tianhua made Erhu a kind of specialized solo instrument and produced a profound impact on the development of Erhu music art.



Figure 4 Liu Tianhua

Retrieved from

https://ss0.bdstatic.com/70cFuHSh_Q1YnxGkpoWK1HF6hhy/it/u=2686609170,2468629514&fm=26&gp=0.jpg

1.2.2 A Bing

A Bing (August 17, 1893 -- December 4, 1950), formerly known as Hua, Yanjun, was born in Wuxi city and was folk musician.

Hua, Yanjun's mother died when he was three years old. His father was a Taoist priest who was proficient in all kinds of music knowledge, thus he was influenced by his father

since he was young, and mastered the playing methods of most instruments, especially Erhu. Later, when his father died, Hua, Yanjun learned some habits and bore a heavy burden of life. He fell ill and had no money to cure his blindness. During his lifetime, Hua, Yanjun created and performed more than 270 pieces of folk music works, including six pieces of Erhu music— "Er Quan Ying Yue", "Ting Song", "Han Chun Feng Qu"— and pipa arpeggio music— "Da Lang Tao Sha", "Zhao Jun Chu Sai" and "Long Chuan".

His representative work, Er Quan Ying Yue has being celebrated all over the world and all the people called him A Bing the blind affectionately. A Bing's contribution to Erhu performance and creation was particularly outstanding. The original folk Erhu was played on the original position, while he extended the higher positions and more flexible exchanges. He also gave full play to the beautiful tones of inner string and invited plucked skills on the empty string. A more memorable breakthrough was that he tied to adjust the tuning lower when he played his works. These were all great inventions at that time.



Figure 5 A Bing

Retrieved from

<http://s15.sinaimg.cn/mw690/005uYpQ8zy6KKmxVKCq0e>

1.2.3 Lü, Wencheng

Lü, Wencheng (May 1898-1981) , a Guangdong music composer and Erhu performer.

Lü, Wencheng loved music since his childhood, but his life was hard. He began to work as a child laborer at a very young age. He went to a tea house to perform various Cantonese

operas, and he also worked as a handyman in many music clubs. Lu was very good at learning, which helped him accumulate a wealth of traditional folk music and Western music knowledge. He combined traditional Chinese folk music melodies with Western harmony and created a new form that maintained both Chinese national styles and harmony music. On this basis, he reformed the Erhu and Gaohu, further enhanced the sound of the instrument, and created a lot of new playing skills, which as a result enriched the Erhu's playing form.

For example, he shortened the traditional piano rod of Erhu to an appropriate extent, substituted the outer string of Erhu into a steel string, which improved the tuning of Erhu and extended the range by two or three positions. He also created techniques such as changing handles and sliding finger skills. At the same time, a new instrument, Gaohu, was reformed on the basis of the early Erhu. Since then, he had dedicated his life to Guangdong music mining, innovation, communication and development, drawing on the skills and styles of absorbing different national music into Guangdong music, greatly enriching Gaohu's expressive power and making Gaohu a trademark of Guangdong music. By playing musical instruments, Lǚ Wencheng made a huge contribution to Cantonese music. He created hundreds of musical works, including "Bu Bu Gao", "Ping Hu Qiu Yue" and "Fish Song Night Singing".



Figure 6 Lǚ Wencheng

Retrieved from

<http://www.yueqiquan.com/d/file/zhishi/zatan/8e65851abb00d2fc53bda7bda755ba99.jpg>

1.2.4 The Other Erhu Performers

There are many other performers who made their contributions to Erhu performance and education. The performers listed below are actively participants in Erhu education and have made great contributions to the development and dissemination of Erhu music:

Sun Wenming, Jiang Fengzhi, Huang Huaihai, Zhang Rui, Wang Guotong, Liu Mingyuan, An Ruli, Min Huifen, Zhu Changyao, Chen Yaoxing, Zhao Hanyang, Liu Changfu, Xu Shude, Zhao Yanchen, Ju Wenyu, Song Guosheng, Wang Yongde, Deng Jiandong, Song Fei, Yu Hongmei, Yan Jiemin, Zhang Zunlian, Cao Dewei, Sun Huang, Ma Xianghua, Zhou Wei, Chen Jun, Gao Shaoqing, Xu Ke and so on.

1.3 Structure of Erhu

Erhu is usually made of wood and there are many steps in the manufacturing process. A complete *Erhu* consist of many assembly parts, including a head, two pegs, a looping cord, a handle, a membrane, a drum resonator, two strings and a bow.

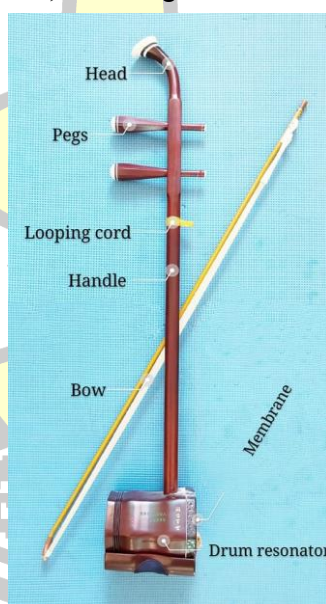


Figure 7 structure of Erhu

Retrieved from <http://www.ixueyi.com/uploadfile/20151020/201510201119441759.jpg>

1.3.1 Pegs

There are two pegs that adjust the pitch through rotations. The upper axis controls the inner string, while the lower axis controls the outer string. There are two kinds of axles. The

first is a wooden axle that is stable for tuning, but it is hard to adjust the accurate pitches. The second is a mechanical axle that can adjust the string fast and freely, but it is often prone to loose and induces to other similar phenomenon which lead to digression out of the correct tune. Both of the two kinds of axles have advantages and disadvantages, and professional players always use fine-adjustment to achieve a high degree of accuracy.

1.3.2 Looping Cord

The looping cord is usually made of cotton, silk and other materials. It is designed to fix the string and handle by winding around eight times. The looping cord should be handled evenly, carefully and overlapping should be avoided. It has an important effect on intonation. There are two types of looping cord, that is, the wire-fixed looping cord and the metal-fixed looping cord. Performers may pick the choice based on their preference, but the former one is more commonly used.

1.3.3 Handle

Handle serves as the pillar of *Erhu* and supports the whole body of the instrument. Different kinds of woods are selected to be the materials. Length of a handle is around 80 centimeters and the diameter is about 0.55 inches. In different ages, however, *Erhu* may be produced in different sizes and lengths. The upper part is the head which is curved like the neck where the two pegs are installed. The bottom part is straight and is connected to the drum resonator. Two strings connect with the upper part and insert into the drum resonator in the lower part. Actually, a pure tune requires the choice of better material for handle and perfect proportion in the making process.

1.3.4 Membrane

Membrane is the main vibrator of *Erhu*. It is usually expensive and plays an important role of the sound generated. Membrane is generally made of different parts of python skin. Since the python scales are rough and flat; the color exhibits comparison and coordination, and the thickness is appropriate and permit elasticity, it is proved to be first-choice material for *Erhu* membrane. But the volume of new *Erhu* is always low because of the unused membrane, improvement of which requires a period of time of practice so that the vibration could become normal. After that, the membrane will pose a direct effect on sound quality and volume, and the quality of sound will become better and better.

1.3.5 Drum Resonator

Drum resonator acts as the resonance tube of *Erhu*. The right side of it is wrapped tightly with the membrane. It causes the vibration of membrane through the friction between strings and the bow. Sounds are generated when players take the push-pull motion of the bow. The texture and shape of the tube have crucial effects on sound quality and volume. There are various shapes of drum resonators like hexagonal and octagon. A hexagonal drum resonator is delicate, while an octagon one is rough, but the former is most commonly used. Appropriate proportion of drum resonator ensures the beauty of *Erhu* and is conducive to the improvement of tone. There is a sound window embedded behind the tube. It has significant functions, such as enhancing sound resonance and transmission, and decorating the instruments.

1.3.6 Strings

There are two strings that act essential roles of vocalization in *Erhu*. The outer string is a treble one and the inner string is a bass one. In usual cases, the two strings always keep the interval of pure five. The quality of strings directly affects the tune. There are three kinds of strings: the metal string, which has good tension and intonation, high sensitivity and strength, silk string, which produces sounds softer and more elegant than metal strings, and strings made by other materials. They are different in potential force, intonation and tendency to break strings and change notes. The choice of strings depends on the players.

1.3.7 Bow

Bow is composed of an arch and hair. The length of arch is around 80 cm and the hair connect with two sides of the arch. Arch is made of bamboo and the hair is made of horsetail or other nylon alternatives. Hair is installed in the middle of two strings to produce friction. It should be arranged in a neat and flat way with proper length and uniform thickness.

1.3.8 Bridge

Bridge connects the strings and the membrane. It is small in size and usually made of wood. Bridge helps the membrane to generate sounds through transmitting vibrations of the string to the skin. Therefore, the material selection and the shape of code greatly influence the sound quality of *Erhu*.

1.4 Manufacture Process

- 1.4.1 Step one: The making of handle and head
- 1.4.2 Step two: The making of drum resonator
- 1.4.3 Step three: The making of covering membrane
- 1.4.4 Step Four: The making of pegs.
- 1.4.5 Step five: The making of sound window.
- 1.4.6 Step six: The making of bow.
- 1.4.7 Step seven: The making of strings.
- 1.4.8 Step eight: The making of bridge.
- 1.4.9 Step nine: The making of looping cord.
- 1.4.10 Step ten: Installation of different parts.

1.5 Playing Techniques of Left Hand

1.5.1 Sitting Position

- 1) Keep the chest straight up, the legs shoulder-width apart, the knees a little closer, the left foot in front, and the right foot behind;
- 2) Keep the center line of the body inclined to the left a little, so that the center of gravity falls to the left of the body.
- 3) Keep the back straight and sit at the one-third position of the seat.

1.5.2 Tuning

The regular tone of *Erhu* is D-A string. That means the inner string is set as “d 1” on the piano, and the outer string is the international standard sound “a1”. The interval between the inner and outer strings always remain perfectly five.

When tuning the strings, players should adjust the outer string, which requires them to rotate the peg below, pull and listen while tuning, and progressively adjust the outer string to a pitch equal to the standard sound. Then the players should rotate the peg above in the same way and gradually tune the inner string to a set pitch of d1.

If high-quality tuning is required, a fine-adjustment is also needed on the string to make the pitch more accurate. After the adjustment, players should press the string with their fingers of the left hand and then listen to the intonation again and again to make sure the pitch is fixed.

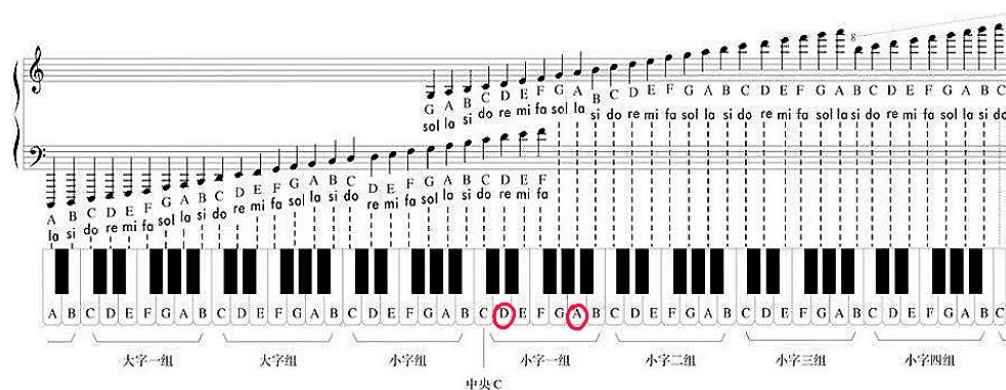


Figure 8 The pitch of inner string is marked by red circle on the left side; the pitch of outer string is marked by red circle on the right side

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https://ss1.bdstatic.com/70cFvXSh_Q1YnxGkpoWK1HF6hhy/it/u=3710552732,1864200327&fm=26&gp=0.jpg

1.5.3 Fingers on the String

Pressing the string is the basic technique of *Erhu* playing and it is an important means to change the intonations. According to the finger order marked on the score, players have to change their fingers all the time. In general regulations, the index finger is first finger; the middle finger is second fingers; the ring finger is third fingers, and the little finger is the fourth fingers. (Bu X. M., 2012)

1) The Force of Pressing String Should Be Just Right

Players should strive to press the strings with the suitable pressure of fingers to produce pure and exquisite sounds. But it should be noted that too much slack of fingers will result in weakness and make sounds hollow and distorted. If players press the string too hard, their fingers will exert a stiff pressure on the string, which may affect the string's free vibration and produce a stiff sound. (Bu X. M., 2012)

2) Use the Fingers Adequately.

When pressing the string, players should move fingers by controlling the root joint of fingers and then resting the fingers on the string easily and naturally. The longer the players practice, the more flexible the fingers will become. But no matter how fast or slow it is, it must be the action of the root joint.

3) Keep All Fingers Relaxed

The contact spots between fingers and strings locate on the upper part of the fingertips, which ensures that the fingertips are consistent with the contact points on both inner and outer strings. Besides, players should keep their arms, wrists, hands and fingers relaxed, keep the fingertips sensitive, elastic and on the right position of strings. (Cheng D, 1993)



Figure 9 Fingers on the string

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https://ss1.bdstatic.com/70cFuXSh_Q1YnxGkpoWK1HF6hhy/it/u=2003191368,2030756627&fm=26&gp=0.jpg

1.5.4 String-kneading of Four Fingers of the Left Hand.

String-kneading is one of the most important technique of left hand of Erhu playing. It is responsible of making the music more vivid, graceful and infectious. String-kneading requires one finger to roll at a certain position on the string to produce a kind of undulating sound. The specific principle is as follows: when fingers of the left hand are pressing on the string, the

wrist is controlled by the forearm and the finger is affected by the wrist movement, so that a constant vibration is created on the string. Elastic string-kneading of the fingers causes the tension of strings to change and affects the fluctuation of sound waves. The speed and strength of string-kneading should be adjusted according to the emotion of the music. (Bu X. M., 2012)

String-kneading is generally divided into three categories: rolling, sliding and kneading. Rolling is the most commonly used move, but the specific type of string-kneading is determined by the repertoire in the performance. There are a few points to be noted in the exercise:

- 1) The practice of string-kneading should start from slow speed first and then carry on the training to the fast speed progressively.
- 2) Practice with constant speed and strength;
- 3) Keep the hands and fingers relaxed while practicing;
- 4) Strengthen the movement training for flexibility of the little finger (flexibility of the little finger is the worst);
- 5) Keep the left arm, palm and fingers relaxed sufficiently;
- 6) Practice the fingers separately first.

1=D (1 5 弦)

3 2 3 5 | 1 - | 7 6 3 6 | 5 - | 1 7 6 5 | 3 5 6 1 | 4 3 2 1 | 2 - | 3 2 3 5 |

10 | 1 - | 7 6 3 5 | 6 - | 1 6 5 3 | 6 5 3 2 | 5 3 2 3 | 1 - | 1 7 6 | 6 5 |

20 | 3 2 3 | 5 - | 1 7 2 | 2 1 | 7 5 7 | 6 - | 3 5 1 7 | 2 6 5 3 | 4 2 3 5 | 1 - ||

Figure 10 The string-kneading etude

Retrieved from Erhu textbook.(40)

Zhao Hanyang (1993) *Erhu Primary Course*. Tong Xin publishing house.

Note: The skills of string-kneading were marked by the blue symbol. This piece of works is the etude of string-kneading with different speed and different loudness, it requires the comparison of melody according to the pitch and rhythm.

1.5.5 Hold Shift

It is very important to change the position of *Erhu* in actual application. When performing a melody over one octave, the technique of holding shift must be used. In addition, almost all of the major solo pieces have more than one octave or even two, three octaves. Holding shift may be conducted by the same finger or different fingers, and there are fast-speed holding shift and slow-speed holding shift techniques. (Bai Ruxue, 2017)

The instantaneous alterations not only reflect the consistency and coherence, but also reflects the sense of local coordination and freedom. The shift from treble to bass is easier to control, because it is the downward force and is less strenuous, hence players' hands and arms could fall down naturally in the direction of the strings. On the contrary, the shift from bass to treble is more difficult because it requires upward lifting force, which is more strenuous. This way players have to get rid of the weight of their hands and arms to complete the operation.

Therefore, players are supposed to increase the elasticity of their wrist movement and their fingers to make the movement smooth and well-placed. In particular, when it comes to the rapid holding shift and alternate bow between inner and outer strings, players have to reduce redundant movements and enhance the flexibility and speed of the shift. There are a few points to be noted in the exercise:

- 1) Move wrist and slide fingers along the strings during the process of holding shift;
- 2) No matter shifting up or down, keep relaxed and natural during the whole process;
- 3) Produce the variations of light, heavy, slow or fast paces according to music requirements;

4) When the target tone is reached, the shape of fingers should be restored immediately, so as to complete the next operation successfully;

5) The whole movement should be performed in turn and completed within the time limit of the notes.

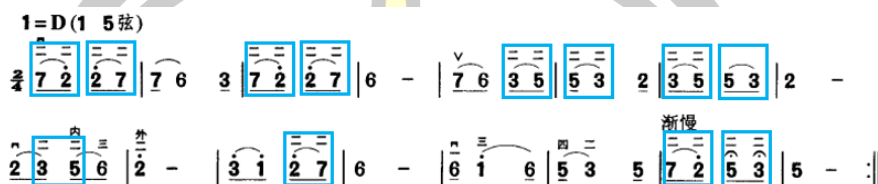


Figure 11 The hold shift etude in G key for example
Retrieved from Erhu textbook.

Zhao Hanyang (1993) Erhu Primary Course. Tong Xin publishing house. (32)

Note: The skills of hold Shift were marked by blue symbol. This piece of works is the etude of hold Shift with different types, it requires the comparison of different speed according to the context of music.

1.5.6 Tremolo

Tremolo refers to a special sound effect when one finger is pressing on the string and another finger is conducting consecutive up-and-down motions at the same time.

Tremolo is mostly in a two-interval type, but sometimes other-interval types are employed due to the repertoire (three-tone trill is usually used for songs that express the prairie style). There are a few points to be noted in the exercise:

- 1) Keep the fingers flexible elastic; (Cheng Dongming, 1993)
- 2) Increases the ability of fingers of moving independently;
- 3) Keep fingers relaxed to ensure lasting or fast movement;
- 4) In the beginning, practice slowly to make sure the standard of movements is met;
- 5) Tremolo is basically done with fingers next to each other, and it takes additional practice coupled with tacit understanding.

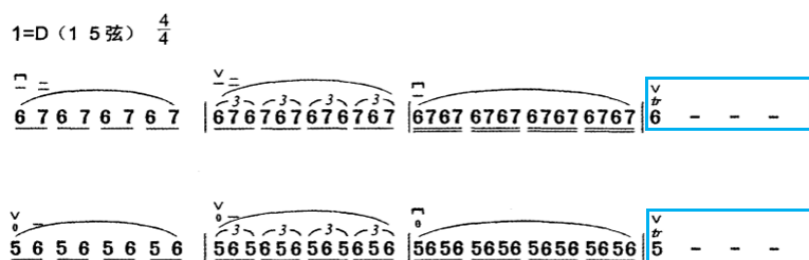


Figure 12 The tremolo etude

Retrieved from Erhu textbook.

Zhao Hanyang (2013a) Erhu fingering technique training. Lan Tian publishing house.

(139)

Note: The skills of tremolo were marked by the blue symbol. This piece of works is the etude of tremolo with different speed and different loudness, it requires the uniform of voice.

1.5.7 Glissando

Glissando is the sound produced by a conscious slide of the string. Different sliding methods produce different sliding effects.

The most critical point is to use glissando properly and adjust the movements based on the style and emotion of the music. If it is for decorative purposes, the bow and fingers should switch between light and heavy movements to achieve an emotional effect; transition between the grace note to the original note should be natural as well. If the music is supposed to be continuous, the transition should be seamless. The fingers should move up and down on control of the wrist. To achieve that, players should move their wrist first, then move their fingers. If they move fingers off their wrist, the flexibility of movement will be reduced and the effect of sliding will be stiff. There are different kinds of classifications based on various aspects:

- 1) In terms of the glissando speed, there are fast glide and slow glide;
- 2) In terms of the glissando magnitude, there are large glide (three degrees above) and small glide (three degrees);
- 3) In terms of the glissando direction, there are upper glide (from bass to treble) and lower glide (from treble to bass);

4) In terms of the glissando time, there are first glissando (the glissando appears before the original note) and after glissando (the glissando appears after the original note);

5) In terms of the glissando force, there are light glide (emphasize the connection between two sounds) and light glide (emphasize the process of glide).

1=D (1 5 弦) $\frac{2}{4}$

The musical notation consists of two staves. The first staff contains the following notes and glissando symbols: 2, 3, 5, 3, 5, 3, 6, 1, 7, 2, 7, 6, 5, 6, 1, 6, 3, 5, 6, 1, 6, 5, 6, 4. The second staff contains: 3, 5, 3, 2, 3, 2, 3, 5, 3, 2, 7, 6, 5, 1, 5. Blue boxes highlight the notes 2, 3, 5, 3, 5, 3, 6, 1, 7, 2, 7, 6, 5, 6, 1, 6, 3, 5, 6, 1, 6, 5, 6, 4 in the first staff and 2, 3, 5, 3, 2, 7, 6, 5, 1, 5 in the second staff. Glissando symbols are placed above or below the notes to indicate the glide.

Figure 13 The glissando etude

Retrieved from Erhu textbook.

Zhao Hanyang (2013b) *Erhu Primary Course*. Tong Xin publishing house. (43)

Note: The skills of glissando were marked by the blue symbol. This piece of works is the etude of glissando with different speed and different loudness, it requires the close connection of two notes which apply the skill of glissando.

1.5.8 Overtone

Erhu overtone is the sound produced when the left hand lightly touches the string while the string is rubbed by the bow. It often exhibits an ethereal feeling.

The overtone has its regulations because of physical phenomenon. The whole string length that could produce vibrations extends from the code to the looping cord part. When the whole string vibrates, the segmented part of the string will vibrate as well, as does the half part, the second part, the third part and the fifth part of the string and so on. The total occurrence of vibration produces the lowest pitch and the simultaneous segmental vibrations produce a sound different from the pitch-overtone combination.

The overtones of *Erhu* are divided into "natural overtones" and "artificial overtones". Natural overtones must be produced by the vibration of the whole string by pressing the left hand lightly on the string at the right location, while using the right hand to carry the bow

with a relatively heavy force. Artificial overtones are obtained by pressing the string with the index finger and little finger together. The two fingers must remain within the pure fourth interval and the upper finger should keep attaching to the string lightly while the lower finger pressing on the string hard. In actual performance, natural overtones are more frequently used, whereas artificial overtones are more difficult to play.

There are several types of centralized classifications:

- 1) Keep left hand and fingers relaxed;
- 2) The sound only comes out when the hand and fingers are on the right location on the string, especially when playing two distinct kinds of overtones;
- 3) The bow is always moved heavily to cooperate with the left hand.

Natural overtones :

1 = F (6 3 弦)

Artificial overtones:

1 = D (1 5 弦)

Figure 14 The overtone etude

Retrieved from Erhu textbook.

Zhao Hanyang (1993) Erhu Primary Course. Tong Xin publishing house, (45-46)

Note: The skills of overtone were marked by the blue symbol. This piece of works is the etude of overtone with different speed and different loudness, it requires the clear voice of overtone melody.

1.5.9 Plucked String

Plucked string is a special expression technique in *Erhu* performance. It could produce elastic sound and generate a sharp contrast of tones with general bow-moving sound. It

always gives audience a special aesthetic feeling. The technique of *Erhu* plucked string can be divided into three categories: left hand-plucked string, right hand-plucked string and two hand coordination-plucked string technique.

In right hand-plucked string, the right hand drops the bow first and then moves to the string to do plucked action. In this process, players always use the index finger and keep it straight to ensure the tension of plucking.

In left hand-plucked string, players pluck the string with their fingers of the left hand in a hook shape. All four fingers should pluck the string separately and produce different melodies through continuous plucking acts.

In two hand coordination-plucked string, players pluck strings using their left hand and meanwhile move the bow using their right hand, which could produce a consonant double sound effect if the players have superb skills.

There are some instructions for plucked string as follows:

- 1) The hair of the bow should be kept away from the string for left hand-plucked string and right hand-plucked string, otherwise there will be no sound being generated at all;
- 2) Players should use the fingertips to pluck strings, because it is the most flexible part of fingers and allows the players to move quickly;
- 3) The time value of the plucked string should be accurate and should be used properly.

1=F (6 3 弦)

6 1 6 5 | 3 5 3 | 6 | 5 3 5 1 | 6. | 0 6 6 | 3 5 3 2 |

1 6 3 2. | 5 3 2 1 3 1 | 6. | 0 6 6 | 5 3 2 1 3 5 | 6. | 6 | 6 |

Figure 15 The plucked string etude

Retrieved from Erhu textbook.

Zhao Hanyang (1993) *Erhu Primary Course*. Tong Xin publishing house. (448)

Note: The skills of plucked string were marked by the blue symbol. This piece of works is the etude of plucked string with different speed and different loudness, it requires the vivid expression of emotion according to the pitch and rhythm.

1.6 Playing Techniques of Right Hand

1.6.1 Principles of Holding the Bow

All kinds of bow instruments have their own special methods of bow holding. During *Erhu* performance, players are supposed to put the bar of the bow on the third joint of their index finger to provide necessary support to the instrument. The first and second joints of their index finger should form small diagonals with their thumb. Their thumb should be pressed against the bar of the bow with the top joint of the finger. The middle finger and ring finger should be inserted between the bow bar and the hairs. The little finger should remain in a natural curving shape and relaxed. In the actual playing process, players mainly use the strength of their thumb and index finger to control the direction and balance of the bar of the bow. When playing the inner string, players usually exert forces on their middle and ring finger simultaneously to draw the bow hairs inward, which makes the bar and hairs of the bow form an opposite pressure. When playing the outer string, players usually put their middle finger on the dorsal side of the second joint to generate a gentle pressing force against the bow. (Lin, 2002)

The requirements of holding the bow are listed below:

- 1) Conduct training on the principle of straightness. Avoid swinging up or down;
- 2) The bow and the membrane should approach a right angle. In physics, *Erhu* makes the best sound when the bow is rubbed at the right angle and played with the right force;
- 3) The right wrist should swing with the bow as easily as a fish does with its tail in the water. The wrist should move with the support of the shoulder and the arm. Learn to be flexible in the wrist, which will be very helpful.

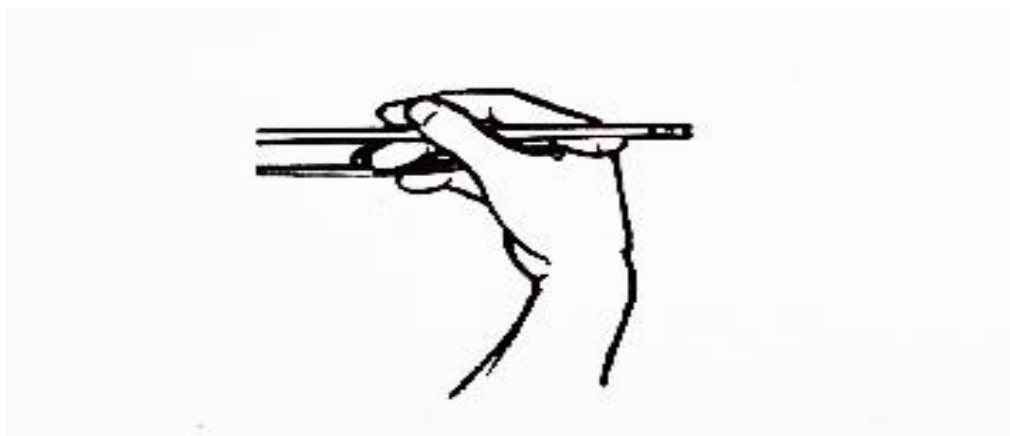


Figure 16 The posture of right hand

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https://ss0.bdstatic.com/70cFvHSh_Q1YnxGkpoWK1HF6hhy/it/u=211442791,829649903&fm=26&gp=0.jpg

1.6.2 Slow-speed Bow

The slow-speed bow refers to a playing technique involving the entire bow from the thread to tail of the bow. Long and slow sounds are the most commonly used skills. It is the basis of *Erhu* performance, also the focus and difficult part of this instrument. It is a state of stretch involving the fingers, wrists, forearms, shoulders and even the entire body of players. When the slow long bow is played, the first half time value of notes needs to be played by using the shoulder as the center axis and the upper arm as the primary driving point. Meanwhile, players need to drive their forearm and hand to control the speed and steady movement of the bow. When the first half time value of a note is completed, it is advisable to use about just 1/3 of the bow segment, then leave about 2/3 of the bow segment to the second half time value of the note. This way the players will help enough segments to do the variations includes strength and weakness. (Li Xiuqing, 2008)

There are a few points to be noted related to the issues of slow bow technique:

- 1) Transport the bow in a flat, straight, uniform way;
- 2) Relax both shoulders naturally;
- 3) Keep the hair uniform and stable;
- 4) The body has to make the coordinated stretch and balanced, stable movement;
- 5) Make sure that there is no sign of bow changing from pull to push.

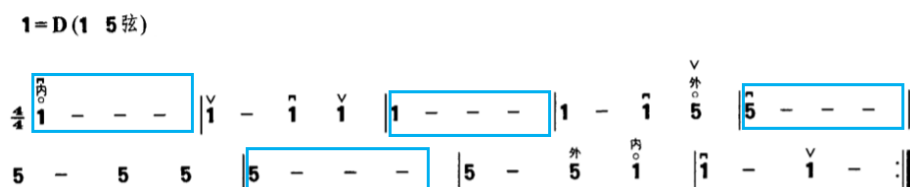


Figure 17 The slow-speed bow etude

Retrieved from Erhu textbook.

Zhao Hanyang (1993) Erhu Primary Course. Tong Xin publishing house. (20)

Note: The skills of slow-speed bow were marked by the blue symbol. This piece of works is the etude of slow-speed bow with different duration and different loudness, it requires the comparison of melody according to the pitch and rhythm.

1.6.3 Medium-speed Bow

Medium-speed bow of *Erhu* refers to the state in which the speed of performance is not too slow or too fast, and the length is not too long or too short. When the middle speed bow is played, the elbow should be used as the center axis and the forearm is supposed to be the main driving point. Players should move their forearm in a flexible and brisk way through the leading of their upper arm. The forearm is required to be highly mobile during the performance so that players can make suitable adjustments to ensure the bow in the accurate position. Moreover, players are supposed to make changes in strength by lengthening or reducing the bow segment within the same unit time. The moderate speed and intensity are suitable for the sound of point and line bonding.

Here are a few points to be noted while playing the instrument:

- 1) Pay more attention to the distribution of the segment;
- 2) The bow should be light, strong and smooth;
- 3) Ensure the bow in a desirable condition of mobility.

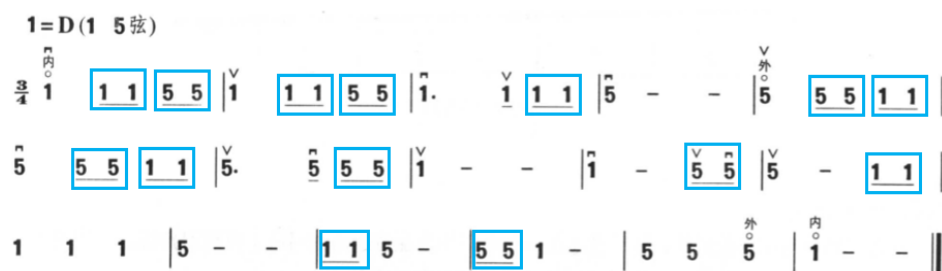


Figure 18 The medium-speed bow etude

Retrieved from Erhu textbook.

Zhao Hanyang (2013a) Erhu Primary Course. Tong Xin publishing house. (21)

Note: The skills of medium-speed bow were marked by the blue symbol. This piece of works is the etude of string-kneading with different duration and different loudness, it requires the comparison of melody according to the pitch and rhythm.

1.6.4 Fast-speed Bow

The fast-speed bow is played on the 16th note at a rate of over 120 beats per minute. It is one of the most difficult techniques which requires the players to coordinate their two hands tacitly. Players are required to achieve accurate position, uniform time value, clear pronunciation and extremely granular sound. In addition, there are often some concomitant difficult skills such as fast string changing and rapid bow jumping, which increase the difficulty of the fast-speed bow technique.

When playing the fast-speed bow, players should use the middle part of their forearm as the center axis and keep their shoulder loose and their elbow bent downward. With the help of the natural gravity of the upper arm and the bow, their forearm could generate a rapid inertia swing, which directly acts on the bow. In addition, it requires the use of rhythmic stress, the graininess of notes, and the contrast of melodic lines that make up of multiple notes.

1) Intonation requires precise control, especially when the left hand needs to move quickly to generate the expected sound;

2) Keep the time values equal. When a fast bow is played on the 16th or 32th quarter notes, each note should be equal in duration;

3) Stress should be clear. The melody contrast should be obvious. As the melody grows stronger, the bow should be lengthened and intensified. When the melody goes down, the bow should be shortened and the strength should reduce;

4) The fast bow should be practiced slowly first, then gradually accelerates after practice and finally reaches the normal speed.

1 = D (1 5 弦)

When playing the martellato, players should make sure that their arms, wrists, fingers and joints are coordinated, relaxed and are able to move separately.

There are some principles of playing martellato-bow as follows:

- 1) Make the martellato sound clear and clean;
- 2) Keep the bow straight and steady;
- 3) The bow should be crescendo or diminuendo according to the melody. Make

the sound in sharp contrast.

(5 2 弦)

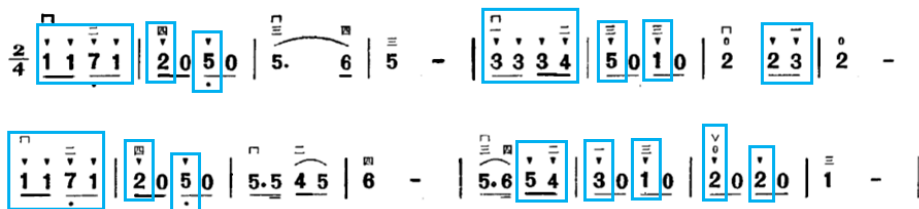


Figure 20 The separate Staccato-bow etude

Retrieved from Erhu textbook.

Zhao Hanyang (1993) Erhu Essential Exercise 300 Pieces. People's music publishing house. (125)

Note: The skills of separate Staccato-bow were marked by the blue symbol. This piece of works is the etude of separate Staccato-bow with different speed and different loudness, it requires the comparison of melody according to the pitch and rhythm.

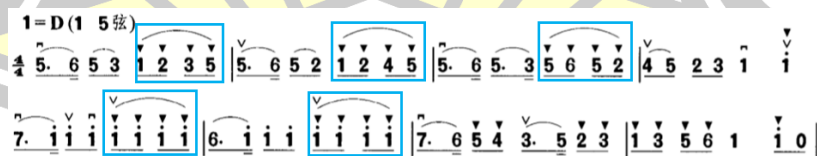


Figure 21 The legato Staccato-bow etude

Retrieved from Erhu textbook.

Zhao Hanyang (1993) Erhu Primary Course. Tong Xin publishing house. (21)

Note: The skills of legato Staccato-bow were marked by the blue symbol. This piece of works is the etude of legato Staccato-bow with different speed and different loudness, it requires the comparison of melody according to the pitch and rhythm.

1.6.6 Tremolo-bow

Tremolo-bow is used to move the bow quickly and make the sound as dense as possible. The actual effect of such a technique exhibits in the homophone repetition of the 32nd note. When the strength is large, the movement of upper arm must be increased and the thumb must be properly strengthened, while the speed of the bow remains fast. On the contrary, when playing with less strength, the upper arm should move less frequently, and strength on the thumb should reduce, so does the speed of bow arch.

There are some principles of performing tremolo-bow as follows:

- 1) Pull on the upper arm to support the lower arm;
- 2) The lower part of the forearm should be relatively relaxed, mainly referring to the forearm, wrist and fingers;
- 3) No matter how strong or weak the bow is, it should be noted that the tremor should be even and the push-pull pronunciation should be unified;
- 4) The tremolo-bow is uncontrollable on the number of notes, but it always keeps vibrating at least eight beats for a quarter note.

1=D (1 5 弦)

Figure 22 The tremolo-bow etude

Retrieved from Erhu textbook.

Zhao Hanyang (1993) Erhu Primary Course. Tong Xin publishing house. (29)

Note: The skills of tremolo-bow were marked by the blue symbol. This piece of works is the etude of tremolo-bow with different speed and different loudness, it requires the comparison of melody according to the pitch and rhythm.

1.6.7 Fling-bow

Fling-bow produces a short jumping sound that starts with either a push bow or a pull bow. When the bow is thrown, the arm should rotate slightly. When the bow is falling, players' fingers should add a little force to the bow. The resulting effect, we could call it "da da da", generally contains three parts. The first "da" is created by a single bow-move and is the sound of the throwing, and the second and third "da" are made by one bow-move and are the sounds of the bow bouncing on the hair of bow. The first "da" is usually stronger than the second and third "da" and all the process must be kept flexible. Whether it is fast or slow, the rhythm should always be followed. Players should reduce the amount of rotation movement of their right arm when throwing the bow and their arm should not be too high up and down, or it will offset the bounce of the bow. When practicing, players are supposed to abide by the principles to make the bow bounce naturally as follows:

- 1) The arm should rotate properly when throwing a bow; the bow can jump only if it moves up and down naturally;
- 2) The movements should always be consistent and the fingers should remain relaxed;
- 3) At the moment of bow throwing, the bow needs to be placed as "flat" as possible.
- 4) The fling-bow requires the bow to move vertically up and down between two strings.
- 5) Each change of bow movement should be closely connected and make sure each group is in the beat range.
- 6) The intensity of a sound varies by the magnitude and strength of the bow.

1 = F (6 3 弦)

Figure 23 The fling-bow etude

Retrieved from Erhu textbook.

Zhao Hanyang (1993) Erhu Primary Course. Tong Xin publishing house. (97)

Note: The skills of fling-bow were marked by the blue symbol. This piece of works is the etude of fling-bow with different speed and different loudness, it requires the comparison of melody according to the pitch and rhythm.

1.6.8 Double Chord

Double chord is applied to make both the inner and outer strings sound at the same time. It always falls into the pure fifth interval and produces a rough tone which helps to make tunes more harmonious. Double-string technique is not a traditional technique. Players have made bold attempts and applications in order to enrich the means of expression of *Erhu*. There are primarily three ways to play the double chord:

1) With the arch bar raised, press the index finger on the arch bar, and the middle and the ring finger on the hair, so that the two strings collide and then generate a double chord sound. This operation could generate a desirable pronunciation effect, but the volume is relatively low.

2) Rub both the inner string and the outer string by the hair of bow simultaneously. This technique can only be played with a short bow or quiver bow under a strong force.

3) Use the bow hairs to swiftly alternate between the two strings and use the delayed hearing phenomena of human ears to create a double-string effect. When playing weakly, it has the feeling similar to a double-tone rotator, but the pronunciation is rough when playing with strength.

Figure 24 The double chord etude

Retrieved

from <http://www.yuesha.com/thread-60979-1-1.html>

Note: The skills of double chord were marked by the blue symbol. This piece of works is the etude of double chord with different speed and different loudness, it requires the comparison of melody according to the pitch and rhythm.

1.6.9 Coordination of Two Hands

Left hand coordination contains a series of techniques such as the vibrato, holding shift, tremolo, glissando and overtone. Right hand coordination includes techniques like slow speed bow, medium-speed bow, fast-speed bow, Martellato-bow, tremolo-bow, Fling-bow and double-string bow. Players should achieve a state of flexible transition and natural relaxation of their two hands.

พหุ ประถมศึกษา

两手配合练习

1 = C (2 6 弦)

中等慢速 嘹亮地

周耀妮编曲

中等快速 活跃地

2/4

10

20

30

40

50

60

70

转1=D (1 5弦)

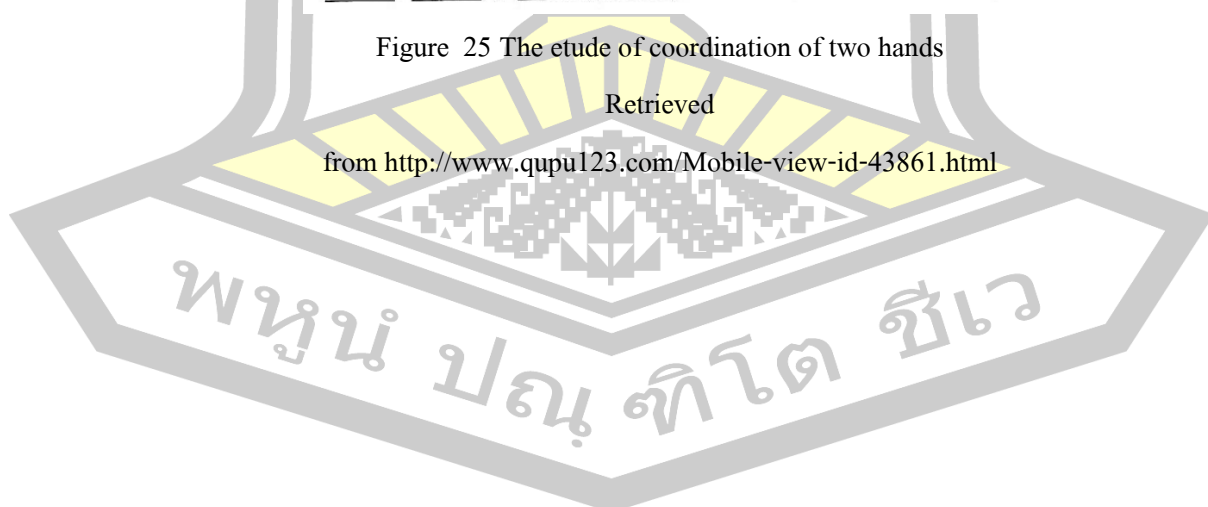
中等慢速 嘹亮地

快速 热烈地

Figure 25 The etude of coordination of two hands

Retrieved

from <http://www.qupul23.com/Mobile-view-id-43861.html>



1.7 Different Keys in Erhu Playing

There are six common keys of *Erhu* as follows:

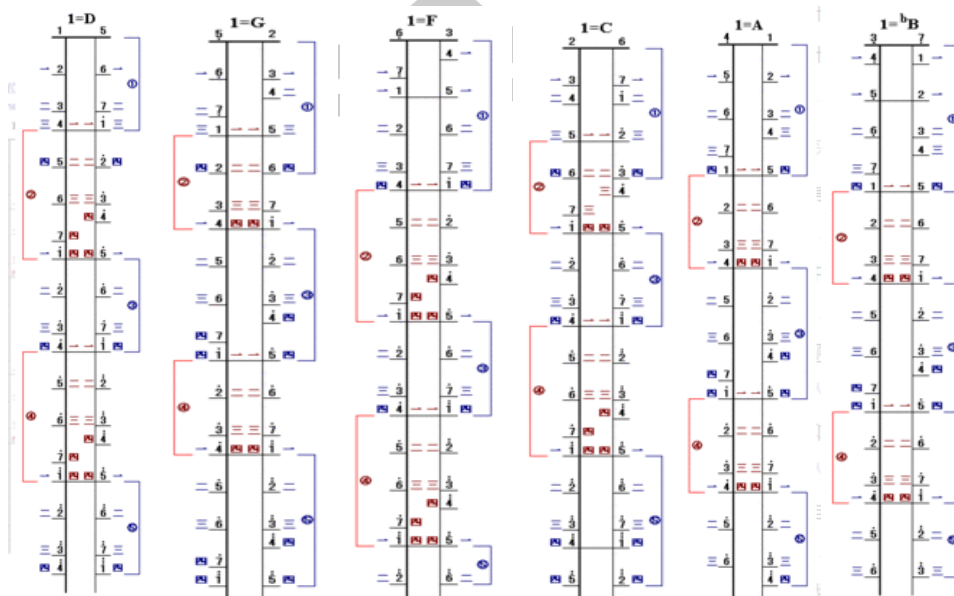


Figure 26 The picture of six common tones

Retrieve from

https://ss1.bdstatic.com/70cFvXSh_Q1YnxGkpoWK1HF6hhy/it/u=565386064,1134707715&fm=26&gp=0.jpg

1.7.1 D key—String (1, 5)

D key is one of the most commonly used tones during *Erhu* performance, also known as the string (1, 5).

In the first position, the inner empty string, first finger, second finger, third finger and fourth finger are represented respectively by 1, 2, 3, 4, 5. The outer empty string, first finger, second finger, third finger and fourth finger are represented by 5, 6, 7, high note 1, high note 2.

In the second position, the inner first finger, second finger, third finger and fourth finger are represented respectively by 4, 5, 6, 7, while the outer first finger, second finger, third finger and fourth finger are represented by high note 1, high note 2, high note 3, and high note 4.

In the third position, the inner first finger, second finger, third finger and fourth finger are represented respectively by high note 1, high note 2, high note 3 and high note 4. The outer first finger, second finger, third finger and fourth finger are represented respectively by high note 5, high note 6, high note 7 and double high note 1.

1.7.2 G key—String (bass5, 2)

G key is one of the most commonly used tones in *Erhu* performance, also known as the String (bass 5, 2).

In the first position, the inner empty string, first finger, second finger, third finger and fourth finger are represented respectively by bass 5, bass 6, bass 7, 1. The outer empty string, first finger, second finger, third finger and fourth finger are represented respectively by 2, 3, 4, 5.

In the second position, the inner first finger, second finger, third finger and fourth fingers are represented respectively by 1, 2, 3, 4. The outer first finger, second finger, third finger and fourth finger are represented by 5, 6, 7, high note 1.

In the third position, the inner first finger, second finger, third finger and fourth finger are represented by high note 1, high note 2, high note 3, high note 4. The outer first finger, second finger, third finger and fourth fingers respectively are 5, 6, 7, high note 1.

1.7.3 F key—string (bass6, 3)

F key is also a commonly used tone during *Erhu* performance. It is also known as the String (bass6, 3).

In the first position, the inner empty string, first finger, second finger, third finger and fourth finger respectively are represented by bass 6, 1, 2, 3, 4. The outer empty string, first finger, second finger, third finger and fourth finger are designated respectively as 3, 5, 6, 7, high note 1.

In the second position, the inner first finger, second finger, third finger and fourth finger respectively are represented by 1, 2, 3, 4. The outer first finger, second finger, third finger and fourth finger respectively are designated as high note 1, high note 2, high note 3, and high note 4.

In the third position, the inner first finger, second fingers, third finger and fourth fingers respectively are represented by high note 1, high note 2, high note 3, high note 4. The outer first finger, second finger, third finger and fourth finger respectively are designated into high note 5, high note 6, high note 7, and double high note 1.

1.7.4 C key—string (2,6)

C key, also known as the String (2, 6), is another frequently used tone during *Erhu* performance.

In the first position, the inner empty string, first finger, second finger, third finger and fourth fingers respectively are represented by 2, 3, 4, 5, 6. The outer empty string, first finger, second finger, third finger and fourth finger respectively are represented by 6, 7, high note 1, high note 2, and high note 3.

In the second position, the inner first finger, second finger, third finger and fourth finger respectively are represented by high note 5, 6, 7, and high note 1. The outer first finger, second finger, third finger and fourth fingers respectively are designated into high note 2, high note 3, high note 4, high note 5.

In the third position, the inner first finger, second finger, third finger and fourth fingers respectively are designated into high note 1, high note 2, high note 3, and high note 4. The outer first finger, second finger, third finger and fourth finger respectively are represented by high note 5, high note 6, high note 7, and double high note 1.

1.7.5 A key—string (bass4,1)

A key is known as the String (bass 4, 1).

In the first position, the inner empty string, first finger, second finger, third finger and fourth finger are respectively represented by bass 4, bass 5, bass 6, bass 7, 1. The outer empty string, first finger, second finger, third finger and fourth finger respectively are designated into 1, 2, 3, 4, 5.

In the second position, the inner first finger, second finger, third finger and fourth fingers respectively are represented by 1, 2, 3, 4. The outer first finger, second finger, third finger and fourth finger are respectively designated into 5, 6, 7, high note 1.

In the third position, the inner first finger, second finger, third finger and fourth fingers respectively are represented by 5, 6, 7, and high note 1. The outer first finger, second finger, third finger and fourth finger respectively correspond to high note 1, high note 2, high note 3, and double high note 4.

1.7.6 Flat B key—sting (bass 3, bass 7)

Flat B key is a frequently used tunes for the weight of the *Erhu*. It is also known as (bass 3, bass 7) strings.

In the first position, the inner empty string, first finger, second finger, third finger and fourth finger respectively are represented by bass 3, bass 5, bass 6, bass 7, 1. The outer empty string, first finger, second finger, third finger and fourth fingers respectively are placed at the position of bass 7, 2, 3, 4, 5.

In the second position, the inner first finger, second finger, third finger and fourth fingers respectively are represented by 1, 2, 3, 4. The outer first finger, second finger, third finger and fourth finger respectively are designated by 5, 6, 7, and high note 1.

In the third position, the inner first finger, second finger, third finger and fourth fingers respectively correspond to 5, 6, 7, and high note 1. The outer first finger, second finger, third finger and fourth finger respectively are located at the positions of high note 1, high note 2, high note 3, and double high note 4.

1.8 Geographical Division of Erhu Performance Style

The regional division of Erhu performance style is important for performers to express the emotions of Erhu works.

China covers a vast territory and consists of 56 nationalities. Each region has distinctive culture, music appreciation criteria and aesthetic specialties. Therefore, there are great differences in Erhu performance from south to north to south and from west to east in China, in terms of the purpose and style of performance. Formation of styles involves a variety of different factors such as geographic location, nationality, environment, way of life, folk custom and dialogue. (Li Xiuqing, 2009)

Only by deeply studying the culture of each regional ethnic group and mastering various stylistic performance skills can performers become skilled of the characteristics of different repertoires and present the connotations of music works. To analyze the styles of Erhu performance, we can divide the state into eight representative regions as follows: (Liu Changfu, 1986)

1.8.1 Northeast China.

Heilongjiang, Jilin and Liaoning are three provinces in the Northeast China. The area is basically a plain with a few mountains and hills, and the soil is mainly black. This region has a historical origin and long-term culture of agriculture, fishing and hunting. In the process of historical progressiveness, it absorbs and integrates the ethnic cultures of Han, Mongolian and Hui, and has multiple ethnic integration and supports multiple cultural symbiosis. Music culture atmosphere is strong there, with Er Ren Zhuan (a kind of two-role play) as a typical music drama. The representative repertoire of Erhu appears to be the river water.

Music in this region is simple in melody and tragic in emotion. In the performance, the folk methods such as pressing and rolling kneading are adopted, and the alternation of the other strings is combined to make dramatic timbre contrast. The sliding is heavy and fast, while the gliding is light and slow. The rich and changeable bow method, the change of fast, slow and strong movements, all of these make the melody fluctuate drastically, thus highlighting the style of the music. The whole music shows the working people's complaint and resistance to the old, dark society, and expresses people's yearning for a better life.

1.8.2 Inner Mongolia Grassland Region

Inner Mongolia is a high terrain containing plateau and plain. The Inner Mongolia prairie is vast and beautiful, stretching as far as the eye can see. The music of the grassland is closely related to the living habits of its residents. The animal husbandry life on the grassland has cultivated the hard-working, brave and passionate characters of local residents, and constitutes a passionate, unrestrained and cheerful genre of music. The most representative music plays there are long and short. The length of the long key is relatively long, with smooth melody, free rhythm, rich and profound emotional expressions. The melody of short key is lively; the rhythm is short, and the emotion is full of vigor. Both long and short notes exhibit the broad and rough style of grassland music. In the long history of development, instrumental music has grown the same characteristics. The representative piece of repertoire of Erhu is "On the Grassland".

This song shows the beautiful and vast grassland in Inner Mongolia and praises the hard-working and kind people. In terms of playing skills, trills are adopted to imitate the timbre of pipes and the vocal melody of human voices, so as to make full use of the characteristics of inner Mongolian tunes to express the flourishing life of herdsmen.

1.8.3 Xinjiang

Locating in the northwest of China, Xinjiang is the largest province of China. The region is mostly covered by mountains and basins, and it is also an ethnic autonomous region. Influenced by Buddhism and western culture, residents there are good singers and dancers. They have absorbed a large number of music characteristics of the West, while retaining the unique characteristics of their own groups. Music in this region is passionate and cheerful with beautiful and vivid melodies. There are many music works in eight beats as well as a lot of syncopated rhythms, such as “The Sun Shines on Ta Shi Ku Er Gan”.

This piece is modified from a violin song using Ta Ji Ke music materials. It shows Xinjiang residents’ energetic singing and dancing scene. The song presents both the melody and rhythm of the singing dance image, mostly using small second intervals combined with a strong minority style.

1.8.4 Shandong

Shandong locates in the eastern part of China. The terrain there is diverse, with plain as the main, mountain and basin as the secondary composition. Shandong is the hometown of Confucius. Confucianism is deeply rooted in culture and conservative in thought. However, the residents there grow profound ideological connotations and cultural pursuits. In terms of music expression, the melody of music there is simple; the content is real, and the emotion is sincere, all of which form the unity of truth, goodness and beauty of music. Local representative operas include Shandong Lu Opera, Shandong Ban Zi. A representative piece of work of Erhu is “A Flower”.

“A Flower” is originally a Shandong folk music that derived from the Shandong Ban Zi singing and Qu Pai. The music is composed of ragtime, adagio and allegro; the three parts show obvious segmentation and are related to the nature. Melody development and change, loud and clear, solemn and stirring, combining local tunes and drawing on western composition ideas and concepts, in line with the aesthetic trend of modern people, all these elements constitute unique classic music works of Shandong Province.

1.8.5 Henan

Henan Province locates in the southern part of North China plain. The area is mainly covered by plain. It has a large population, a long cultural history, rich and colorful cultural

resources and profound cultural deposits. Henan has nurtured its people and provided them with a favorable cultural and educational environment. Residents in Henan are introverted and honest in the ways of emotional expression and aesthetic appreciation. They are original and able to bear hardships and stand hard work, which is a good reflection of Chinese traditional culture. Music works there are distinctive in style, mostly showing people's enthusiasm, cheerful, positive character and yearning for happy life. The representative repertoire of Erhu is He Nan Xiao Qu.

He Nan Xiao Qu is a combination of Henan "major tune" and the performance characteristics of Henan netsuke. It expresses the praise of Henan people for their hometown and the pride of controlling their destinies. The music adopts the form of complex trilogy. The first part has smooth melody; the second part has melody like songs, and the third part turns to be an allegro.

Music in Henan borrows from many playing techniques, such as the widespread use of sliding. Gliding is decorated to note. It allows performers to apply colors to create a happy atmosphere, which demonstrates the full-bodied place music style and colors.

1.8.6 Shanxi

Shanxi Province is on the loess plateau, where the topography is dominated by plateaus and mountains and supplemented by plains and basins. People's forthright characters and plain language are permeated in music culture. Shanxi music is unique, represented by Qin Qiang and a variety of other art forms. Qin Qiang was created by the laboring people in their productive and social practices and has been continuously developed and spread. The most representative music drama is the folk song of northern Shaanxi, which reflects the rich content of social life and embodies the humanistic spirit of Shaanxi Province. A representative repertoire of Erhu is "Qin Qiang theme capriccio".

The music consists of a lead, five passages and an epilogue. The works are composed of local operas of northern Shaanxi with distinct melodies, varied rhythms and rich music elements. The music mostly adopts the sliding tone from high pitch to low pitch and then kneads it. This unique decorative technique is an important symbol for the performance of Qin Qiang music works. The music has a strong local flavor and show local residents' bold and unadorned personalities.

1.8.7 Jiangnan Region

Jiangnan area refers to the southeastern coastal area. Jiangnan has beautiful mountains and clear waters, poetic and picturesque scenes, abundant water resources and a profound cultural heritage. People's feelings are exquisite, which forms a sharp contrast with the roughness of the north. The most representative instrument is Jiang Nan Si Zhu. It can be played in a variety of forms and can amuse people's sentiments. The instrument is welcomed by the people and represents the connotation of Jiangnan culture. A representative Erhu work is "Jiangnan Spring".

Erhu's performance style is elegant and quiet, with smooth melody and exquisite and pleasant timbre, and it is often treated as an artistic treatment with the decorative technique of alternating internal and external strings. The use of sliding sound is very frequent, generally the sliding sound within three degrees, making the quiet music fluctuate slightly. It shows the characteristics of lightness and fluency in Jiang Nan Si Zhu style, and the use of Erhu bow is also in line with the changing requirements of priorities of left hand.

1.8.8 Southwest

The southwestern area of China comprises of Guizhou, Yunnan, Guangxi and other provinces. It is mostly covered by mountains and plateau, including a famous Yunnan-Guizhou plateau. Historically, due to the hinderance of mountains, the culture of southwestern China was almost isolated, thus it shows different cultural characteristics. With the construction of local infrastructure facilities, the transportation there becomes more convenient, and the communication among people increases gradually; the commonality of southwest culture also progressively enhances. Because there are many ethnic minorities, local residents have different levels of cultural characteristics and have special social functions and artistic values. The representative work of Erhu is the first Erhu rhapsody.

This piece was created based on the music of several minorities in Yunnan Province. With a remarkable Yunnan music style and a distinctive flavor of the time, the music is composed of many paragraphs with obvious subsections, and has been transposed for many times and changed the beats. The alternative application of darkness and the sharp contrast of colors both reflect the compelling style and simple folk customs of Yunnan residents. It also reflects the people's yearning for and love for this land.

1.9 Levels of Erhu Performance

Erhu performance is evaluated and divided accordingly into ten levels, but this is generally for amateur learners. Professional learners are generally at level 10 or above, so they always focus on the playing state instead. Moreover, the repertoire is constantly updated with the composer's creation. (Zhou Li, 2016)

The requirements and the representative repertoire from level one to level ten are illustrated below:

1.9.1 Level One

Requirements:

- 1) Nice posture for playing Erhu.
- 2) Empty string exercise that requires the bow in the state of smooth movements and moving in a straight line.
- 3) Exercise the first, second, third, fourth finger exercise on the string and master the first hold position of key D, key G.

Representative repertoire:

《Tian Yuan Chun Se》 , 《Shan Cun Chu Xiao》 , 《Xi Zang Wu Qu》

1.9.2 Level Two

Requirements:

- 1) Keep the natural connection every time when changing the bow movement.
- 2) Master the basic hold shift technique of first and second holding positions.
- 3) Keep accurate intonations and rhythms.

Representative repertoire:

《Ao Bao Xiang Hui》 , 《Xiao Qu Hao Chang Kou Nan Kai》 , 《Fang Feng Zheng》

1.9.3 Level Three

Requirements:

- 1) String kneading exercises require the waves of the sound homogeneous and nature.

2) Master the first and second holding positions of key F as well as the skills of staccato.

3) The sliding finger exercise requires the natural sound.

Representative repertoire:

《Xiao Hua Gu》 、 《Xi Yang Yang》 、 《Xiu Jin Bian》

1.9.4 Level Four

The main content requirements:

1) Master the holding shift of first, second and third holding position. Master the skills of spiccato and tremolo.

2) The slow bow speed should be powerful; the medium speed bow should be clear, and the fast speed bow should be granular.

3) Be able to play Erhu works completely and apply many proficient skills.

Representative repertoire:

《Sai Ma》 , 《Liang Xiao》 , 《Xi Chang Feng Shou》

1.9.5 Level Five

The main content requirements:

1) Erhu performance is relatively complete and fluent.

2) Keep a good state of intonation and rhythm control.

3) Master the first, second and third holding positions of key A.

Representative repertoire:

《Ben Chi Zai Qian Li Cao Yuan Shang》 , 《Shan Cun Bian Le Yang》 , 《Ting Song》

1.9.6 Level Six

Requirements:

1) Quick holding shift and quick inner-outer string change exercise that requires the flexible operation.

2) Keep two hands cooperating well.

Representative repertoire:

《Jin Zhu Ma Mi Zan》 , 《Gan Ji》 , 《Zhu Ying Yao Hong》

1.9.7 Level Seven

Requirements:

- 1) The timbre of works is elegant and the performance is infectious.
- 2) Master the first and second holding positions of key flat B.

Representative repertoire:

《Jiang He Shui》 , 《Kong Shan Niao Yu》 , 《He Nan Xiao Qu》

1.9.8 Level Eight

Requirements:

- 1) Master the highly difficult skills and each style of Erhu works.
- 2) Master the first and second holding positions of key C.

Representative repertoire:

《Pu Tao Shu Le》 , 《Yu Bei Xu Shi Qu》 , 《Jiang Nan Chun Se》

1.9.9 Level Nine

Requirements:

- 1) Have a deep understanding of traditional repertoire.
- 2) Be able to express the profound connotation of the works in performance.

Representative repertoire:

《Er Quan Ying Yue》 、 《San Men Xia Chang Xiang Qu》 、 《Bing
Zhong Yin》

1.9.10 Level Ten

Requirements:

- 1) Have a thorough knowledge of techniques and works. Be able to perform concertos, caprice and rhapsody.
- 2) The whole performance is deeply moving with a high integration of sound and emotion.

Representative repertoire:

《YI Zhi Hua》 、 《Chang Cheng Sui Xiang qu》 、 《Di Yi Er Hu Kuang
Xiang Qu》

1.10 Erhu Teaching Materials

The compilation of Erhu teaching materials is particularly important, because it is the main basis for Erhu teaching, learning and practice. There are many types of Erhu textbooks, but most of them are compiled based on the difficulty of the repertoire. Generally speaking, the textbooks are mainly composed of professional solo repertoire for professional Erhu students, while those for amateur learners are mainly composed of simple pieces of work. There are also specialized textbooks based on a single technique subject, but only in a short availability. In the teaching process, most instructors impart techniques through performance of the repertoire, which induces to the shortage of specific practice of the corresponding performance techniques for individual learners. As a result, students always are not able to master the basic skills or achieve a wonderful performance effect. The section below provides some examples of currently used textbooks: (Li Yiqun, 2016)

1.10.1 Erhu Fingering Skills Training

Author: Zhao Han Yang. Publisher: Blue Sky Publishing. Publication time: 2011.

The book is divided into six chapters and explains the various fingering training of the Erhu. The textbook discusses the fingering techniques and focuses on the systematic training of the hobby learners' fingering skills, making the fingering training materials more scientific. The main contents include: holding the piano and string exercises, live finger exercises, scale exercises, interval and string exercises, and arpeggio practice.

1.10.2 Erhu Bowing Skills Training

Author: Zhao Han Yang. Publisher: Blue Sky Publishing House. Publication time: 2011.

The author believes that in the process of learning, students need to have targeted systematic teaching materials to improve their performance skills and improve their agility to music.

The book comprises of seven chapters, each explaining bowing techniques in detail. Students are required to systematically train bowing techniques. The main contents include:

longbow practice, split-bow practice, continuous bow exercise, long and short bow exercise, mixed bow practice, fast bow exercise, and various bow exercises.

1.10.3 Thirty-Seventh Erhu Bow Practices

Author: Yan Jiemin. Publisher: People's Music Publishing House. Publication time: 2009.

The book is divided based on a variety of bow exercises and contains thirty-seven practice songs. The textbook discusses bowing techniques. It focuses on the systematic training of the arching skills of Erhu learners, and attempts to make the fingering training more scientific. The main contents include: longbow practice, continuous bow practice, split bow exercise, change bow practice, string change exercise, fast bow exercise, bow exercise, stress practice.

1.11 Accompaniment of Erhu

Erhu may be accompanied by a variety of forms, especially with the music innovation, which significantly promotes the development of Erhu performance. There are several forms of accompaniments as follows:

1.11.1 Dulcimer as the Accompanying Instrument

Dulcimer is a commonly used Chinese percussion string instrument, which has been spread and evolved in China for more than 400 years. With its traditional characteristics and national style, and with the combination of folk music, it has generated a number of local characteristics. The composition procedure is very complex, and the production process is even more complicated. A dulcimer is mainly composed of three parts: 1. Strings 2. Body structure; 3. The harp. The strings are made of stainless steel. The body structure of the dulcimer is composed of a sound board, a frame and an upper string system. There are two other components: the keys and the tuning wrench.

Its timbre has the bright features and loud, bright volume, and the performance is extremely diverse. The bass area is obscure and profound. The middle part is soft, pure and transparent. The high-pitched area is crisp and bright. The highest register is more intense. At the same time, it demands the rich and colorful performance skills and techniques, such as single tone technique, round tone, double tone, two-part configuration and color skills. It is often used as the main accompaniment instrument in the performance of traditional Erhu repertoire, such as the "Er Quan Ying Yue" "Yi Zhi Huar" "Jiang He Shui" "Hong Hu Sui Xiang Qu".



Figure 27 Dulcimer accompaniment

Retrieved From

<http://5b0988e595225.cdn.sohucs.com/images/20181026/2a1872560b6a43959158a130a951fbc9.jpg>

1.1.1.2 The Piano as Accompanying Instrument

Piano has 88 keys, including 52 white keys and 36 black keys, covering almost all the tones in the tone system. The treble area of piano is bright; the timbre is beautiful, and the bass is thick. Piano solo pieces are extensive, with more classifications, large-scale melody songs, concerted songs and other types of works.

The piano accompaniment combines the playing skills, the theory of harmony and composition to jointly create the melody effect. Players are required to skillfully use the voice parts of the piano to match the melody through rich sound patterns and to produce the artistic effect of the accompaniment. Piano accompanists generally have accumulated a wealth of musical knowledge and good piano accompaniment. In the performance of the Erhu, modern repertoire and transplanted tracks requires more types of accompaniment of piano. This is also a method of playing with the development of the Erhu, which also adapts to the aesthetic style and way of thinking of the younger generation of performers.



Figure 28 The piano accompaniment

Retrieved

From <http://a1.huanqiu.cn/images/02535e929722cef6187d6b94ddbba51f.jpg>

1.11.3 Chinese Orchestra as the Accompanying Instrument

Chinese orchestra refers to a kind of band composed of musicians who are skilled of classic Chinese musical instruments. In terms of the formation, these orchestras are formed by learning from the compilation of western symphony orchestras. Traditional Chinese orchestras are generally divided into four categories: wind instrument group, stringed instrument group (Erhu, Zhonghu, cello), plucked instrument group (Yangqin, Guzheng, Pipa, Liuqin, Ruan), and percussion instrument group. There are large traditional Chinese orchestras that contain more than 100 members, medium traditional Chinese orchestras that contain about 50 to 60 members, and small orchestras with less than 30 members. These bands have a large overall range, with high, medium and bass instruments in each group. Western cello and double bass were also introduced to strengthen the bass part.

Chinese orchestras have made extensive use of plucked instruments, as well as percussion instruments with Chinese characteristics. The most famous Chinese folk orchestras are China broadcasting folk orchestra, Beijing central folk orchestra and Shanghai folk orchestra.



Figure 29 The piano accompaniment

Retrieved From

http://www.fmac.org.mo/citizensconcert/upload_files/album_photo/photos/2014/09/08/2014091410162318225.JPG

1.11.4 Symphony Orchestra as the Accompanying Instrument

Symphony orchestras are usually big orchestras. There are five primary groups, that is, the string group (violin, viola, cello), wooden tube group (flute, clarinet, oboe), brass tube group (small, horn, trombone), percussion group and color instrument groups (piano, harp, xylophone). Symphony orchestras are divided into different compilations according to the style of the work and the needs of the performance, such as single-tube preparation, double-management (about 60 people in total), three-management (about 90 people in total), and four-management (about 110 people in total).

The principle of orchestration is to ensure that the proportion of each group of instruments is reasonable, regardless of the addition of the instrument or the reduction of the instrument, and to maintain the balance of the voice of the voice. Symphony orchestras mainly play symphonies, concertos, symphonic overtures, symphonic suites and symphonic poems. However, with the development of the Erhu performance, symphony orchestras are also invited to become a type of accompaniment. Moreover, it is often the players who have better Erhu performance techniques to invite the symphony orchestra to cooperate with them. There are some celebrated symphony orchestras that act as accompaniment during Erhu performance, such as the

China National Symphony Orchestra, Shanghai Symphony Orchestra, China Philharmonic Orchestra, Beijing Symphony Orchestra.



Figure 30 The Symphony Orchestra accompaniment

Retrieved From <http://photocdn.sohu.com/20060410/Img242723046.JPG>

1.12 Erhu' Similar Group of Musical Instruments

1.12.1 Zhonghu

Zhonghu is a kind of instrument made through the transformation of a certain part of the Erhu. Its handle is longer than that of Erhu; the drum resonator is bigger, and the strings are thicker than the parts of Erhu. Therefore, the sound is thick and powerful, suitable for playing the grassland theme songs, showing a wide-ranging singing melody. Since the range its sounding area is long, the position of the sound is wider, and the sensitivity of the performance is worse than that of the Erhu, thus it is not suitable for playing fast tracks. Performers can apply the playing skills on the Erhu to Zhonghu performance.

Two strings of Zhonghu are in the purer fourth or fifth than the Erhu, and the range of it exceeds two octaves. The string Zhonghu is G, D or A, E1, and the inner and outer strings are always purely five degrees. In the performance, Zhonghu could be played in a solo form, but there are fewer pieces of works. However, within the national orchestras, Zhonghu is mainly playing a role in the middle part of the sound, which makes the whole band plenty of sound, thus it serves as an indispensable part of the national orchestras. Representative repertoires of Zhonghu include "Cao Yuan Shang" and "Sai Wai Qing Si".



Figure 31 Zhong Hu

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https://ss0.bdstatic.com/70cFvHSh_Q1YnxGkpoWK1HF6hhy/it/u=3410978683,3917278287&fm=26&gp=0.jpg

1.12.2 Gaohu

Gaohu is a kind of musical instrument made by the transformation of Erhu. Its shape, production and structure are basically the same as those of Erhu, except that its cylinder is slightly smaller than the Erhu, the shape is round, and the sound is crisp and bright. During the performance, players usually play with a part of the drum with their legs. It is because the cylinder is slightly smaller than the Erhu, so its range is four to five degrees higher than the Erhu, and the tuning is generally (a ~ e4) or (g1 ~ d4).

In the form of performance, players can choose to play solo. They could use their right hand to produce a quick bow and accent, and their left hand to exert a lot of pressure. Since the sound is clear, it is suitable for playing melodies and lively tunes. In national orchestras, the atmosphere is often rendered in the way of cadenza, which is an essential and rich instrument of the national orchestras. Representative works include "Double Hate", "Rain Beating Plantain", "Bird Casting Forest", "Ping Hu Qiu Yue".



Figure 32 Gao Hu

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1.12.3 Banhu

Banhu, a stringed instrument produced on the basis of Huqin, is named after the drum glued with thin wood. The structure of Banhu is mostly the same as that of Erhu, mainly comprising of a piano and a jack. The drum is a resonance box of Banhu, which is cylindrical and made of hard coconut shell or other wooden material. The jack is a flat piece of wood made of horns or other wooden materials, and its position is strictly controlled. Banhu is usually adjusted according to the five-degree relationship. Its inner string is set to d₂, while the outer string is set to a₂. The tone is high and bright with a strong penetrating power.

There are solo performances, rich playing skills, and more performances with rich ethnic styles. Players must be experts of expressing high-spirited emotions and delicate emotions. At the same time, Banhu is also an accompanying instrument of national operas. Representative songs include "Feng Shou Le" and "Hua Bang Zi".



Figure 33 Ban Hu

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1.12.4 Jinghu

Jinghu was restructured on the basis of the stringed instrument Huqin. Its shape and materials are quite different from those of Erhu. Jinghu is adjusted to maintain pure five degrees, but there is no need to fix the pitch. The pitch is determined by the specific voice and actor voice conditions. When playing, the barrel is placed in the middle of the left leg and the pole is slightly tilted to the left.

There are solo performances in the performance, and the performance is mostly in the first position. Performers can play more songs with various opera style. There are more fast bows in the right hand, and the slider and vibrato of left hand demand higher on performers who must be good at expressing the emotions of dramatic sorghum. At the same time, Jinghu is also the main accompaniment instrument of Peking Opera. Representative works of Jinghu include "Xiao Kai Men" and "Ye Shen Chen".



Figure 34 Jing Hu

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1.12.5 Yehu

Yehu is a type of Chinese traditional bowed instrument made from the transformation of Erhu. Its speaker is made of coconut shell, and the surface is covered with thin paulownia wood. The five sound holes are opened back, and the strings are slightly thinner than Erhu strings. It is widely spread in Guangdong Province, Fujian Province and surrounding area, and the coconut flakes in each place are slightly different. The sound range of Yehu is about two octaves, and the coconut palm is fixed in a five-degree relationship. The constant string is (g, d1), (c1, g1) or (a, e1). Its tone is soft and rich, with remarkable, local elements. There are fewer solo pieces in the coconut palm, and they are played with Yangqin, Pipa, and Guzheng for accompaniment of folk opera and art.

พหุ ประถมศึกษา



Figure 35 Ye Hu

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1.13 Characteristics of Chinese Folk Music Modes

1.13.1 Diversified Modes

The ambiguity and diversified musical scales of ethnic modes appear to be the important features of traditional Chinese music, such as Erhu music works. Features of China's ethnic modes are more remarkably in the comparison with the western major and minor mode systems.

In terms of the presentations, traditional Chinese music works are commonly composed using the five-tone modes, six-tone modes and seven-tone modes. The seven-tone modes, especially, show some common features in mode combinations as that of the diatonic scales in western major and minor systems.

- 1) Both types of modes are composed of seven tones, these are I, II, III, IV, V, VI, VII;
- 2) Both types of seven-tone modes contain five major seconds or two minor seconds between each two adjacent tones;
- 3) China's diatonic C-gong scale comprises of seven tones, respectively Gong, Shang, Jue, Qing Jue, Zhi, Yu, Bian Gong, corresponding to "1, 2, 3, 4, 5, 6, 7, 1" in numbered

musical notations, which is exactly that same as those “1, 2, 3, 4, 5, 6, 7, 1” tones in natural C-major in western musical system.

4) China's diatonic A-yu scale comprises of seven tones, including Yu, Bian Gong, Gong, Shang, Jue, Qing Jue, Zhi, corresponding to “6, 7, 1, 2, 3, 4, 5, 6, 7” in numbered musical notations, which is identical to “6, 7, 1, 2, 3, 4, 5, 6” notes in natural a-minor in western musical system.

5) G key, D key, A key, E key, B key, #F key and #C key contain respectively one, two, three, four, five, six and seven sharps; While G-gong, D-gong, A-gong, E-gong, B-gong, #F-gong and #C-gong system also contain respectively one, two, three, four, five, six and seven sharps.

6) F key, bB key, bE key, bA key, bD key, bG key and bC key contain one, two, three, four, five, six and seven flats, respectively; while G-gong, D-gong, A-gong, E-gong, B-gong, #F-gong and #C-gong system also contain one, two, three, four, five, six and seven flats, respectively.

1.13.2 Chinese Nature of Modes

Speaking of the nature of modes, however, there are some remarkably differences between China's traditional five-note, six-note, seven-note modes and the pentatonic, diatonic scales in western major and minor systems as follows:

Difference in the Nature of Mode Structure

1) China's five-tone scale system is composed of Gong, Shang, Jue, Zhi, Yu, or “1, 2, 3, 5, 6, 1” in numbered musical notations; the six-tone and seven-tone scale derived from the basis of the five-tone scale system. Gong, Shang, Jue, Zhi and Yu are called tonic tones, while Qing Jue, Bian Zhi, Run and Bian Gong are called offset tones. Tonic tones could act as keynotes of modes, whereas offset tones usually appear as weak notes, auxiliary positions or passing notes.

Here is an example of the mode of C-gong system. Qing Jue is added between Jue and Zhi of the five-note scale system to produce the six-note scale which comprises of Gong, Shang, Jue, Qing Jue, Zhi, Yu, corresponding respectively to “1, 2, 3, 4, 5, 6, 1” in numbered musical notations. Six-tone scale could also be created by adding Run in the position between Yu and Gong of the five-note system, which then comprises of Gong, Shang, Qing Jue, Zhi, Yu, Run, corresponding to “1, 2, 3, 5, 6, 7, 1” in numbered musical notations. If Qing Jue and Bian Gong

are inserted respectively between Jue and Zhi, and between Yu and Gong, then a seven-tone Qing Yue (meaning “simple music”) scale could be generated and present as Gong, Shang, Jue, Qing Jue, Zhi, Yu, Bian Gong, corresponding to “1, 2, 3, 5, 6, 7, 1” in numbered musical notations. Apart from that, a type of seven-note Ya Yue (meaning “elegant music”) could be created by adding Bian Zhi into the position between Jue and Zhi, and adding Bian Gong into the position between Yu and Gong tone, which results in a scale composed of Gong, Shang, Jue, Bian Zhi, Zhi, Yu, Bian Gong, corresponding to “1, 2, 3, #4, 5, 6, 7, 1”. A type of seven-note Yan Yue mode, presenting as Gong, Shang, Jue, Qing Jue, Zhi, Yu, Run corresponding to “1, 2, 3, 4, 5, 6, b7, 1” in numbered musical notations, could be produced by adding Qing Jue into the place between Jue and Zhi, and adding Run between Yu and Gong. Besides, the ethnic modes contacting the identical Gong tone are referred as the Identical Gong System.

2) Diatonic scale is the only complete form of mode in western major and minor mode systems. There are three types of majors: natural major, harmonic major and melodic major.

Taking C-major for an instance, the natural C-major is mainly composed of the tonic tone (T), upper tonic tone, baritone, subdominant tone (S), dominant tone (D), lower baritone and leading tone, corresponding to “1, 2, 3, 4, 5, 6, 7, 1” in numbered musical scales. Harmonic C-major is produced by reducing the sixth tone of the natural C-major by half-step (bIV), which could be presented as “1, 2, 3, 4, 5, b6, 7, 1”. Melodic C-major, showing in the form of “1, 2, 3, 4, 5, 6, 7, 1, b7, b6, 5, 4, 3, 2, 1” in numbered musical notations, is created by reducing the sixth and seventh tone of the natural major by half-tone (bVI, bVII) and is only present in melodies going down. Similarly, minor notations are divided as natural minor, harmonic minor and melodic minor. Taking A-minor for an instance, natural A-minor is composed of a tonic tone (T), upper tonic tone, baritone, subdominant tone (S), dominant tone (D), lower baritone and leading tone, corresponding to “6, 7, 1, 2, 3, 4, 5, 6” in numbered musical notations. Harmonic A-minor is created by elevating the seventh tone of natural A-major by half-step (#VII) to produce a numbered form of “6, 7, 1, 2, 3, 4, #5, 6”. Melodic A-minor is created by elevating the sixth and seventh tone of natural A-major by half-step (#VI, #VII), and is generally restored to the original form in melodies going down, which could be presented as “6, 7, 1, 2, 3, #4, #5, 6, $\natural 5$, $\natural 4$, 3, 2, 1, 7, 6). Other than that, the pair of major and minor modes that have the same tones and are always

three tones apart (major at that higher position) is called major-minor mode or parallel major-minor mode.

1.13.3 Tremendous Differences in the Feelings of Modes

Within the system of China's five-note mode, clear differentiations of the stable and unstable states of the five tones do not exist.

If Gong appears frequently in a piece of work and is used as the ending tone, then the pieces would give a feeling of Gong-mode (tone-conversions should be otherwise discussed). If Shang appears for many times and acts as the ending tone, then the pieces would give a feeling of Shang-mode (tone-conversions should be otherwise discussed). This pattern remains true for Jue, Zhi and Yu tone.

In big-sized musical pieces, however, there are frequent presences of tone-conversions which show as the change in tone marks, notes or ending tone. Moreover, musical pieces are usually composed of multiple sentences or sections, thus the ending tone of each sentence and section is not likely to be the same, which leaves audiences a feeling of ambiguous and diversified modes. No stable or unstable relationship is present between keynotes or between key tones and offset tones. In general, the presence of offset tones serves merely as a kind of decoration or ornament for the melody development.

In western major and minor systems, a stable or unstable relationship is present among the seven pitches.

In major systems (taking C-major as an instance), "1, 3, 5" are stable pitches, while "2, 4, 6, 7" are unstable pitches. In addition, "1" is the tonic tone of the mode and is the most stable pitch; each other pitch has the tendency of converging to the tonic tone. "7" is the leading tone of the mode and is the least stable one, which exhibits the strongest tendency of converging to the tonic tone. Other unstable pitches all show the tendency of converging to the nearest stable pitch.

In minor systems (taking A-minor as an instance), "6, 1, 3" are stable pitches, while "7, 2, 4, 5" are unstable pitches. "6", in A-minor scale, is the tonic tone and the most stable pitch; each other pitch has the tendency of converging to it. In actual utilization of minor modes, "5" is usually elevated by half-step to produce a harmonic minor, which makes "#5" into the least stable pitch and show the strongest tendentiousness to the tonic tone.

All unstable pitches are necessary to converge to stable pitches in a direct or indirect way. Convergence of unstable pitch intervals or chords are all modified on this basis. These are the major characteristics of major-minor system, and the foundation of the establishment of traditional harmonics. Features of these modes are solidified in the meanwhile via the forms of polyphonic music.

1.13.4 Diversification of Music Pieces Structures

Chinese folk instrumental music works have a variety of structures. Most of them are composed based on “ Qu Pai” and show clear divisions between different sections. The organization of tones and development of melodies show their distinct features as follows:

1) Melodies advance mainly in a progressive way. The progression here refers to a five-tone progression mode, in which seconds and minor thirds function as progressions (in western major and minor systems, however, only the progression by seconds is called progression, while thirds or higher level progressions are called jumping). It should be noted that in Chinese folk modes, although minor second intervals are present, there are few occurrence of minor second progression, whereas major second and minor third progression are more frequently used.

2) Jumping is frequently seen in melodies. Jumping by pure fourth intervals is the major form, while other intervals such as pure fifth, major/minor sixth and minor seventh are also used occasionally. $\sharp 4$ and $b5$ are jumping by inharmonious intervals; major seventh jumping crosses a big range of intervals and is not usually used in melodies.

3) During the furthering progress of melodies, frequent occurrence of a single interval in a piece of work could highlight the interval and create a distinctive feature of that piece, which serves as a crucial factor of the embodiment of different styles of folk instrumental music.

4) Development of Erhu music works in China involves inheritance and innovation.

On the basis of traditional composition methods, Erhu music works keep absorbing new composition theories and techniques to improve constantly the structures, expand the frameworks, produce new types of works and exhibit more diversified means of performance.

Inheritance of traditional Erhu music works mainly relies on their robust inheritance since they carry profound connotations of traditional cultures. In actual performances, still, folk instrumental music works are relatively flexible and free to change. Even if some notes are not attached with decoration marks, most players will provide free and even impromptu expressions based on their own comprehension. Especially in repetitive playing of certain “Qu Pai”, players always adopt various types of performance skills such as embellishment to produce variations.

The most representative technique of embellishment is called “embellishing while slowing down”. It complements the original structure of the pieces and makes it more vivid and plentiful with several kinds of embellishments. Other types of variations are also applied flexibly into performances. For example, changing on the content or sequences of the themes or structures of music works may create variations, which is shown in the augmentation of the contents of the Two Springs Reflection the Moon, an Erhu music piece, by variations in its melody.

Innovation and development of national music started broadly in 1920s. A lot of well-known national musicians shew up during that time and devoted all their lives into music innovation field, as well as the performance and composition of national instrumental music works. Musicians such as Xiao Youmei, Wang Guangqi, Zhao Yuanren, Xian Xinghai and Nie Er made extraordinary contributions to the inheritance, development and innovation of national instrumental music. They sorted, categorized and studied all kinds of outstanding traditional music pieces, and then conducted appropriate modifications based on the original styles of these pieces to achieve thorough presentation of the emotional meanings of these works and granted these music pieces with the spirit and a new age.

At the same time, they explored and created a lot of new works on the basis of mastering the composition techniques of traditional works. These musicians also carried out some big attempts and improvements on Erhu performance and created the instrument into folk bands in the first place, which led to new advancement of Erhu music in terms of the innovation contents and performance forms.

Since the establishment of People’s Republic of China, musicians’ music composition and performance skills have constantly improving and have produced many national

music works with huge structures and complex performance forms. Some pieces are modified from traditional works, while others are created by referring to the advanced composition techniques of western states.

Composers keep promoting the fusion of western and Chinese music cultures. They modify and transplant western instrumental music into China's national instrumental ensemble works, thus strengthening the flexibility and compatibility of folk bands in their performance. Some folk instrument ensemble works, such as *Bu Bu Gao* and *Zi Zhu Diao* revised by Peng Xiuwen through making innovations on traditional works on the basis of inheriting traditional music. Other examples could be seen from some national orchestral music works revised from foreign and domestic orchestral pieces. These music works usually possess powerful expressiveness and demand highly on performance skills, hence they are generally performed by professional players. (Jin W.& Song G, 2011)

From 1960s to 1980s, a lot of new Erhu music works were produced and fully exhibited the spirit of a new era and characters of the nationality. For instance, the small band work *Xi Yang Yang* composed by Liu Mingyuan depicts a joyful, festival atmosphere; the work shows strong emotions and vividness, as well as matured forms of artistic presentation. In addition, the composition techniques of big-sized, multiple-chapter national orchestral works, such as "*Chang Cheng Sui Xiang*" (an Erhu concerto work) and "*Su Wu*" (a Zhonghu concerto work) become more advanced. These works involve a more extensive range of topic selection, more diversified playing genres, and more plentiful forms of embodiment, which effectively illustrate that profound and innovation research of musicians in the aspects of composition techniques, music work structures and chord arrangement and combination.

From the end of 20th century to the first of 21st century, a new trend appeared in the innovations of big-sized national band works, which even induced to a fundamental change in music composition. Uncommon combinations of music instruments, innovative chord orchestration, volatile sounds and timbres, and diversified performance forms were adopted in music compositions during this period. This led to peculiar acoustic effects, perplexing themes and uncatchable emotion expressions. Audience must have a certain level of professional music proficiencies to understand the nature and implications of these works, such as the First Erhu

Fantasy. All these works employ abnormal ideas of creation in music expression and exhibit unique music spirit and properties.

1.14 Inheritance of Bowstring Instruments of Ethnic Minorities

Erhu performance has been taught in colleges and universities for decades, and a large number of excellent Erhu players have appeared, which has greatly developed the performing arts of Erhu. However, bow-stringed instruments of ethnic minorities associated with Erhu, such as pendant hu, ox bone hu, horse bone hu, bamboo tube qin, ox leg qin and so on, are on the verge of extinction.

From the perspective of artistic ontology, the performance teams and appreciation groups of ethnic minorities' bow-string instruments gradually decrease in number year by year and show an aging trend, and their inheritance and communication are facing great difficulties, which leads to their disappearance from people's vision. From the perspective of research objects, most researchers who study the minority bow-string musical instruments focus merely on the artistic styles, artistic characteristics, artistic forms and cultural connotations, and have achieved many research results.

Therefore, researchers are required to carry out in-depth studies on the inheritance and protection of the artistic forms of minority bow-string musical instruments. Under the background of interdisciplinary research, minority bow-string musical instruments can be combined with educational undertakings and cultural industries, so as to realize inheritance, promotion and revitalization in accordance with the law of evolution in contemporary society.

The research on the inheritance and protection of minority bow-string musical instruments can be discussed from the perspectives of inheritors, audience, means of inheritance, inheritance process, inheritance ecology, protection idea, methods, protection plan, theoretical implications and practical significance. The following paragraphs discuss the inheritance, protection and significance of analysis of Ba Yin Zuo Chang.

1.13.1 Traditional Models

1) Community collective inheritance: the influence of minority bowstring musical instruments has a long history, so it has already become a habit of people in minority areas. In their daily work and life, ethnic minorities often use local bow-string instruments as the means of spiritual and cultural entertainment.

2) Group inheritance: most of the bow-string musical instruments of ethnic minorities are played by folk artists, and the members of performance teams are few. Therefore, it is necessary to encourage people to form more performance teams.

3) Inheritance of master and apprentice: in the past, there was no record for the music of bow-string instruments of ethnic minorities, thus the inheritance of these instruments mainly relied on oral transmissions of the old artists, which turns to be a traditional way of inheritance of master and apprentice.

4) School inheritance: in recent years, some local schools, subject on the policy of "introducing intangible cultural heritage into the campus", have set opened courses of minority bow-string musical instruments to explore new approaches of training relevant inheritors.

1.13.2 Protection Approaches

1) Institutional protection: institutional protection refers to the institutional basis for protecting the bow-string musical instruments of ethnic minorities. The relevant administrative departments should legislate actively to establish a special scheme for the protection of Bayin. In particular, cultural administration departments at all levels should clarify their duties, establish and improve corresponding protection organizations and preserve institutions, and strengthen the protection of minority bow-string musical instruments.

2) Rescue protection: survey, recording, filing and other rescue measures for minority bow-string musical instruments are applied to preserve their music, literature, inheritors' oral history materials and relevant records.

3) Communicative protection: through school education, social education, mass media, performances and graphic and text exhibitions, the general public, especially young citizens, can have a deeper understanding of their national cultures and local cultural concepts and knowledge, thus to improve their affinity to these the bow-string musical instruments of minority groups. Regular organization of the eight tones sitting singing large-scale competitions should invite more teams and young musicians to join.

4) Digital protection: the existing minority bow string instrument performance forms, performance repertoire and related materials are sorted out, and specific websites and database are established to create a convenient online learning platform for enthusiasts.

5) Professional education protection: institutes should attach importance to expert guidance and talent team construction, help the inheritors of minority bow-string musical instruments enter colleges and universities, especially to provide professional guidance for students of art colleges, organize special eight-tone sitting singing performance teams, and hold regular rehearsals and performing events.

6) Production protection: on the basis of fully inheriting the original performance repertoire, new repertoire should be created and integrated with local cultures so that more people could see the style of minority bow string musical instrument performance, and thus to form a unique music cultural industry.

1.13.3 Significance

1) Promote the inheritance of minority bow-string musical instruments in contemporary society and provide people more opportunities to appreciate and learn, so that they can deeply feel the unique artistic charm and cultural values, and their spiritual and cultural life can be enriched. In the process of inheritance, institutes should attract more young people to join in and organize eight-tone sitting singing events more frequently on the basis of maintaining the essence of traditional local musical features.

2) Promote the integration of eight-tone sitting singing and local education. Bow-string musical instruments of ethnic minorities can act an important role in minority art education. The categories of bow string musical instruments of ethnic minorities include production work, daily leisure, weddings and funerals, religious ceremonies, etc., which are the concentrated in and profoundly reflect national cultures. Bringing the content of minority bowstring musical instruments into the music classroom will not only help students to learn the local minority music culture and experience the musical charm of minority nationalities, but also enable them to have a more comprehensive understanding of local minority customs, which will greatly enhance students' affinity to local and ethnic minorities.

3) To promote the ethnic minority bow-string musical instruments to play a greater role in social and spiritual value systems. As representatives of excellent national cultures, bow-string musical instruments of ethnic minorities have been gradually created and formed in the long-term production and living practices of ethnic minorities. It bears the civilization of the

“Bu Yi” nationality, contains the unique spiritual value, way of thinking, imagination and cultural consciousness of the Bayin nationality, and also reflects the diversity of human culture.

4) To promote the inheritance and protection of bow-string musical instruments of ethnic minorities, we should not only display their unique artistic forms, but also devote ourselves to the protection of their cultural connotations and the promotion of their social and spiritual values. Besides, we should also infill the vitality into these minority bow string musical instruments including Erhu at the meanwhile of inheritance.

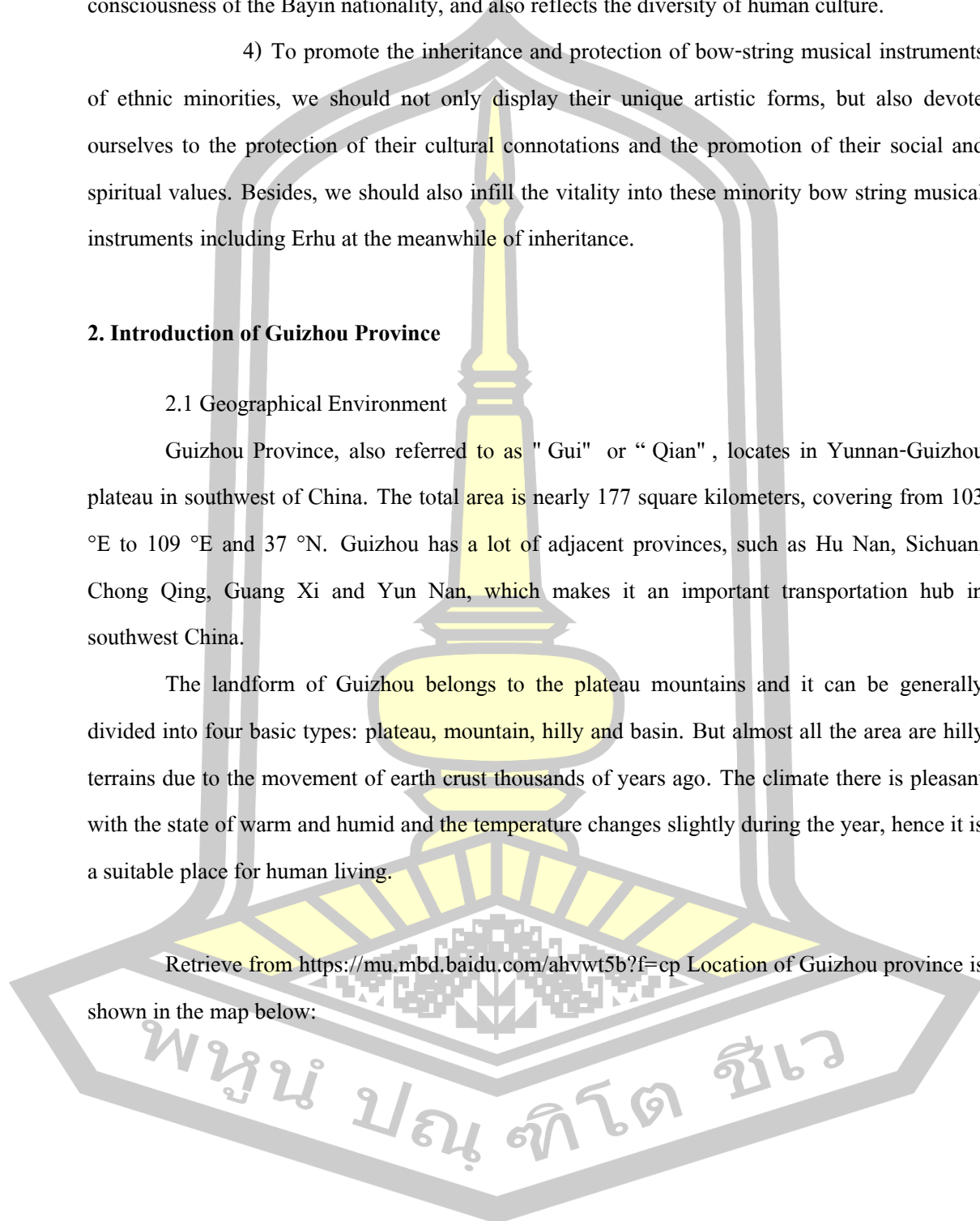
2. Introduction of Guizhou Province

2.1 Geographical Environment

Guizhou Province, also referred to as " Gui" or “ Qian" , locates in Yunnan-Guizhou plateau in southwest of China. The total area is nearly 177 square kilometers, covering from 103 °E to 109 °E and 37 °N. Guizhou has a lot of adjacent provinces, such as Hu Nan, Sichuan, Chong Qing, Guang Xi and Yun Nan, which makes it an important transportation hub in southwest China.

The landform of Guizhou belongs to the plateau mountains and it can be generally divided into four basic types: plateau, mountain, hilly and basin. But almost all the area are hilly terrains due to the movement of earth crust thousands of years ago. The climate there is pleasant with the state of warm and humid and the temperature changes slightly during the year, hence it is a suitable place for human living.

Retrieve from <https://mu.mbd.baidu.com/ahvwt5b?f=cp> Location of Guizhou province is shown in the map below:



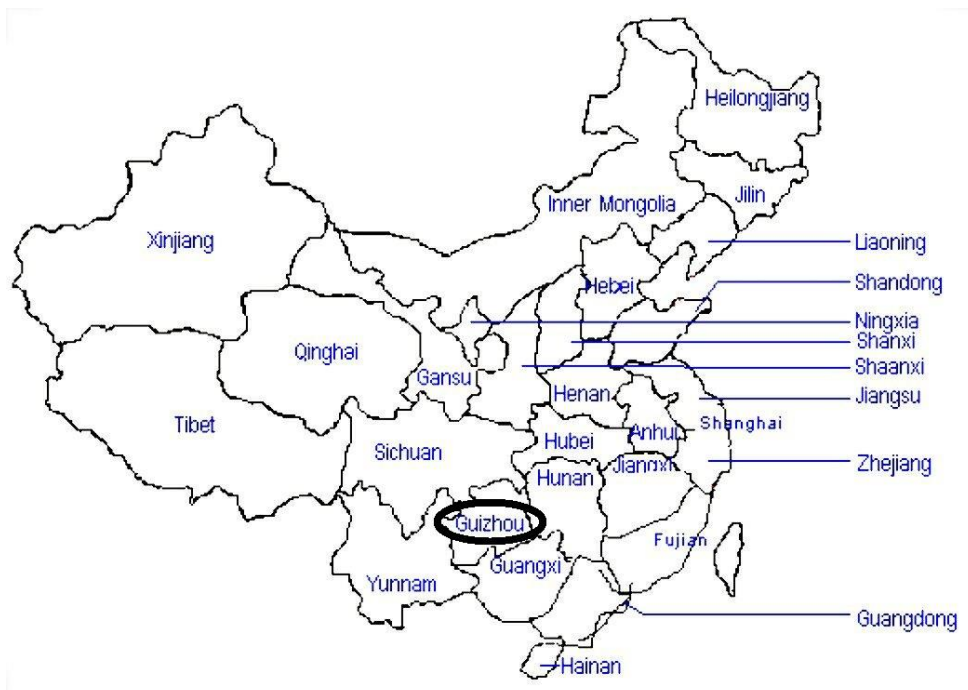


Figure 36 The map of Guizhou Province which was marked with black circle
 Retrieve from <https://images.app.goo.gl/JhzaxZo11dkdzrpB91418&fm=26&gp=0.jpg>

2.2 Administrative Divisions

Guizhou Province has many regional divisions in levels of city, county, village and other administrative units. It has jurisdiction over Guiyang city, Zunyi city, Anshun city, Bijie city, Tongren city, Liupanshui city, Xingyi city (West Qian prefecture), Kaili city (Southeast Qian prefecture), Duyun city (South Qian prefecture).

(Retrieve from <https://mu.mbd.baidu.com/ahvwt5b?f=cp>)

Major cities in Guizhou province are shown in the map below:

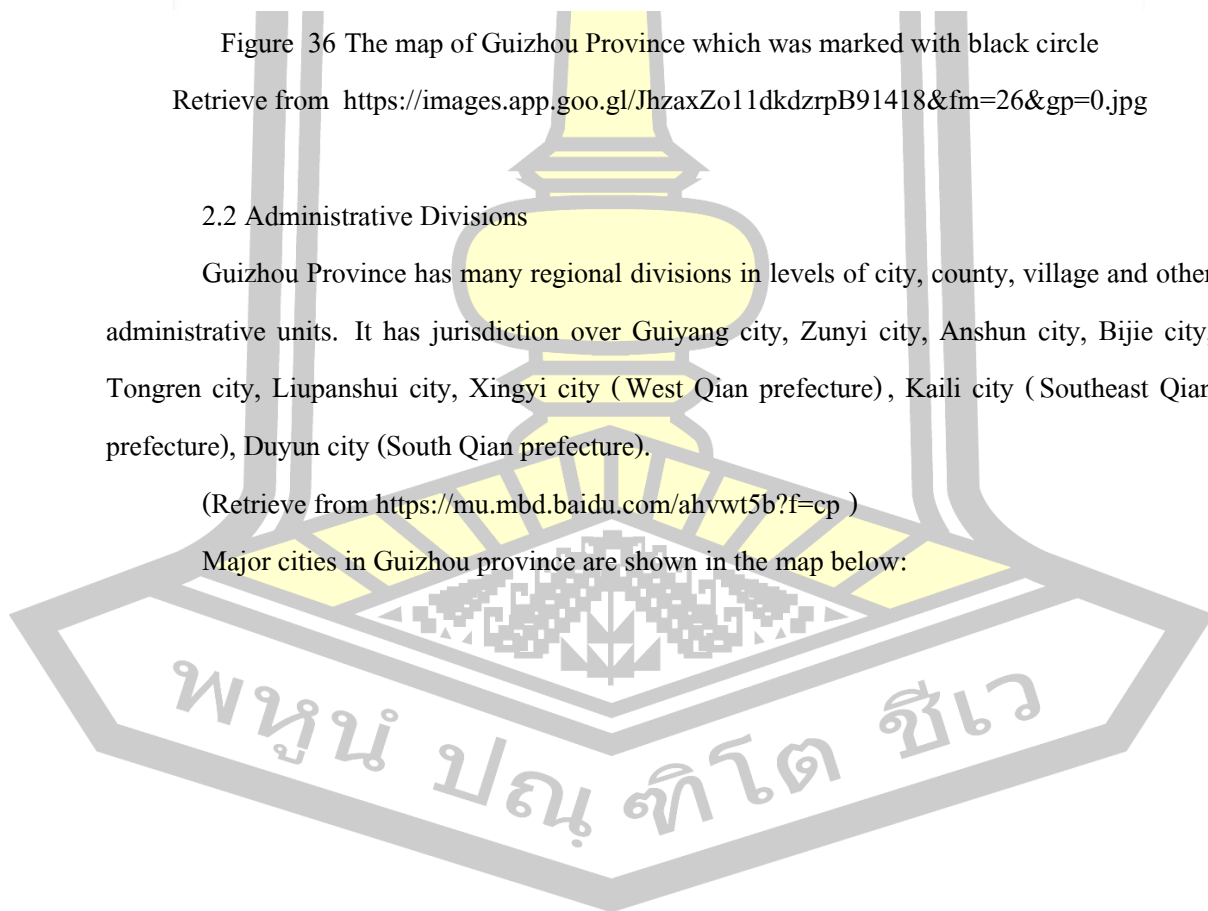




Figure 37 The map of nine administrative districts of Guizhou Province

Retrieve from

https://ss2.bdstatic.com/70cFvnSh_Q1YnxGkpoWK1HF6hhy/it/u=1452708564,2609396702&fm=26&gp=0.jpg

2.3 Education Conditions

Guizhou has about seventy universities and colleges which could offer bachelor degrees and undergraduate courses. A few of these institutes could offer doctoral or master programs. There are totally 18,000 graduate students and 630,000 undergraduate students in this province. However, the sources of higher education resources cannot reach the average line, as reported in relevant statistics of the ministry of education.

The distribution of higher education institutions in Gui Zhou province is very uneven. Specifically, the provincial capital Gui Yang, has 34 higher education institutions which accounting for more than 50% of the total number in the province. Other cities basically run only two or three institutions of higher learning. However, Guizhou province has made great efforts to develop its education system in recent years. Educational authorities have been striving to providing the programs of doctor or master degrees in more universities and colleges, and meanwhile make efforts to construct new higher education institutions to provide and balance the

educational resources of the province. Therefore, the province will be able to provide more opportunities for students to receive higher education.

(Retrieve from <https://rh.mbd.baidu.com/7xg7enz?f=cp>)

3. The history of three universities selected in this study.

3.1 Guizhou Normal University



Guizhou normal university, formerly known as the "National Guiyang normal College", was founded in 1941. It was one of the eight state-founded Normal Colleges in China at that time. The process of its development process is as follows: in 1950 its name was changed to "Guiyang Teachers College"; in 1985 the name was changed to "Guizhou Normal University" by Guizhou Provincial Government in 1996 and was identified as a provincial key university; in July 2013, it was formally approved to grant doctorate degrees; in 2015, it became a part of Guizhou Province's normal university department; in 2017, it was included into the "111 project" of colleges and universities; in 2018, it was assigned to be a base of inheritance of Chinese excellent traditional culture.

The university is located in Guiyang City, capital of Guizhou Province. It has three campuses, namely Yunyan campus, Baiyun district and Huaxi campus, covering an area of more than 2,800 mu. The university has 24 colleges, a department of continuing education and an independent college, including the college of arts, school of law, institute of history and politics, economics and management college, foreign languages institute, school of education science, mathematical sciences, physical and electronic science institute, college of chemistry and materials science, college of life science, geography and environmental science institute, school

of music, academy of fine arts, physical education institute, institute of mechanical and electrical engineering, materials and construction engineering institute, the international college of tourism culture, Marxism institute, institute of international education, big data and computer science institute, institute of media institute of entrepreneurship, innovation, teacher education institute, college of continuing education, independent Qiu Shi college, and a teaching department. It has formed a comprehensive disciplinary layout featuring teacher education. There are 36,000 full-time students, including more than 3,000 graduate students.

At present, the university has more than 2,600 on-job staff, including more than 1,800 lecturers, 300 professors, more than 650 associate professors, more than 500 staff with doctor degrees and 1,000 staff with master degrees. There are 3 academicians, 4 members of "Chang Jiang Scholars Award Program", and over 30 experts with special allowance from the state council. There is one national-level teaching team and five provincial-level teaching teams.

It was assigned to be a point of characteristic construction of undergraduate programs in China. There are five national undergraduate majors and comprehensive reform pilot projects, as well as 19 provincial colleges and universities demonstration undergraduate majors. It has one national university off-campus practice base, one national experimental teaching demonstration center, one provincial teacher teaching development demonstration center, two provincial key discipline talent training bases, 20 provincial excellent courses, and six provincial experimental teaching demonstration centers. The university has undertaken more than 1,000 scientific research projects at or above the provincial and ministerial level, including 200 national-level scientific research projects and more than 1,000 provincial and ministerial scientific research projects. Staff there have published more than 270 academic works and more than 2200 academic papers included academic database such as SCI, EI, ISTP, CSSCI and CSCD.

The university has established long-term cooperation and exchange relationship with other universities and scientific research institutions in more than 40 countries, including the United States, the United Kingdom, Australia, Japan, South Korea, Thailand and the Philippines, and has carried out long-term student exchange programs. (Retrieve from http://e.gznu.edu.cn/erji1_1/Introduction.htm)

3.2 Guizhou Normal College



The predecessor department of Guizhou education institute was established in 1978. Approved by the ministry of education of the People's Republic of China, the college was transformed into an ordinary undergraduate college in 2009 and renamed Guizhou Normal College. In 2012, the college was awarded the bachelor degree awarding unit qualification. In 2015, it passed the undergraduate teaching qualification assessment of the ministry of education.

The school has more than 1,100 staff, 660 full-time teachers and 90 guest speakers. Among them, there are more than 70 individuals with senior titles, 280 individuals with deputy senior titles, 150 individuals with doctoral degrees and 520 individuals with master degrees. There are 9 experts enjoying special subsidies from the state council and Guizhou provincial government, 5 experts within the program "thousand talents plan" "Yangtze River Scholars" and "young thousand talents plan", 1 academic leader at the provincial level, 7 lecturers at the provincial level and 2 teaching teams at the provincial level.

The college has a total of 13 departments, respectively the school of arts, school of foreign languages, school of education science, institute of history and the social, economic and political institute, institute of mathematics and computer science, physical and electronic science college, college of chemistry and life science, geography and tourism college, sports institute, college of art, media and design institute and school of Marxism and Leninism. There are 34 undergraduate majors provided in the college.

Guizhou Normal College has 12 provincial key disciplines, including 4 provincial characteristic key disciplines, 2 provincial key disciplines and 6 provincial key supporting disciplines. Instructors in it have presided over more than 450 scientific research projects, among

which there are more than 60 national scientific research projects, 140 provincial and ministerial-level scientific research projects, 10 scientific research achievement awards from the ministry of science and technology or the provincial social science office and education department, over 10 national-level invention patents authorized, and 10 software copyrights. Staff of the college have published more than 670 papers in academic journals and conferences in China and abroad, including 180 up papers being collected by SCI, EI, CSSCI and CSCD, as well as 34 monographs.

The institute has established friendly cooperative relationships with 48 universities and educational institutes in China, the United States, Canada, Thailand and Taiwan, and has joined the " international education alliance" . It has signed the " school-enterprise cooperation" agreements with Wudang Government as well as many big companies. (Retrieve from <http://en.gznc.edu.cn/AboutGZNC.htm>)

3.3 Tong Ren University



Tong Ren University derived from Tong Ren Ming de Middle school founded in 1920 and Tong Ren Normal College founded in 1978. In 1993, it was renamed Tong Ren Normal College; In 2006, the institute was upgraded to a full-time undergraduate institution and renamed Tong Ren University. In 2010, the university was qualified to confer bachelor degrees.

The school is located in Tong Ren City, Guizhou province, a famous city in the west of China. Its teaching and scientific research instruments and equipment worth a total of 73 million yuan, and the library has more than 920,000 paper books and 2.84 million electronic books.

The school has 15 colleges, including the school of arts, school of mathematical science, school of education science, biology and engineering college of agriculture and forestry, law and

politics, economy and management sciences, foreign language department of literature, music, fine arts, engineering, physics and applied mathematics and information engineering, biological and chemical engineering, the athletics fasten, school of education, and school of social sciences. Among them, there are 37 undergraduate majors and 7 junior college majors provided.

The university has more than 770 staff, 530 full-time lecturers and 70 part-time speakers. Among the full-time staffs, there are more than 340 individuals with doctor or master degrees and more than 300 individuals with senior titles.

The university has established more than 170 scientific research projects, including 1 national project and 50 provincial and ministerial projects. The university has published 518 papers, including 235 in Chinese core journals, 35 monographs, and has participated in the compilation of 96 types of textbooks.

The university adheres to the development of education, and implements diversified cooperation and exchanges with more than 20 foreign universities in the United States and Thailand. In addition, it has selected and sent many students to Taiwan colleges and universities for exchange, and has enrolled many foreign students, which is a part of its attempt to be an international institute. (Retrieve from <http://www.gztrc.edu.cn/s.php/english/item-list-category-18815.html>)

4. Evaluation of Erhu Learning Efficiency

There are several methods of evaluation of *Erhu* learning outcomes:

- 4.1 Evaluation by instructors in class
- 4.2 Evaluation by peer students in class
- 4.3 Self-evaluation
- 4.4 Mid-term examination and final examination to appraise stage performance

The criteria of evaluation (Table 1) are as follows:

Table 1 Erhu Learning Efficiency

Category	Criteria	Level)score(
Tone quality	The timbre consistently remains clear and focused throughout the instrument's range.	10
	The timbre mostly remains clear and focused throughout the instrument's range.	8
	The timbre often consistently remains clear and focused throughout the instrument's range.	5
Tone quality	The timbre does not often consistently remains clear and focused throughout the instrument's range.	2
	The timbre mostly remains clear and focused throughout the instrument's range.	8
	The timbre often consistently remains clear and focused throughout the instrument's range.	5
Rhythm	The rhythms and the beat are consistently accurate.	10
	The rhythms and the beat are mostly accurate.	8
	The rhythms and the beat are often accurate.	5

Table 1 Continued

Category	Criteria	Level)score(
	The rhythms and the beat are not often accurate.	2
Tone quality	The timbre does not often consistently remains clear and focused throughout the instrument's range.	2
	The timbre mostly remains clear and focused throughout the instrument's range.	8
	The timbre often consistently remains clear and focused throughout the instrument's range.	5
Rhythm	The rhythms and the beat are consistently accurate.	10
	The rhythms and the beat are mostly accurate.	8
	The rhythms and the beat are often accurate.	5
	The rhythms and the beat are not often accurate.	2
Note accuracy	Notes are consistently accurate.	10
	Notes are mostly accurate.	8
	Notes are often accurate.	5
	Notes are not often accurate.	2
	Attacks are mostly secure.	8

Table 1 Continued

Category	Criteria	Level)score(
Articulation	Attacks are consistently secure.	10
	Attacks are mostly secure.	8
	Attacks are often secure.	5
	Attacks are not often secure.	2
Dynamics	Dynamics are consistently accurate.	10
	Dynamics are mostly accurate.	8
	Dynamics are often accurate.	5
	Dynamics are not often accurate.	2
Relax state	The performance is consistently relaxed.	10
	The performance is mostly relaxed.	8
	The performance is mostly relaxed.	5
	The performance is mostly relaxed.	2
Emotional expression	The emotional Expression is consistently profound.	10
	The emotional Expression is mostly profound.	8
	The emotional Expression is often profound.	5

Table 1 Continued

Category	Criteria	Level)score(
	The emotional Expression is not often profound	2
Stage image	Stage image is consistently good.	10
	Stage image is mostly good.	8
	Stage image is often good	5
	Stage image is not often good	2
Practice	The performance is consistently indicating regular practice.	10
	The performance is mostly indicating regular practice.	8
	The performance is often indicating regular practice.	5
	The performance is not often indicating regular practice.	2
Costume	Costumes look very good.	10
	Costumes look good.	8
	Costumes look not very good	5
	Costumes look not good	2

5. Summary

There are many Erhu playing skills and teaching modes, but the Erhu teachers in Guizhou Province are limited relatively, so innovation and reform in teaching are needed to better promote the development of Erhu teaching in Guizhou Province.

CHAPTER III

RESEARCH METHODS

1. Selection of Research Methods

The following types of qualitative research methods were utilized in the study.

Traditional Chinese music has been lasting for thousands of years. Many scholars have devoted their whole lives to relevant research and investigation, which has aroused a sense of awe in my heart. Their spirits make me feel quite admirable, so I want to conduct a deeper and more comprehensive exploration of Erhu music culture.

Study of Erhu music should not be limited to the field of music art, but should be put under the background of the whole culture and education system. It should be studied as an organic part of culture and education, and cover the form and ontology of music. Through the combination of multiple disciplinary methodology, this paper discusses the Erhu music synchronic and diachronic, and effectively integrates and masters the historical existence of Erhu culture with the current situation of contemporary inheritance.

Structure of this research project is shown below as follows:

1.1 Researching and formulating the implementation plan

1.1.1 Clarification

Convene the research group meeting to clarify the responsibilities of each team members and the annual work plan of the research group.

1.1.2 Consultation

Consult relevant experts and scholars for guiding opinions on the research ideas, framework, experimental design, research methods, questionnaire design and index determination of this topic.

1.1.3 Investigation

Investigate the status quo of polymorphous teaching integrated with data, and determine the experimental objects according to relevant index requirements.

1.2 The concrete implementation stage

1.2.1 Research Objects

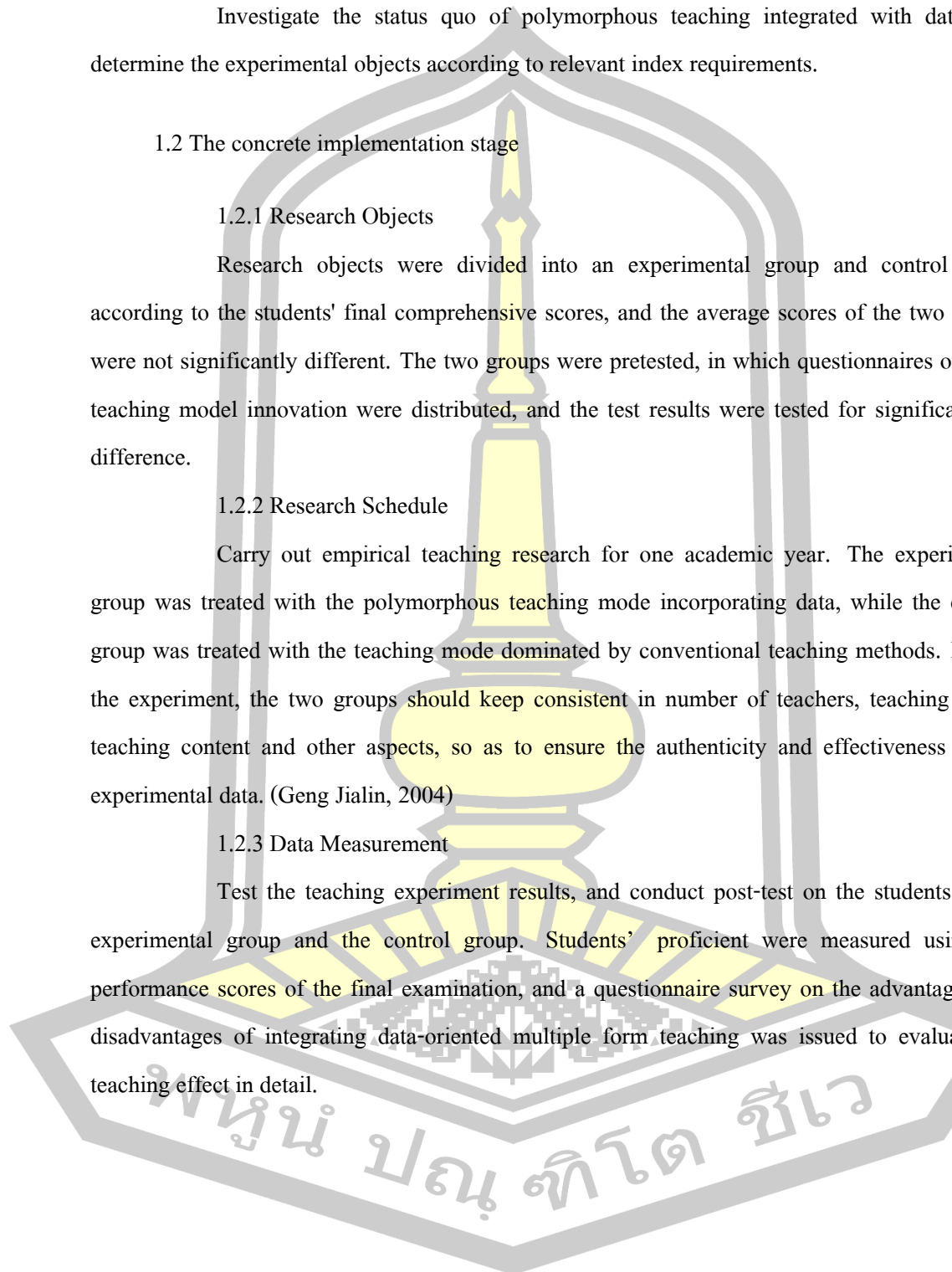
Research objects were divided into an experimental group and control group according to the students' final comprehensive scores, and the average scores of the two groups were not significantly different. The two groups were pretested, in which questionnaires on Erhu teaching model innovation were distributed, and the test results were tested for significance of difference.

1.2.2 Research Schedule

Carry out empirical teaching research for one academic year. The experimental group was treated with the polymorphous teaching mode incorporating data, while the control group was treated with the teaching mode dominated by conventional teaching methods. During the experiment, the two groups should keep consistent in number of teachers, teaching hours, teaching content and other aspects, so as to ensure the authenticity and effectiveness of the experimental data. (Geng Jialin, 2004)

1.2.3 Data Measurement

Test the teaching experiment results, and conduct post-test on the students in the experimental group and the control group. Students' proficient were measured using the performance scores of the final examination, and a questionnaire survey on the advantages and disadvantages of integrating data-oriented multiple form teaching was issued to evaluate the teaching effect in detail.



1.3 The Summarize Stage

1.3.1 Research Analysis

According to the teaching evaluation results, the test data were statistically analyzed using mathematical statistics approaches. Students' motives and interest of study, teaching effect, final grade, performance level evaluation and other quantitative factors were compared and analyzed. (He Na, 2017)

1.3.2 Research Summary

Summarize the teaching achievements of course teaching and practice, discuss the deficiencies in polymorphous teaching, and define the direction for further improvement.

Summarize the experience of theoretical improvement, and transform a series of practical activities such as classroom design, teaching concept and teaching method integrated with data-oriented polymorphous teaching into theoretical achievements for promotion in the field of instrumental music teaching in colleges and universities. (Du Xiaofeng, 2016)

2. Concepts and Indicators of the Research

2.1 The criteria of choosing research objects and scholars

2.1.1 Guizhou Normal University

- 1) Interviewee: Luo Zhang Han.
- 2) Criteria: Guizhou Normal University is the most celebrated normal university in Guizhou Province that provides teacher training programs. Its music school recruits outstanding teachers and students. It is suitable for the application of teaching method innovation in this research, since teachers could implement new teaching methods and get feedback from students.
- 3) Luo Zhang Han is the professional instructor of *Erhu* performance in Guizhou Normal University. She has won many awards in professional competitions because of her tacit playing techniques. She will play an important role in my research.

2.1.2 Guizhou Normal College

1) Interviewee: Yu Liang Liang

2) Criteria: Guizhou Educational University is a medium level institute in Guizhou Province that provides teacher training programs. Students of its music school always have some difficulties in playing *Erhu*, which allows me to identify the problems of *Erhu* performance among them and find out the solutions.

3) Yu Liang Liang is a professional instructor of *Erhu* performance in Guizhou Educational University. She has many years of teaching experience and has accumulated many teaching methods. She will help me a lot in my research

2.1.3 Tong Ren University

1) Interviewee: Zhang Hui Fen

2) Criteria: Tong Ren University is a comprehensive higher educational institute in Guizhou Province. Students of its music school can apply for jobs as actors or join music organizations, therefore the aims of teaching there are different from normal universities. I will interview students in different levels to learn about their different preference of career.

3) Zhang Hui Fen is a professional teacher of *Erhu* performance in Tong Ren University. We both graduated from Tianjin Conservatory of Music and have a good relationship. We often communicate with each other and are committed to the exploration of music teaching methods. We will cooperate again in my research.

2.2 Concepts Definition

The study will explore the issues of *Erhu* pedagogy.

2.2.1 Indicators

1) Hold the group meeting to define the responsibilities of each member of the groups as well as the annual work plan;

2) Consult relevant experts and scholars for guidance on the research ideas, research framework, experimental design of research methods, questionnaire design and index determination.

3. Strategy of the Research

3.1 Interview

Interview the scholars in music schools in Guizhou Province using official introduction letters obtained from directors of the colleges.

3.2 Invitation

Sending invitations to friends or colleagues, visit them in their work units.

4. Selecting Objects and Sending Questionnaires

4.1 Selecting Research Objects

Select three professional instructors of Erhu performance in universities in Guizhou Province;

4.2 The Questionnaire for Instructors

4.2.1 Key points of teaching

4.2.2 Difficult points of teaching

4.2.3 Teaching content

4.2.4 Teaching means

4.2.5 Teaching methods

4.3 Selecting students

The questionnaire for students includes the following aspects:

4.3.1 The difficulties techniques of left hand

4.3.2 The difficulties techniques of right hand

4.3.3 The length of practice

4.3.4 The etudes and works

4.3.5 Their opinions towards digital teaching methods

4.4 Selecting Events

4.4.1 Graduation concert of Erhu major.

4.4.2 The art show includes Erhu playing

It includes Spring Festival Concert, Students Welcoming Concert.

4.4.3 Participation

The relationships with the participants should be developed in this process under the following guidelines:

1) Let the students know my playing style through my own performance, and raise some doubts through their watching. For example, we can talk about the advantages and disadvantages of my performance.

2) From watching the students' performance, I will identify the students' problems in performance. Then we can share some different ideas about the techniques to each other. All of us will get some new thoughts and enhance our relationship in this process.

3) Communicate with students to discuss problems related to classroom teaching, such as innovations of new teaching methods, innovations of practice methods, and creation of performance forms.

5. Observations

5.1 Feedback

Provide feedback of teaching by raising some questions in the performance, and judge the comprehensiveness and effectiveness of the classroom content through the mastery of various skills of the left and right hands.

5.2 Investigation

Observe and then ask questions or communicate to understand the content of the investigation.

6. Final Analysis and Interpretation

6.1 Analysis

Draw a conclusion about the difficulties that the students came across in their *Erhu* classes; then make a list of their specific schedules to analysis overcome their disadvantages.

6.2 Solutions

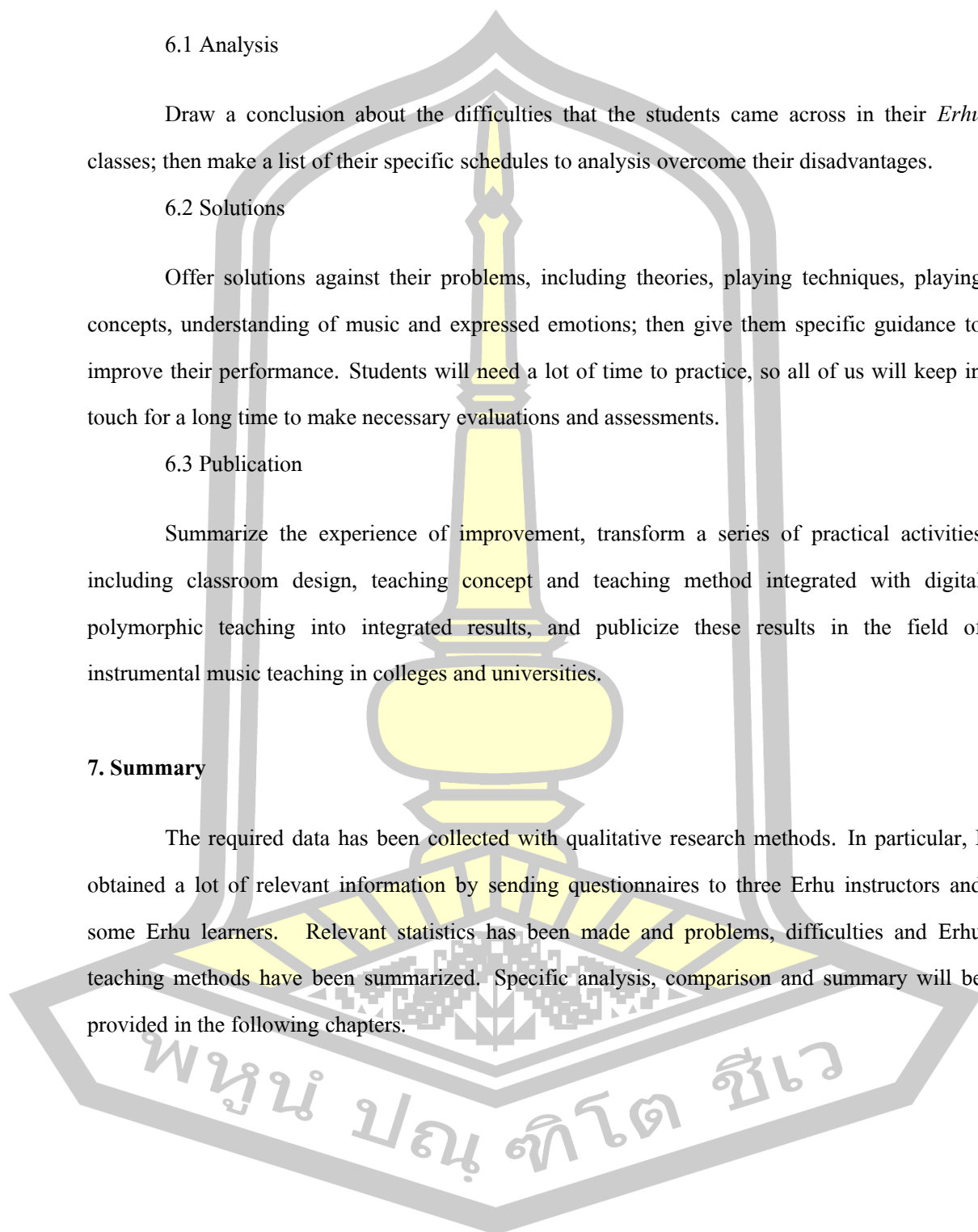
Offer solutions against their problems, including theories, playing techniques, playing concepts, understanding of music and expressed emotions; then give them specific guidance to improve their performance. Students will need a lot of time to practice, so all of us will keep in touch for a long time to make necessary evaluations and assessments.

6.3 Publication

Summarize the experience of improvement, transform a series of practical activities including classroom design, teaching concept and teaching method integrated with digital polymorphic teaching into integrated results, and publicize these results in the field of instrumental music teaching in colleges and universities.

7. Summary

The required data has been collected with qualitative research methods. In particular, I obtained a lot of relevant information by sending questionnaires to three Erhu instructors and some Erhu learners. Relevant statistics has been made and problems, difficulties and Erhu teaching methods have been summarized. Specific analysis, comparison and summary will be provided in the following chapters.



CHAPTER IV

RESULTS

Along with the rapid development of China's economy, the society is posing an increasingly high demand on talent quality. In this context, educational reform turns to be necessary to improve the standard and quality of teaching. With a long history and profound traditional cultural connotation, Erhu is not only a kind of important traditional music instruments of China, but also plays an important role in music education in colleges and universities. By learning it, students can improve their musical proficient and artistic taste, and solidify their senses of identity and belongings to national culture, which also promotes the development and dissemination of national culture of China. (Hu Wenjie, 2017)

Current Erhu teaching system in China is becoming mature, but there are still some problems in actual teaching practices. These problems not only compromise teachers' innovative ideas, but also affects students' enthusiasm and initiative, thus restricting the improvement of students' efficiency of learning and practice. Therefore, relevant reforms in music education should inevitably bring out new ideas of Erhu teaching in colleges. Colleges could help students master basic Erhu playing skills through reasonable curriculum setting, and further explore the intrinsic rules of Erhu playing on this basis. This will help stimulate students' interest in learning Erhu and improves their aesthetic and cognition of music. (Geng Jialin, 2008)

1. The Analysis of Erhu Primary Techniques in Teaching Process

Problems in current Erhu teaching process leads to the necessity of conducting in-depth analysis and study to find effective solutions. To improve the quality of Erhu education, a more comprehensive teaching system should be established to encourage innovation and enhance effectiveness. Chinese national musical instruments, still, have just been recruited as subjects of professional education for a short period. Relevant curriculum is simple in content, while textbooks have not been updated in time.

However, we cannot deny the positive effects of these advancements on Erhu development. Rapid development of the society has put forward new requirements for art professionals. We should ensure that Erhu teaching keeps pace with social development and activity innovates. This paper discusses teaching modes of Erhu in colleges and universities, and analyzes how to cultivate talents in line with the education environment of the new era, so as to improve the effectiveness of Erhu teaching and promote inheritance and development of Chinese national musical instruments.

This study was carried out in an effective means. Such an approach could arouse educators' attention and feedback on Erhu teaching, and meanwhile help students to understand the key points and difficulties of the process. From simple to difficult, this paper introduces the history, representatives, repertoire style, teaching materials, structure and performance skills of Erhu, which clearly presents the basic and key points of Erhu learning to students. Although most students majoring in Erhu performance have a good foundation of performance, they still need to lay a solid technical foundation and continuously learn about music cultures so that they could acquire a better understanding and become more skilled of Erhu performance.

Erhu education cultivates both teachers and talented students, and plays an important role in promoting the development and innovation of music culture. Along with the development of social science and technology, education has also entered an era of information and data. Data-oriented research of music subjects should be conducted based on research of big data in education field to build a data-oriented platform with music features and relevant teaching modes. However, today's Erhu education in Guizhou Province still retain the traditional mode that contains many drawbacks in curriculum setting, training mode, learning mode, teaching evaluation mechanism and other aspects. The following paragraphs illustrate some problems existing in Erhu teaching practices:

1.1 Lack of Teaching Resources

The continuous expansion of colleges and universities makes teaching resources limited and brings difficulties for teachers to perform their jobs. Because some teachers fail to recognize basic problems that students may have, and keep using stereotypical teaching methods, a lot of students are not able to follow their ideas, which compromises the effectiveness of Erhu teaching. In view of this problem, institutes, in the process of enrollment, should formulate strict and

unified enrollment standards. Instructors need to "teach students in accordance with their aptitude" to exploit complementary advantages of students and make teaching process more effective by stimulating students' interest in learning.

1.2 Antiquated Teaching Methods and Materials

Erhu teaching methods are oversimplified, and teaching materials are outdated. As a result, some students can only play the repertoire taught by teachers, but their visual performance ability has not improved much. Therefore, teachers should adjust their teaching methods dynamically and constantly enrich and update teaching materials. Also, they need to adopt advanced teaching concepts to encourage students to actively participate in classroom discussion, create a good atmosphere, and help students to learn independently and switch from passive to active study.

1.3 Lack of Practice of Art

In teaching process, teachers always pay too much attention to theories, but ignore the practice of art. As Erhu performance is a music subject that integrates practicality, improvisation and extensive application, the lack of practice will make it difficult for students to give full play to their actual level when performing. Hence teachers should adhere to the combination of theories and practices in their teaching process, apply theory guidance to the practices, provide a good display platform for students such as teaching achievements performance and exchange performance, and enhance the interaction between teachers' "teaching" and students' "learning" at the same time.

Colleges and universities should make Erhu curriculum more efficient and humane, which requires them to share outstanding music instructors and to save and constantly update relevant data.

A digital teaching mode can be applied in the teaching of national instrumental music in colleges and universities. Higher music education has always been responsible for training music instructors and performers. It promotes crucially the development and innovation of music culture. With the fast development of science and technology, we should fully explore the potential of new technologies in music education, and apply these technologies to teaching practices in a reasonable way so that students can actively learn from a combination of visual images, audios, thinking, perceptions and other senses. This mode will be able to optimize

teaching effect. Of course, the teaching of national music instruments in colleges and universities has its distinct features. Compared to the traditional "one-to-one" teaching mode, the digital "multiple form" mode could create a digital platform with features of music instruments and concert with the development of modern music education.

The following sections discuss a "two-line" form of Erhu teaching. It involves the three-dimensional dynamic analysis of skills, audio-visual data feedback, and enlightenment of Carl Orff's music teaching method.

2. The Exploration of New Teaching Pattern of Erhu

2.1 The "Two-line" Teaching Form.

2.1.1 Offline Teaching

It refers to a teaching approach which face-to-face teaching in a physical space or practice rooms. It is also a main approach of music instruments education. This kind of teaching mode has the advantage that the teaching content could be selected based on students' aptitudes. But it also shows obvious disadvantages, such as monotony, repeatability and occlusion.

2.1.2 Online Teaching

It refers to teaching on the Internet with high-quality resource database. The resource database needs to be classified and constructed based on contents. It should also students to find matching explanations and demonstrations using keyword search. In addition, local colleges and universities can hire famous domestic experts to teach online classes on a regular basis so as to provide students with a better learning platform. Such kind of online teaching model removes the limitation of time, place and class hours, and enable students to have access to wonderful courses of countless excellent teaching experts. Construction of an online teaching platform can be divided into four parts: expert skill teaching, repertoire demonstrations, concert and lecture appreciation and theoretical knowledge.

1) Expert Skill Teaching

Expert skill teaching online courses should teach left hand skills of holding handling, kneading strings, changing handles, overtone, sliding, trilling, arpeggios and the right

hand skills of holding the bow, moving the slow bow, moving the medium speed bow, moving the fast bow, jumping bow, and double-string operation bow.

2) Repertoire Demonstrations

Repertoire demonstrations online courses should include demonstrations of traditional repertoire, modern repertoire and transplant repertoire. Explanations should focus on the analysis of composition background, structures, strength and weakness of melodies, diversified emotions, musical connotations and the common performance techniques. All the repertoire should be accompanied by instructors' demonstrations. In this way, all the students can optimize their choice according to their own performance level and obtain opportunities to watch many pieces of explanations and demonstrations.

3) Concert and Lecture Appreciation

Concert and lecture appreciation online courses should also include videos of recorded professional Erhu concerts, competitions and lectures. Videos should be uploaded to the database and turned into high-quality class resources, in order to help students to improve their comprehension of Erhu performance by watching excellent players showing their skills and emotions. (Guo-ping, 2007)

4) Theoretical Knowledge

Theoretical knowledge Erhu performance demands guidance of scientific theories. Every single skill in Erhu performance should be theorized and conceptualized in textbooks. At the same time, a large number of related books, journals and papers should be uploaded to the database for the students to communicate about theories, so that each student can accurately search for relevant materials of a certain skill or a certain track with smart settings. Through careful and repeated deliberation, students will continuously build their theoretical basis and update their theoretical concepts to guild their behaviors in performances.

2.1.3 The realistic example of application of the "Two-line" teaching form.

Xing Yi Normal University for Nationalities is an institute of higher education. It has completed a project of building a database of "local Erhu representative repertoire" and integrated it into actual Erhu courses. The online database of Erhu performances called "eight-tone singing", a local, intangible cultural heritage, has been integrated into specific steps in college teaching.

The concept of music Erhu intangible cultural heritage is integrated into college education. Intangible music culture heritage of music has been incorporated into the living cultural construction in colleges and universities, which has produced a specialized and characteristic teaching mode. In-depth exploration of the non-legacy culture of local music is conducted through analysis, comparison, summarization and other approaches to produce teaching specimens of local music culture. At the same time, it provides high-quality music resources and enhances the communication and dissemination of music culture among different regions.

Introduction of Erhu intangible cultural heritage into teaching activities in colleges and universities are as follows:

1) About Teaching Methods

Professional instructors are inheritors of Erhu culture, while students are imparting objects. In teaching practices, instructors are supposed to encourage students to participate in singing or performance, and help students cultivate their interests in music through original musical impulses.

2) About Teaching Materials

First, Erhu courses should be reasonably integrated and systematically classified. Students should have opportunities to appreciate folk music, understand artistic connotations, and improve their skills of theoretical research. Teaching materials should be reflected in classroom practice, thus evolving teaching activities from representational expression to connotative inheritance.

Secondly, inheritors of Erhu cultures should serve as the main body of lectures and take overall grasp of teaching materials to maintain the purity of music teaching. At the same time, teachers of professional skills should provide students with different skills guidance to help them improve their performance skills. Combination of the two will ensure ultimate enhancement of students' performance abilities. Music inheritors and college instructors should form a professional team that regularly collects music materials from fields, create multiple voice singing and playing melodies, and enriches soundtracks. The music category has been turned from the folk performance form to the professional stage performance art form, which greatly enhances performance and appreciation.

Thirdly, Erhu curriculum related to intangible cultural heritage should be adjusted to be compulsory, and corresponding credit hours should be specified. Related courses can be set as requirements for freshmen. After one year of study, relevant performance teams can be established in the sophomore and junior stages. (Hui-lei, 2010)

3) About Teaching Practices

Elementary and high school could build teaching demonstration bases to enrich campus culture. At the same time, students could explore teaching methods through internships. After graduation, they will be able to enrich teaching content in primary and secondary schools, and inherit and promote local music cultures. Besides, institutes could cooperate with relevant cultural institutes and performance groups to expand the platform of practical performance.

4) About the Scientific Research Project

It is possible to compile monographs and teaching materials related to local Erhu cultural heritage, record supporting courses, publish papers and application cases, and create a collection of musical works.

5) Creation of Online Courses

Online courses of the above-mentioned Erhu cultural heritage should be created using relevant data on the line for sharing.

Such an act also conforms to normal, ethnic and local characteristics of the university. The database will also provide professional resources of performance and teaching for ethnic music appreciation as well as reference for other universities to evaluate courses, and potentially promote the sharing of Erhu resources among ethnic minorities. These online resources could be used to build a professional and characteristic teaching mode in colleges and universities, deeply explore local music cultures, and create samples of local music culture education through analysis, comparison and summary. Meanwhile, it can provide high-quality music resources to promote cultural exchange among different regions. Courses of intangible music culture heritage should be organized with an overall layout and classified systematically, so that students could experience the folk music, understand the artistic connotation, and improve their skills of theoretical research. This way teaching materials could be reflected in actual practices.

2.1.4 The Advantages and Disadvantages of Online and Offline Education.

Advantages of Online Education:

1) Online learning is not location-specific. College students mainly attend classes in predetermined classrooms, so they are greatly limited by space, which is not conducive to the implementation of teaching progress. Development of online education, nevertheless, could reduce the cost of location and make up for the disadvantage of offline education.

2) Online education is timeless. Students attend classes mainly in fixed schedules. Compared with offline education, online education has an advantage in that it allows students to enjoy teaching materials at any time and supports after-class review. In other words, when students forget something, they can review it online. The time in online education is broad, which is more conducive to students' arrangement of time.

3) Content of online education is diversified. College students are normally taught by fixed instructors, so the materials they learn are severely restricted. Compared with offline education, online education allows students to search any professional content they are looking for, as well as different interpretations from different experts. It makes up for the shortcomings of limited materials in offline education.

Advantages of Offline Education:

It is problematic to rely on online education solely, because online resources are designed for all students, not specific for any one of them. However, in offline education, instructors could set teaching schedules and contents for a certain student, and the process could be more student-centered. With understanding of students' status quo, instructors can help them make faster progress.

In short, both online and offline education involve advantages and disadvantages. Institutes should give full play to the advantages of various methods and apply these methods on Erhu teaching. In my opinion, the "two-line" teaching is mainly based on offline teaching and supplemented by online teaching. The combination of two-line teaching can transform "one-to-one" teaching mode into "many-to-one" form and enable maximum utilization of high-quality teaching resources.

2.2 The Form of Three-dimensional Movement Analysis of Skills

In recent years, a variety of difficult playing techniques have emerged one after another, which greatly promotes the creation upsurge of modern playing works. However, no matter how innovative the skills of Erhu performance are, the core of Erhu performance is bound to the posture of a player holding the instrument body on their left hands and the bow on their right hands.

Erhu players generally believe that, "Erhu playing three points by fingering, seven points by bow force". For the left hand, although there is a variety of fingering skills, the classification is clear and skills are easy to learn. Therefore, it is relatively unified to understand the skills and theories of left hand playing. For the right hand, the skills seem simple, but the strength of the bow, speed, and priorities are very difficult to control. During performance, the auditory changes of bow movement are quite distinct, but it is difficult to distinguish the dynamic state of bow movement visually.

Therefore, different players have different opinions on how to use the bow. Slow bow, medium and fast bow have produced dramatic ambiguity. In the final analysis, this is because although the teaching of Erhu performance is becoming more and more professional, the theories are basically based on teachers' personal experience. Therefore, students who learn from different teachers may have greatly different playing skills.

Art is colorful, and even the same work requires many performers to perform through different styles and characteristics. However, no matter how a performer shapes his playing style, it is indispensable from his theoretical basis. Therefore, basic theories of Erhu playing skills need to be further explored, standardized and systematized. In particular, techniques of Erhu bow movement need to be supported by corresponding theories. While perfecting the score materials of etudes and solos, institutes should standardize textbooks of performance theory.

The application of three-dimensional analysis will enable instrumental music teaching to achieve twice the result with half the effort. The main content of analysis is as follows:

2.2.1 The Structure of Bones of Arm

Analysis of the basic structure of arm bones which are mainly composed of shoulder bones, upper arm bones, elbow bones, forearm bones, wrist bones and hand bones: bones are connected to joints, muscles, ligaments and other tissues as a whole to support the movement of

human bodies. The scientific motion is to make each body part to coordinate adequately. Therefore, how to coordinate the movement of various parts in the bow movement has become an important topic of this study. The anatomic structure of the human arm skeleton is shown as follows:

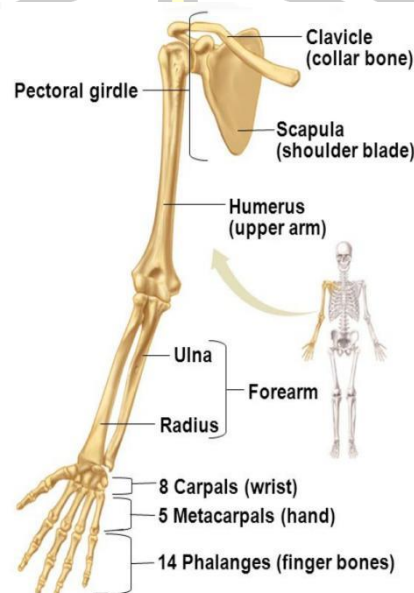


Figure 38 The skeleton of the arm

Retrieved from <https://images.app.goo.gl/io3fN5jZvLUc8eiQ7>

2.2.2 The Structure of Muscles of Arm

Analysis of basic structure of arm muscles: muscle tissue consists of specially differentiated muscle cells which the main function is contraction and expansion. All sorts of actions of viscera inside body are accomplished with it. Muscle tissues can be divided into three categories, namely, skeletal muscles, myocardial muscles and smooth muscles, based on the morphology and distribution of muscle cells. Skeletal muscles are usually attached to bones by tendons, whose contraction is controlled by the will so they are voluntary muscles. Tissues of smooth muscles have stronger contractile characteristic. They are the main sources of motive forces form motions of bodies and limbs, but they are involuntary muscles innervated by autonomic nerves. Myocardial muscles are mainly distributed in the heart and less associated with limb movements. We can deeply learn the composition of muscle tissue groups and analyze the functional advantages and disadvantages of each muscle part in the process of exercise through experiments, and then analyze the rules of muscle group movement required by different

techniques in bow movements in Erhu performance, so as to know the essence of Erhu performance. The anatomic structure is shown in the graph below:

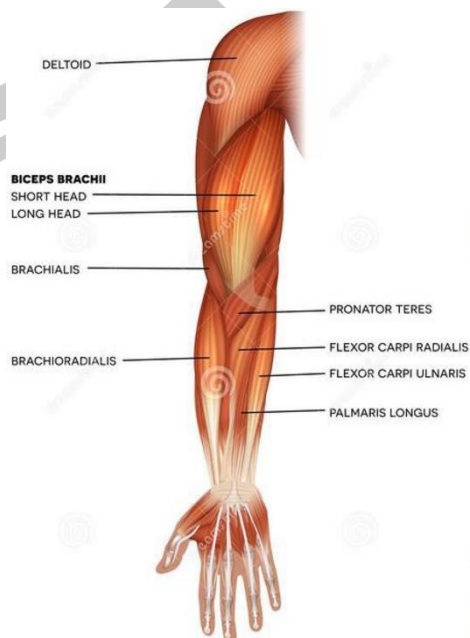


Figure 39 The muscle composition of the arm

Retrieved from <https://dwz.cn/nmVJsyCJ>

2.2.3 Measurement of Speed Range

Measurement of speed-range about different parts of arm: velocity of the three parts was measured by using the upper arm, forearm and hand as independent force points. According to the preliminary study, the movement speed of these three parts is as follows: hand > forearm > upper arm. At the same time, we can discuss the functional advantages of different moving speeds and the above parts. In short, bow movements at different speeds are carried out by different parts as the leading or leading force points.

2.2.4 Measurement of the Range about Motion Intensity

Measurement of the range about motion intensity of different parts: motion intensity of the three parts was measured with the upper arm, forearm and a hand as independent force points. According to the preliminary study, motion intensity of the three parts is as follows: upper arm > forearm > hand. At the same time, the functional advantages of different sports intensity and the above-mentioned parts were discussed and led to a conclusion that states of bow

movements with different strength should be taken as the leading or leading force points of different parts.

2.2.5 Comprehensive Analysis

Comprehensive analysis and research: different types of bows demand respective speed and strength. The corresponding sequence and transition state of arm movements will be obtained. In particular, the point of force, axis of motion, force conversion and other bow elements must coordinate with shoulders, arms, elbows, forearms, wrists, hands and fingers reasonably. The conclusion is as follows:

1) In slow bow performances, first half of the notes' time value needs to be played with the shoulder as the central axis, the upper arm as the main point of force, and forearm and hand as a whole to control bow movements slowly and stably. When first half of notes is finished, it is advisable to use about 1/3 of the bow segment and leave about 2/3 for the second half of the note, so that more changes in the strength of the bow segment can be obtained. After the second half of the notes, the bow should be moved smoothly and evenly after the upper arm is gradually expanded.

2) In medium speed bow performances, players should take their elbows as the central axis. They should use their upper arms as guiding belts and forearms as the main points of force to make their forearms flexible and move lightly. Because the forearm has strong mobility in the process of movement, it is suitable for the adjustment of bow position and making crescendo or diminuendo by lengthening or reducing the bow segment in the same unit of time.

3) In fast bow performances, center point of the forearm should always be used as the central axis, and the power of shoulder hanging elbow should be transferred downward. With the help of natural gravity of the upper arm and bow, the forearm forms a rapid inertial swing, thus directly exerting the power on the bow.

In all of these kinds of bow movements, there are several changes in bow-length, bow-speed and bow-strength that interact with and rely on each other. Generally speaking, within the same unit of time, the longer the bow section is, the faster the bow speed is and the stronger the bow strength is. On the contrary, as bow speed slows down, bow strength will weaken. However, when bow velocity is constant, bow pressure can be adjusted to change the strength of the bow. When bow strength is constant, bow length can be adjusted to make bow speed faster or

slower. Therefore, the length, speed and strength of bow can be adjusted interactively, which has a great influence on the change of sound. In actual performances, when quarter notes, half notes and whole notes are generated with the bow, time value is relatively long. Performers always use slow bow to perform and the variation of strong, weak, fast and slow notes will be abundant. When performers play eighth notes with the bow, they always use medium speed to adjust with bow sections. Time value of the sixteenth note is relatively short, which is suitable for fast performance. Rhythm fluctuation can be expressed by adjusting the length and speed of bow. Besides, sound can be accompanied by changes in subjective emotions, while emotions constantly play a greater regulatory role on velocity, strength and other changes in bow.

2.2.6 Advantages of Three-dimensional Analysis Approach

1) The interpretation and demonstration of instrumental performance skills are extremely abstract, while details of bone movement cannot be visualized during the entire teaching process, so students can only rely on imagination to experience and imitate. The three-dimensional image analysis of performance movement will solve this problem, since videos will be concretely presented through decomposition, splicing, amplification, minification and other technical functions to produce bone coordination during the performance. Thus students can use this approach to explore the essence of movement in the process of instrumental music performance.

2) Various parameters can be comprehensively studied with assistance of theories of dynamics and human anatomy, so as students could deeply analyze functional advantages of different parts of human bodies that are required in instrumental performances and the transformation process of forces during performances. The three-dimensional analysis of different kinds of bow movements in Erhu performance will clearly show the sequence and speed of movement of each part. Application of this approach will make Erhu teaching more scientific, precise, direct and efficient.

2.3 Audio-visual Data Feedback Teaching Mode.

It refers to a good way of recording students' performance for intuitive teaching by modern medias with audio-visual features. It takes students' feedback as the main line of teaching activities and runs through self-study and discussion. Through the comparative analysis with correct demonstration and communication between teachers and students, students could present

relatively stable visual performance and an accurate concept of music effect in their brain to avoid mistakes. This way students could employ variety of senses under to build their learning interest, which induces to better teaching results.

The whole teaching process follows the principles of teacher's guidance, student's participation and multimedia teaching form, so as to construct a high-quality teaching mode in which teachers and students participate together. Moreover, data feedback will promote the realization of the two dimensions, that is, self-evaluation and peer-evaluation. Through self-assessment, students would be able to set priorities and give full play to their main role, so as to find, analyze and solve problems. Students will also have chances to practice their creative and exploratory thinking abilities. Through self-evaluation, students could have a more objective, comprehensive and interactive understanding of instrumental music performance. Communication and cooperation between teachers and students and that among students could also be enhanced, thus building a good cooperative learning platform. Instructors can also find out teaching problems in time through self-evaluation, which is helpful for timely improvement and adjustment in the next stage of teaching. (Li Z, 2011)

Therefore, this kind of teaching method has diverse characteristics such as the time, form and object of feedback. Through audio and video feedback, the education link of teachers is deeply optimized to fully improve the learning link of students. The procedure is as follows:

2.3.1 Data Collection

Data collection is carried out by recording videos of entire courses, including instructors' language, body movements, demonstration, and how students listen to lectures, imitate instructors' performances and communicate with each other. The objectivity and accuracy of data must be guaranteed.

2.3.2 Data Analyze

Teachers and students jointly analyze the data and focus on learning motivation, learning interest, technical details, technical difficulties and other factors. Teachers' analysis is mainly from the perspective of themselves, including teaching materials, teaching duration and teaching effects. Similarly, students' analysis mainly involves their behaviors in class, understanding of class materials and the practice outcomes. When it comes to next class, teachers

and students could analyze each other and express their ideas freely about the mode, method and implications of teaching.

2.3.3 Conclusions from the Data

Teachers and students draw conclusions about the correlation between teaching and learning from the data. Teachers mainly analyze their own factors to find out the advantages and disadvantages, and then find out solutions and make next teaching schemes. Students mainly analyze their own factors to find out the skills and contents that have not been mastered, and then make summaries and following plans of practice. (Jie, 2005)

2.3.4 Implications

After a certain period of application, the audio-visual data feedback teaching form presents four significant implications:

1) It enables students to build their interest and skills of learning. Students, as the main body of teaching, absorb knowledge by participating in discussion and improve their abilities of observing, summarizing, analyzing and solving problems. Active feedback between teachers and students will mobilize the enthusiasm of teaching and learning simultaneously. Meanwhile it will stimulate students to study consciously with an important significance. For the application of this method, still, students should follow well-defined practice schedules and steps.

2) It enables instructors to accurately and timely control their teaching process. With feedback from students, instructors can accurately and timely understand students' progress, effectively control their teaching process, constantly upgrade teaching methods, modify teaching materials, and teach students in accordance with their aptitudes.

3) Feedback in teaching process is conducive to cooperative learning between teachers and students as well as among students. Through feedbacks as a means of interaction, a good cooperation platform could be built and a classroom teaching structure featuring communication and interaction could be constructed.

4) This teaching method makes full use of modern science and technology, which provides great help for the teaching of Erhu and it greatly increases the efficiency of teaching. This is the method that we should share and extensively use in our actual teaching process.

2.4 The Use of Orff's Music Teaching Method to Erhu Teaching.

Carl Orff (1895-1982) was a famous German composer and music educator.

On July 10, 1895, Orff was born in the city of Diessen, an outer suburb of Munich. His father was an outstanding general, while his mother loved nature and art, especially music. Influenced by the family culture and artistic environment, Carl Orff has been exposed to music and drama since he was a child and devoted most of his time to music and drama, which laid a good foundation for him to become a great musical master. There are seven important periods in Carl Orff's lifetime: early childhood, adolescence, music academy in Munich, whole art form, Junte school, return to music drama, and Orff music education internationalization.

Each life experience has an important influence on his music ideas mainly including synthesis, creativity, improvisation, personal involvement, and initiation from local cultures. Principle of Orff's original music education is conducive to cultivate students' abilities of perceptive reaction, comprehension, coordination, memory, creativity, communication, and helps to improve students' ability of feeling, expressing, exploration and creating arts by participating in various activities.

Orff's music teaching method is one of the most famous and influential music education systems in the world. It was proposed by Car Orff, a famous German musician. In the 1980s, Professor Liao, Naixiong introduced this method into China and induced to a great influence on China's music education. In general, Orff's method is more widely used in western countries, while China's music teaching methods always adhere to national characteristics. Only on this basis, localization and innovative application can be in line with the law of music education development in China. Therefore, Orff's method and Chinese national culture should be integrated for in-depth research to optimize teaching results. Institutes should endow Orff's methods with new ideas and connotations with Chinese characteristics, and promote development of music education in China. (Li Zhengping, 2011)

2.4.1 The Analysis of Orff's Music Theory

This study explores Orff's theory music teaching method, analyze the strength and weakness of its application in China based on the status quo of Chinese instrumental music education, as well as the feasibility of such application. The study involves five major parts:

1) Application of language in Erhu teaching. Language plays an important role in the formation of national cultures and is indispensable from music cultures. Rhythm is the basis for connecting music, dance, language and other elements. By reciting nursery rhymes, poems, idioms and proverbs from different places, a "rhythm teaching" mode could be established to make students more familiar with and understand local cultures, which is conducive for students to present local repertoire with emotions in Erhu performance.

2) Application of movements and dances in Erhu teaching. Originally, music is not simply about sounds, but is combined with movements, dance, drama and so on. With body rhythms, students can actively participate in music and establish a "momentum" learning mode, that is, in the process of singing, students can cooperate with their voices with body movements. Coordination of dance movements allows them to be more engaged in Erhu performance.

3) Influence of Erhu teaching on national culture. Education of music must start from the ethnic ones. Erhu teaching should enhance students' senses of identity and belongingness to ethnic cultures and encourage them to build small folk bands and so on. Primary and secondary schools in different regions can integrate local representative music into music courses as a way to promote inheritance of local cultures. It is necessary to encourage students to improve their basic playing skills and keep trying new Erhu works.

4) Application of improvisation and free courses in Erhu teaching. Transition of traditional mode of music class allows students to freely compose music works and assemble band, which helps them to cultivate creative thinking and imagination abilities, and helps them express their feelings and strengthen their enthusiasm for learning Erhu.

5) Application of fine arts in Erhu teaching. Music is an auditory art, while fine art is visual art; association, imagination and expression through music allows people to depict pictures they see. It is the difference of individuals' understanding of music works and expression of emotion that makes the painting content and form diverse and colorful.

2.4.2 The Enlightenment of Orff's Music Theory

1) Orff's music teaching mode is supposed to provide students with relatively free space for them to improvise. Music education mode in China, on the contrary, is short of learners' enthusiasm and participation. Institutes need to reform stereotypical modes music teaching, prioritize "original nature music", and encourage students to participate in teaching

process. Music education should present a teaching mode with "form", include characteristics of national music into a comprehensive teaching platform, to keep pace with the time and to adapt with the development of modern education. Not only learning the basic knowledge of music, students should also cultivate their abilities of aesthetic appreciation and music expression of music, thus shaping personalities of sound.

2) The mode of music education in China is relatively simple, and the content of teaching has great limitations. It ignores students' emotional expression and experience of music, as well as their subjectivity in music learning and their lack of initiative and creativity. Later, great progress was made in music education, and instrumental skills were gradually enriched. However, students mainly imitate the existing music art works and lack the spirit of active exploration. Teachers, on the other hand, pursue teaching result only and treat students sternly, which induces to a higher pressure on students. Due to the great difference in music talent among individual students, music potential of each student is stimulated in teaching, so that they can participate in the exploration of music learning more in the learning process. Through teachers' various teaching ideas, students can make greater progress during the four years of university study. Orff's teaching system provides us with a lot of enlightenment.

3. The Teachers' Feedback and Students' Satisfaction of new Erhu Teaching Method

3.1 The Feedback of Teachers on Major Issues

Table 2 The Feedback of Teachers on Major Issues

Questions	Answers	Percentage of uniformity
Erhu skills	Left hand :vibrato, holding shift, tremolo, glissando, overtone and there are six common tones .Right hand : slow-speed bow, medium-speed bow, fast-speed bow, Martellato-bow, tremolo-bow, Fling-bow and double-string bow.	100%
Problems in Erhu teaching	Fast-speed bow is difficult to teach) .Two teachers(Slow-speed bow is difficult to teach) .One teacher(66%

Teaching materials	There is no unified textbook) .One teacher(The textbook is not classified) .Two teachers(66%
Support the reform of teaching method or not	Support) Three teachers(100%
The opinion of multimedia data to assist teachers' instruction	It is an effective way) .Three teachers(100%
How to implement the digital teaching mode.	Famous Erhu instructors record lessons) .One teacher(Record Erhu course separately according to different skills) .One teacher(Sharing resources of high-quality Erhu course) .One teacher(33%

Interviewee:

- 1) Luo Zhang Han, Guizhou Normal University;
- 2) Yu Liang Liang, Guizhou Educational University;
- 3) Zhang Hui Fen, Tong Ren University.

The brief introduction of selected interview pictures as follows:

Teacher interviewee





Name: Yu Liang Liang

Time: 20 March, 2019

Place: Office room of Yu Liang Liang, Guizhou Educational university

Content: The emphasis and difficulty of erhu teaching

Teacher interviewee



Name: Zhang Hui Fen

Time: 26 March, 2019

Place: Home of Zhang Hui Fen, Tong Ren University (video)

Content: Innovative approaches to erhu teaching

Teacher interviewee



Name: Luo Zhang Han

Time: 29 March, 2019

Place: The scene of the second erhu competition in Guizhou province(video)

Content: Erhu performance appreciation and discussion

3.2 The Satisfaction of Students on Major Issues

Table 3 The Satisfaction of Students on Major Issues

Questions	Answers	Percentage of uniformity
Have you ever heard Erhu digital teaching method?	Yes).One student(No).eight students(88%
The advantages and disadvantages of Erhu digital teaching	(More effective).One student (Convenient).One student (Obtain more data).Three student (Available to study anytime and anywhere).One student (Improve teaching quality) .Three student (Hard to implement).Three student	30%

Table 3 : Continued

Questions	Answers	Percentage of uniformity
Suggestion for Erhu digital teaching	Making Erhu digital course separately) .Four student(Create actual practice condition) .One student(Promote students to become more positive) .One student(Improve the flexibility of data) .One student(Special analysis to different problems) .One student(Cooperation with two-line teaching) .One student(44 %

Interviewee:

- 1) Zhao Yuan Xiang, Xing Yi Normal University for Nationalities;
- 2) Zhang Tian, Xing Yi Normal University for Nationalities;
- 3) Wang Ji Lan, Xing Yi Normal University for Nationalities;
- 4) Liu Yu Xiao, Xing Yi Normal University for Nationalities;
- 5) Cen Zhao, Xing Yi Normal University for Nationalities;
- 6) Luo Yu Hui, Xing Yi Normal University for Nationalities;
- 7) Ren Kun, Xing Yi Normal University for Nationalities;
- 8) Zu Da Yong, Xing Yi Normal University for Nationalities;

The brief introduction of selected interview pictures as follows:



Student interviewee



Name: Zhao Yuan Xiang

Time: 6 January, 2019

Place: Training room, Xing Yi Normal University for Nationalities

Content: Investigation on learning difficulties and new teaching methods of Erhu

Student interviewee



Name: Zhang Tian

Time: 6 January, 2019

Place: Training room, Xing Yi Normal University for Nationalities

Content: Investigation on learning difficulties and new teaching methods of Erhu

Student interviewee



Name: Wang Ji Lan

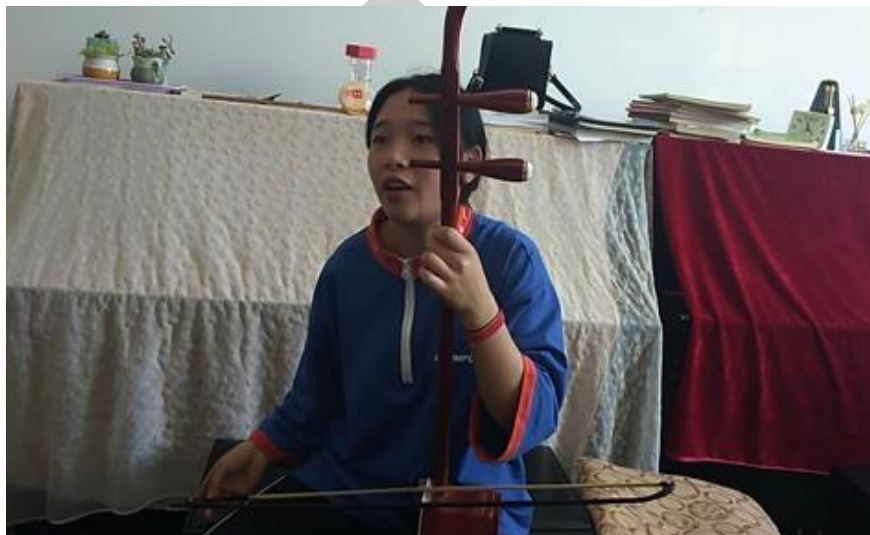
Time: 6 January, 2019

Place: Training room, Xing Yi Normal University for Nationalities

Content: Investigation on learning difficulties and new teaching methods of Erhu

พหุบัณฑิต ชีเว

Student interviewee



Name: Liu Yu Xiao

Time: 6 January, 2019

Place: Training room, Xing Yi Normal University for Nationalities

Content: Investigation on learning difficulties and new teaching methods of Erhu

Student interviewee



Name: Cen Zhao

Time: 6 January, 2019

Place: Training room, Xing Yi Normal University for Nationalities

Content: Investigation on learning difficulties and new teaching methods of Erhu

4. Summary

4.1 Basic Skills of Erhu Performance and Principles of Textbooks Compilation

Music education, literally, consists of two elements: music and education. Music is a type of art that stimulates various emotional reactions and emotional experiences in human auditory organs. Education is a kind of purposeful, organized, planned, systematic transfer of knowledge, also including technical norms and practical activities to improve learners' overall quality. It has a broad and narrow sense, so does our music education.

Broad sense: as an important part of art education, ordinary music could cultivate learners' sentiments, improve their aesthetic appreciation skills, enrich their emotional experience, train their thinking abilities and build their knowledge bases. In short, the primary task of art education is to cultivate talented students with all-round proficiencies under the goal of establishing good morality.

Narrow sense: professional music education is a variety of systematic and practical education for the training of musicians or professional music talents, and its classification is fine. This is the case with major professional art schools.

For the professional Erhu education, educators need to make a lot of efforts to compile summaries of the playing skills and textbooks of Erhu performance classification.

4.1.1 The techniques of left hand contains vibrato, holding shift, tremolo, glissando, overtone and there are six common tones: (1, 5) string for D tone, (bass 5, 2) string for G tone, (bass 6, 3) string for F tone, (2, 6) string for C tone, (bass 4, 1) string for A tone, (bass 3, bass 7) string for Flat B tone.

4.1.2 Teaching materials of Erhu left hand skills can be divided into the following categories:

- 1) Posture of Erhu handling;
- 2) Practice of pressure of string for finger one, two, three and four;

- 3) Practice of four fingers' dexterity;
- 4) Scale arpeggios exercise of six keys in the first, second and third position;
- 5) Fast and slow holding shift of six keys in the first, second and third position;
- 6) Practice of grace note, includes vibrato, tremolo, glissando and overtone;
- 7) Comprehensive practice of left hand.

4.1.3 Right hand coordination contains slow-speed bow, medium-speed bow, fast-speed bow, Martellato-bow, tremolo-bow, Fling-bow and double-string bow.

Teaching materials of Erhu right hand skills can be divided into the following categories:

- 1) Etude of slow-speed bow;
- 2) Etude of medium-speed bow;
- 3) Etude of fast-speed bow;
- 4) Etude of mixing-speed bow;
- 5) Etude of bow techniques, includes Martellato-bow, tremolo-bow, Fling-bow and double-string bow;
- 6) Comprehensive practice of right hand.

4.1.4 Players should achieve a state of flexible transition and natural relaxation of two hands. Teaching materials of Erhu two hands cooperation can be divided into the following categories:

- 1) Slow-speed bow and single note practice;
- 2) Slow-speed bow and several notes practice;
- 3) Medium-speed bow and single note practice;
- 4) Medium-speed bow and several notes practice;
- 5) Fast-speed bow and several notes practice;
- 6) Separated bow and handle shift;
- 7) Legato and slow or fast handle shift;
- 8) Alternation of inner and outer strings and fast handle shift.

4.1.5 Principles of Textbook Compilation

- 1) According to techniques of left hand, right hand, and dual hands, make the content of etudes and skills match each other;

2) Highlight the skills of individual practice and comprehensive practice, apply theories to practices;

3) From the simple to the complex, apply the principles step by step;

4) Conform layout of teaching material layout to students' aesthetic demands;

5) After compiling textbooks to make corresponding videos, release these videos on the Internet for the student to watch.

4.2 Erhu Data Teaching System Model

I have been engaged in education of Erhu performance for many years and have made some attempts and explorations. This study takes the digital "polymorphic" teaching mode as an example to analyze. Especially, digitalization of music teaching can be designed to put pieces of teaching, performance, papers, lectures and analysis into a database and generate a professional system. Students' learning process can be recorded and analyzed with the help of high technology in the following steps:

4.2.1 Built an Erhu database containing the following resources:

1) Online expert skills courses;

2) Online repertoire demonstrations courses;

3) Online concert and lecture appreciation courses;

4) Online basic knowledge courses;

5) Online data of three-dimensional movement analysis of Erhu skills.

4.2.2 Data Tracking

1) Concept of Tracking: data tracking is a type of comprehensive collection of students' learning information, including accurate data of students' each piece of learning process. These data are required to be authentic and valuable so as to realize the digitization operation of students' entire learning behaviors.

2) Technology of Tracking: data tracking is a very complex process, which needs to be fully applied to many new technologies, such as cloud computing technology, video monitoring technology, intelligent recording and broadcasting technology, internet of things perception technology, wearable device technology, emotion recognition technology, search and analysis technology, online learning and management platform technology and so on. At present,

each of the above technologies can possibly be used to obtain a variety of accurate tracking data. However, it needs more attention and involvement of scientists to achieve the desirable effects.

3) Procedure of Tracking: students' learning and practices are the targets of tracking. For example, the tracking of students' theoretical learning includes many details, such as the time and content they browse online. At the same time, data tracking should be operated in a certain period and each step in the learning process should be quantified as reliable and accurate data, which paves the foundation for data analysis.

4.2.3 Data Analysis

On the basis of the above data collection, high and new technology will be used to integrate isolated data multidimensionally for the following, comprehensive and professional visualization and intelligent analysis. Data analysis could reflect students' problems in learning and exercises, so that students could have an objective and clear understanding of their own performance skills. For specific problems, the database will provide targeted dynamic curriculum settings. For example, the database will provide course resources that match a student's personalized problems. This includes information about skill courses to attend, materials to read, concerts or performances to watch, and targeted programs to practice.

4.2.4 Evaluation

In the evaluation stage, the database will timely assess the students' completion status of online courses and then give relevant guidance. Certainly, suggestions based on curriculum planning will be determined in the database. For example, the database will present completed and unfinished content of courses, analyze reasons for unfinished course and provide relevant solutions. At the same time, it is necessary to set a schedule for continuous data assessment. Educators can adjust the next cycle of teaching progress and arrangements to achieve more humanized and intelligent teaching via the evaluation results.

4.2.5 Course Prediction

The database will predict the course progress through intelligent analysis of students' specific status. All students will get a detailed plan of their future study progress and they can adjust course schedules at any time according to pre-set plans and their actual progressiveness. It will serve as an effective way to achieve their desired goals. For example, the course plan includes the time that certain skills or repertoire should be practiced.

4.3 The Application of Innovative Teaching Model in Actual Erhu Class.

The innovative model described in this research was applied to three universities in Guizhou Province, respectively, Guizhou Normal University (Luo Zhang Han as the instructor), Guizhou Educational University (Yu Liang Liang as the instructor) and Tong Ren University (Zhang Hui Fen as the instructor).

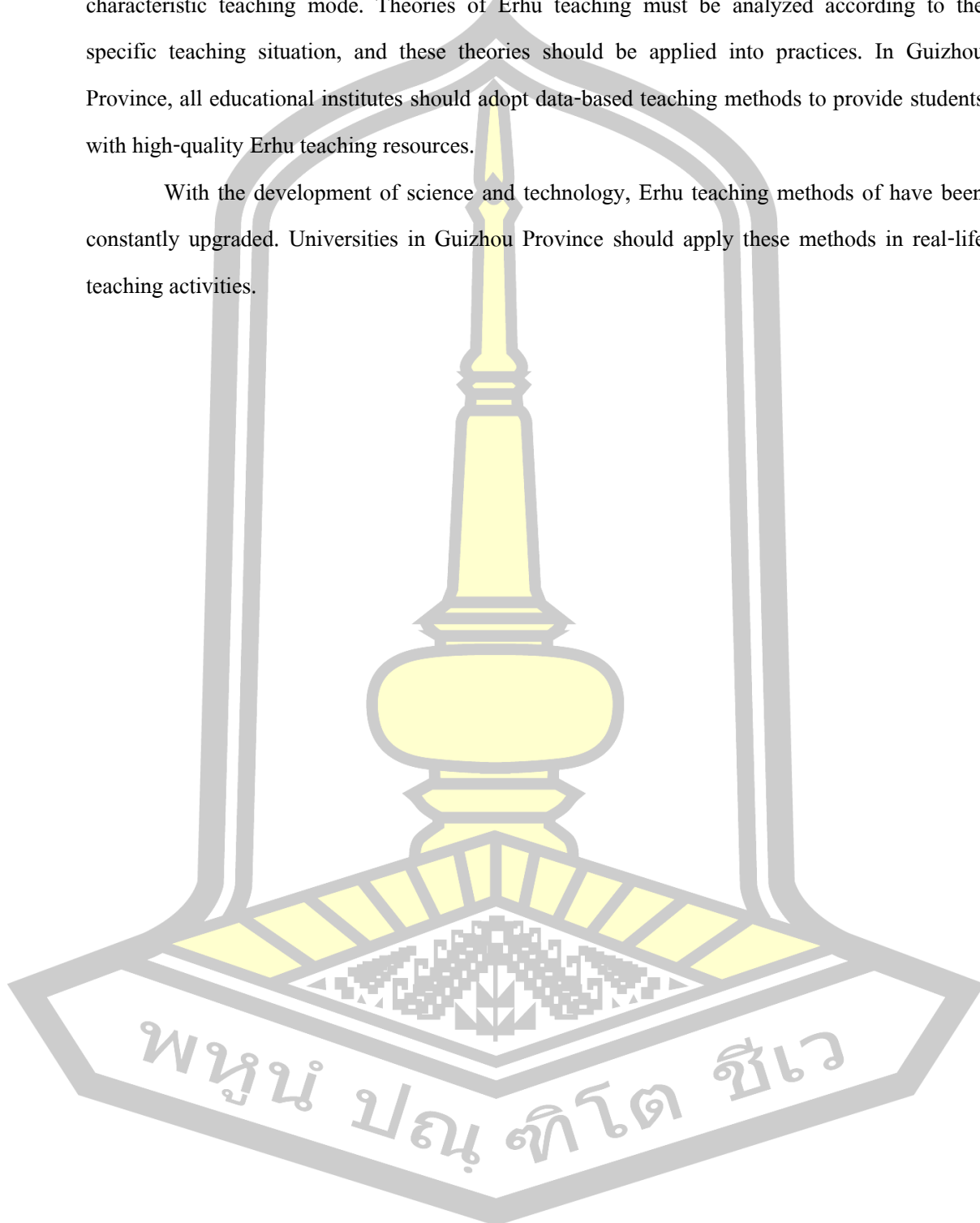
These three universities are very representative in Guizhou and their teachers are highly qualified, which served as a good basis for the implementation. Guizhou university has similar characteristics in terms of teachers and students, so this teaching model can be used for reference by other schools. If desired outcomes could be produced in these three institutes, then more universities Guizhou Province, such as Guizhou University, Guizhou University for Nationalities, Xing Yi Normal University for Nationalities, Zun Yi Normal University, Qian Nan Normal University for Nationalities, Gui Yang University, An Shun University, Liu Pan Shui Normal University and Kai Li University could apply this approach as well. Theories of Erhu teaching plays a guiding role in the practices. Guizhou province is located in the southwest of China. It is relatively backward in economy and culture due to the geographical limitations and historical factors. Although higher education has developed, it still lags behind other provinces.

In Guizhou province, professional Erhu education must proceed from the actual conditions of education to cultivate talents and finally establish its own characteristics of music development model. Many problems are revealed after in-depth research and analysis of Erhu instructors, training programs, teaching plans, teaching content and other aspects. Some of them are universal, while some are distinctive in certain institutes. For example, a common problem is that the staff team of most colleges and universities in Guizhou are young teachers, and the proportion of teachers with senior professional titles and advanced degrees is small. Teachers have always been regarded as the key factors to measure the status of university, and also the key points to cultivate talents. For another example, some universities have fixed Erhu teaching materials, and others do not. Some universities offer abundant choices of Erhu courses, while others offer few. (Hao Yijie, 2017)

Concerning the current situation and characteristics of Erhu major, educators should propose solutions to cope with common problems in the major setting, so as to contribute to the development of Erhu major in colleges and universities in Guizhou province, make Erhu teaching

adaptable with the new situation of education reform, and construct a reasonable and characteristic teaching mode. Theories of Erhu teaching must be analyzed according to the specific teaching situation, and these theories should be applied into practices. In Guizhou Province, all educational institutes should adopt data-based teaching methods to provide students with high-quality Erhu teaching resources.

With the development of science and technology, Erhu teaching methods of have been constantly upgraded. Universities in Guizhou Province should apply these methods in real-life teaching activities.



CHAPTER V

CONCLUSION AND DISCUSSION

1. Conclusion

1.1 The selected Erhu primary techniques

Erhu has a long historical standing in China. It has a lot of playing techniques and carries forward a unique music culture of the state with a distinctive image. Despite the continuous development of human history and progress of human civilization, traditional music has been inherited in today's society with its tenacious vitality and diverse characteristics. Underneath the superficial phenomenon, there must be the inherent essence of traditional music. This is what we should ponder and explore. Left hand coordination contains a series of techniques such as the vibrato, holding shift, tremolo, glissando and overtone. Right hand coordination includes techniques like slow speed bow, medium-speed bow, fast-speed bow, Martellato-bow, tremolo-bow, Fling-bow and double-string bow. Players should achieve a state of flexible transition and natural relaxation of their two hands.

1.2 The new pattern of Erhu teaching

I made a deep analysis of problems about Erhu teaching process and also made some explorations of new teaching method. Then I got desirable feedback after conducting questionnaire surveys and applying the above-mentioned teaching method into real classroom practices. Teachers feel that this kind of teaching method is quite innovative, and they want to carry on the application teaching on this foundation. Students are interested in this polymorphic approach and they have also gained a lot of knowledge through online learning and analysis. The specific advantages are as follows:

1.2.1 The "Two-line" Teaching Method

The "two-line" teaching method will solve the problem of insufficient local college instructors through the construction of network resource database, and enable students to have more opportunities to contact famous educators and performers of music instruments. In the process of instrumental music learning and practice, students can enrich and improve their

theoretical background, exercise their performance skills and shape their performance styles only when they are good at gambling. After all, every excellent instrumental player is the product of the cultivation and instruction of many instructors, while the two-line teaching can provide a lot of data and resources.

1.2.2 The Three-dimensional Movement Analysis

The three-dimensional movement analysis of skills will eliminate the information asymmetry between teachers and students in class through visual performance skills analysis. Details of each bone movement required in the performance of different skills are clearly presented, so as to achieve the "fine understanding of muscle and bone" in the movement, and finally achieve the objective and intuitive visual effects. In addition, if many experts produce three-dimensional analysis of technical movements in different instrumental performances and apply it to teaching classes, some teachers' serious mistakes of personal empiricism will be avoided, thus standardizing teaching content. The research on the combination of instrumental performance with dynamics will help us to provide corresponding data and construct a theoretical basis for performance and make performance theories more accurate and convincing.

1.2.3 Audio-visual Data Feedback

Audio-visual data feedback teaching method can solve the problem of rigid teaching scheme through classroom participation of instructors and students. For teachers, it is helpful to understand students' learning situation accurately and timely and control the teaching process. For students, it is beneficial to learn about their performance levels and continuously improve their performance skills through self-evaluation and peer evaluation. Besides, instructors and students could be aware of their problems timely through data feedback and conduct dynamic adjustment and improvement in the process of teaching and learning.

1.2.4 Orff's Music Teaching Method

Orff's music teaching method has great enlightenment to Erhu teaching. It provides a reference for improvement of Chinese system of Erhu teaching. A series of teaching aspects including teaching designs, teaching concepts and teaching methods can be integrated with digital polymorphic teaching mode to promote the development of instrumental music education in colleges and universities.

1.3 The Satisfaction and Implementation of New Teaching Pattern

Implementation of new teaching pattern of Erhu in China. Modern teaching needs to make full use of science, technology and data that are continuous innovated and explored, thus increasing the number of teaching channels and stimulate students' enthusiasm for learning. Students, on the other hand, should make efforts to improve their learning efficiency and to adapt with the new situation of teaching reform and requirements of development. Through the research of this subject, the unidirectional transmission of knowledge from "teacher to student" will be transformed into multiple directional transmission from "resources to student". Educators are supposed to maximize the utilization efficiency of high-quality teaching resources and medias to cultivate students' active cognition, observation, analysis and problem-solving skills, and ultimately establish a learning and thinking mode of "discovery-exploration-creation".

Institutes should fully exploit the potential of science and technology to promote music teaching, encourage personalized music education, balance the high-quality resources of music education, improve the basic mode of music education and update the evaluation system. Professional music teaching reform should be constituted to adapt to the development of modern education. Although the traditional music teaching model has its advantages, it is necessary to carry out teaching innovation and reform on this basis to accelerate development of music education. (Guo-ping, 2007)

2. Implementation of Erhu Education Reform in China

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2.1 Textbooks Compilation

It is important to improve the quality of textbooks compilation basic skills of Erhu performance.

Music education, literally, consists of two elements: music and education. Music is a type of art that stimulates various emotional reactions and emotional experiences in human auditory organs. Education is a kind of purposeful, organized, planned, systematic transfer of knowledge, also including technical norms and practical activities to improve learners' overall quality. It has a broad and narrow sense, so does our music education.

Broad sense: as an important part of art education, ordinary music could cultivate learners' sentiments, improve their aesthetic appreciation skills, enrich their emotional experience, train their thinking abilities and build their knowledge bases. In short, the primary task of art education is to cultivate talented students with all-round proficiencies under the goal of establishing good morality.

Narrow sense: professional music education is a variety of systematic and practical education for the training of musicians or professional music talents, and its classification is fine. This is the case with major professional art schools.

For the professional Erhu education, educators need to make a lot of efforts to compile summaries of the playing skills and textbooks of Erhu performance classification.

2.1.1 The Techniques of Left Hand

The techniques of left hand contains vibrato, holding shift, tremolo, glissando, overtone and there are six common tones: (1, 5) string for D tone, (bass 5, 2) string for G tone, (bass 6, 3) string for F tone, (2, 6) string for C tone, (bass 4, 1) string for A tone, (bass 3, bass 7) string for Flat B tone.

2.1.2 Teaching Materials of Left Hand

Teaching materials of Erhu left hand skills can be divided into the following categories:

- 1) Posture of Erhu handling;
- 2) Practice of pressure of string for finger one, two, three and four;
- 3) Practice of four fingers' dexterity;
- 4) Scale arpeggios exercise of six keys in the first, second and third position;
- 5) Fast and slow holding shift of six keys in the first, second and third position;
- 6) Practice of grace note, includes vibrato, tremolo, glissando and overtone;
- 7) Comprehensive practice of left hand.

2.1.3 Right Hand Coordination

Right hand coordination contains slow-speed bow, medium-speed bow, fast-speed bow, Martellato-bow, tremolo-bow, Fling-bow and double-string bow.

Teaching materials of Erhu right hand skills can be divided into the following categories:

- 1) Etude of slow-speed bow;
- 2) Etude of medium-speed bow;
- 3) Etude of fast-speed bow;
- 4) Etude of mixing-speed bow;
- 5) Etude of bow techniques, includes Martellato-bow, tremolo-bow, Fling-bow and double-string bow;
- 6) Comprehensive practice of right hand.

2.1.4 Transition and Relaxation of Two Hands

Players should achieve a state of flexible transition and natural relaxation of two hands. Teaching materials of Erhu two hands cooperation can be divided into the following categories:

- 1) Slow-speed bow and single note practice;
- 2) Slow-speed bow and several notes practice;
- 3) Medium-speed bow and single note practice;

- 4) Medium-speed bow and several notes practice;
- 5) Fast-speed bow and several notes practice;
- 6) Separated bow and handle shift;
- 7) Legato and slow or fast handle shift;
- 8) Alternation of inner and outer strings and fast handle shift.

2.1.5 Principles of Textbook Compilation

- 1) According to techniques of left hand, right hand, and dual hands, make the content of etudes and skills match each other;
- 2) Highlight the skills of individual practice and comprehensive practice, apply theories to practices;
- 3) From the simple to the complex, apply the principles step by step;
- 4) Conform layout of teaching material layout to students' aesthetic demands;
- 5) After compiling textbooks to make corresponding videos, release these videos on the Internet for the student to watch.

2.2 Erhu Data Teaching System Model

I have been engaged in education of Erhu performance for many years and have made some attempts and explorations. This study takes the digital "polymorphic" teaching mode as an example to analyze. Especially, digitalization of music teaching can be designed to put pieces of teaching, performance, papers, lectures and analysis into a database and generate a professional system. Students' learning process can be recorded and analyzed with the help of high technology in the following steps:

2.2.1 Erhu Database

- 1) Online expert skills courses;
- 2) Online repertoire demonstrations courses;
- 3) Online concert and lecture appreciation courses;
- 4) Online basic knowledge courses;
- 5) Online data of three-dimensional movement analysis of Erhu skills.

2.2.2 Data Tracking

1) Concept of Tracking: data tracking is a type of comprehensive collection of students' learning information, including accurate data of students' each piece of learning process. These data are required to be authentic and valuable so as to realize the digitization operation of students' entire learning behaviors.

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On the basis of the above data collection, high and new technology will be used to integrate isolated data, comprehensive and professional visualization and intelligent analysis. Data analysis could reflect students' problems in learning and exercises, so that students could have an objective and clear understanding of their own performance skills. For specific problems, the database will provide targeted dynamic curriculum settings. For example, the database will provide course resources that match a student's personalized problems. This includes information about skill courses to attend, materials to read, concerts or performances to watch, and targeted programs to practice.

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and unfinished content of courses, analyze reasons for unfinished course and provide relevant solutions. At the same time, it is necessary to set a schedule for continuous data assessment. Educators can adjust the next cycle of teaching progress and arrangements to achieve more humanized and intelligent teaching via the evaluation results.

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These three universities are very representative in Guizhou and their teachers are highly qualified, which served as a good basis for the implementation. Guizhou university has similar characteristics in terms of teachers and students, so this teaching model can be used for reference by other schools. If desired outcomes could be produced in these three institutes, then more universities Guizhou Province, such as Guizhou University, Guizhou University for Nationalities, Xing Yi Normal University for Nationalities, Zun Yi Normal University, Qian Nan Normal University for Nationalities, Gui Yang University, An Shun University, Liu Pan Shui Normal University and Kai Li University could apply this approach as well.

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In Guizhou province, professional Erhu education must proceed from the actual conditions of education to cultivate talents and finally establish its own characteristics of music development model.

Many problems are revealed after in-depth research and analysis of Erhu instructors, training programs, teaching plans, teaching content and other aspects. Some of them are universal, while some are distinctive in certain institutes. For example, a common problem is that the staff team of most colleges and universities in Guizhou are young teachers, and the proportion of teachers with senior professional titles and advanced degrees is small. Teachers have always been regarded as the key factors to measure the status of university, and also the key points to cultivate talents. For another example, some universities have fixed Erhu teaching materials, and others do not. Some universities offer abundant choices of Erhu courses, while others offer few.

Concerning the current situation and characteristics of Erhu major, educators should propose solutions to cope with common problems in the major setting, so as to contribute to the development of Erhu major in colleges and universities in Guizhou province, make Erhu teaching adaptable with the new situation of education reform, and construct a reasonable and characteristic teaching mode.

Theories of Erhu teaching must be analyzed according to the specific teaching situation, and these theories should be applied into practices. In Guizhou Province, all educational institutes should adopt data-based teaching methods to provide students with high-quality Erhu teaching resources.

With the development of science and technology, Erhu teaching methods of have been constantly upgraded. Universities in Guizhou Province should apply these methods in real-life teaching activities.

2.4 Some Suggestions for Instructors

Instructors should improve their teaching from the following aspects:

2.4.1 The Teaching of Basic Techniques

Most of the students majoring in acting have a good foundation of performance skills and have mastered relevant techniques. Therefore, instructors always highlight exercise of performance works, while neglecting training of basic techniques. As a result, most students often make mistakes or feel unhappy when playing difficult works. In view of the deficiency of students' academic achievements, instructors should arrange students' academic work to help students consolidate and improve their academic background, thus achieving better teaching effects with higher time-efficiency. At the same time, students should strengthen their awareness

and training of basic techniques, and practice techniques of bow and string in a daily basis. The online expert skills courses could provide a good platform for students to learn basic skills.

2.4.2 Teaching of Emotional Expression

Some students perform well in playing techniques, but lack emotional expression of the works. In these cases, instructors need to put some time to analyze and interpret these works to students. The expression of emotion, which combines imagination, association, spirit and psychology, is the internal motive of performers' expression work. Notes in the performance are the external expression of the inner emotion. Only on the basis of full understanding and interpretation of the original works can the unique emotional characteristics of the works be presented. Finally, students should reach a state of "expressing emotions with sound, leading with emotion, and combining sound and emotion" during their performances. Online repertoire demonstrations course will provide a good platform for students to learn Erhu works.

2.4.3 Participation of Arts Activities

Erhu performance is a common discipline of art. In actual performances, many performers are extremely nervous or unable to perform as normal, which usually results from insufficient stage training. Therefore, music education should integrate knowledge imparting and real-life exercises. Instructors should encourage students to participate in university and social arts activities. At the same time, various kinds of teaching concerts should be organized regularly to provide students with opportunities to display what they have learned, which could not only give them stage experience, but also improve their professional proficiency, build a good atmosphere of art learning and enhance the interaction between instructors and students. Another enlightenment brought out by online concert and lecture appreciation courses is that students can record their performances by themselves to find out their shortcomings through watching those videos.

2.4.4 Music and Culture

Music is an important branch of culture. It carries and reproduces the aesthetic culture of truth, goodness and beauty through notes. Therefore, music and culture are closely related. Musical works reflect distinctive features of cultures and times. If performers are good at performance but lack of cultural literacy, they can barely express the cultural connotation, thoughts and emotions of works vividly. Erhu performance is not only the process of players'

second creation, but also the re-interpretation and construction of these works based on their cultural and artistic awareness. Hence instructors should strengthen students' understanding and feeling of the connotation of works. In this way, the online basic knowledge courses serve as a good platform for students to acquire a better understanding of the ideological, political, social and cultural features of certain historical periods in which the works were created.

2.5 Some Suggestions for Students

Students should keep to the following innovations:

2.5.1 Basic Skills Training

Most students majoring in Erhu performance are skilled of many playing techniques. Therefore, in the process of teaching, more attention is often paid to the accumulation of music works, while training of basic skills is always neglected. As a result, most students often make mistakes or feel powerless when playing difficult works.

To cope with this problem, instructors should put more time on training students' basic performance skills. In view of the shortcomings of students' performance, instructors could arrange targeted etudes to consolidate and improve students' performance basis. At the same time, students should be aware of the importance of basic skills training, and exercise bow and string techniques frequently. Bow-moving exercises include: slow longbow exercise, bow-splitting and bow-connecting bow-string changing exercise, bow-splitting exercise, bow-tip division exercise, fast bow-moving exercise, etc. String touching exercises include scale arpeggio exercises, quick fingering exercises, high fingering exercises, handle changing exercises, string rubbing exercises, trill exercises, slide exercises.

2.5.2 Reasonable Schedules to Practice

In colleges and universities, instructors usually spend time explaining playing skills and music works, but seldom set requirements on students' practice schedule. Consequently, a lot of students practice harder but do not make greater progress. The author believes that a scientific practice schedule should be constructed based on the optimal practice period and duration. A study shows that the human body's functional state is periodic. So in terms of the practice period, generally, periods from 9:00 a.m. to 11:00 a.m., 3:00 p.m. to 4:00 p.m., and 8:00 p.m. to 9:00 p.m. are the flourishing time of human body and spirit, as well as the best time to practice.

In addition, an experiment was conducted to test brain response of stimulus by measuring brain waves. An amplitude rise indicates that the brain has a positive response and the practice produces good effects; while conversely, it indicates that the brain has a negative reaction and the effects of practice are not desired. During the experiment, players' amplitude increases 20 minutes before the performance, becomes smooth 20 to 30 minutes later, and decreases 30 minutes later. If the band continues to play after a break of five to ten minutes, their amplitude would continue to increase over the first twenty minutes. This result reveals the optimal rhythm of practice, that is, practicing continuously for 30 minutes at a time, then resting for 5 to 10 minutes and continuing to practice after that. Only follow a scientific practice schedule can students generate efficient outcomes.

2.5.3 Reasonable Practice Procedures

Many Erhu players are eager to achieve success in the process of practice. They are not organized and spend much time in practice, only to get low efficiency. In terms of practice procedures, the author believes that the following principles should be followed in the process of practice:

1) Basic skills should be followed by the etude. Practice of basic skills is the basic link. Adhering to the practice of basic skills will make performers' skills constantly strengthened and improved, and also enable performers to perform with ease.

2) Performers should play slowly first and then fast. Slowing down is the best way to solve technical difficulties. Its purpose is to ensure that the brain could issue note playing instructions to the muscles correctly, and through repeated practice to be fixed in their mind. Students should build a solid foundation of the performance and speed up gradually until they reach the original speed.

3) Students should perform segments first, then the whole song. Lack of key points and mechanically repeated practice of the whole song will make brains slow and efficiency poor. Students who are not good at playing single segments should practice alone to solve the problems, and then connect with the original song in a natural and accurate performance state.

2.5.4 Profound Analysis of Music Works

At the present stage, most students perform well in technical aspects, but lack of emotional expression of music works. To deal with this weakness, students should pay attention

to the theoretical analysis of the works, including analysis of creation time, creation background, creation motivation, creation technique, tonality, music structure, melody progression, music connotation and so on.

Expression of emotion generally involves many factors such as imagination, association, spirit and psychology, which is the internal motivation for performers to express their works, while notes in the performance are external manifestations of internal emotions. Only on the basis of full understanding and interpretation of the original song can players vividly present the unique emotional characteristics of the works endowed by the players themselves, and finally achieve the performance state of "expressing emotions with sound, leading with emotion, and combining sound and emotion".

2.5.5 Cultural Accomplishment

Culture is the creation of human spiritual activities, and music is an important branch of human culture which carries and conveys the aesthetic culture of truth, goodness and beauty through notes. Therefore, music is closely related to culture, and there is a relationship between part and whole. All music works profoundly reflect the distinctive characteristics of The Times and culture. If the performers are poor in cultural literacy and artistic implication, even if they have a higher ability of performance, they cannot effectively express the cultural connotation, ideas and emotions of the work. Erhu performance is not only the process of players' second creation, but also the re-interpretation and construction of their works based on their own cultural and artistic accomplishment.

In my opinion, students should deepen their understanding of the ideological, political, social and cultural features of the historical periods in which the works were created. Also, students should improve their cultural accomplishment and strengthen their understanding and feeling of the connotation of music works.

Since players have different life experience, spiritual characters, music proficiency, personality temperaments and aesthetic tastes, after many times of practice, they will acquire different temperaments and styles of performance. This is often referred to as "re-creation". In addition, it is necessary to mention the expression of "love" in live performance. Live performance is the final part of music "re-creation", which is the crystallization of repeated practice and experience. Of course, to grasp the investment of emotion "degree", players need to

set aside part of the energy to control intonation, rhythm and emotion of each paragraph to ensure normal play of their skills.

2.5.6 The Comprehensive Application of Performance Techniques

The sound includes melody, rhythm, strength, speed, timbre and other factors is the external form of expression. Emotion includes imagination, association, spirit, psychology and other factors, is the internal driving force of performance. The combination of emotion and sound is closely connected by the performers' body movements. In short, what is gained from emotion is what should be done by the hand. These movements include the left hand holding the harp and the right hand holding the bow.

Holding the handle in the left hand requires string rubbing, handle changing, trill, glide, overtone and other skills. Among them, the biggest influence on the sound change is the kneading of strings, which makes music performance more vivid, beautiful and full of singing quality and appeal. It fully expresses the change of people's ideological connotation and emotion. Kneading can be divided into rolling kneading, sliding kneading, pressing kneading, and other playing methods. Meanwhile, the process of kneading the strings can be carried out in a manner of gradually accelerating, slowing down, gradually strengthening, gradually weakening, late kneading the strings or continuously kneading the strings. Kneading involves strong controllability and freedom, thus it is critical in sound adjustment. In actual performances, the performance of beautiful, smooth, rich in melody needs rolling; playing deep, grief, anger, despair of the music needs pressure kneading, especially in the music pause in which the bow stops but kneading does not, showing a profound artistic conception of "sound broken but not broken"; playing joy, humor, humor of local flavor music and a number of notes requires the technique of sliding to express the inner feelings. However, these three types of string rubbing do not exist in isolation. In the actual performance of music, two or even a variety of chord rubbing methods are often combined together, and some notes are kept in a straight state without chord rubbing. The whole music is well organized, with ups and downs, which is infectious. Generally speaking, when notes become stronger or the melody goes up, the chord rubbing strength is increased and the chord rubbing speed is slightly accelerated on a stable basis. When notes become weaker or the melody goes down, the chord rubbing strength decreases and the chord rubbing speed slows down slightly on a stable basis. The state of string kneading fully conforms to the emotion

expressed by the music. Voice are accompanied by subjective feelings of change, so the emotion of the strong, weak, fast, slow and other changes of the chord also play a great role in adjustment. Techniques of the right hand holding the bow include slow long bow, medium speed bow, fast bow, ton bow, flutter bow, jump bow, double string movement bow and so on. Movement and changes of the bow can make a rich variety of sounds.

2.5.7 Integration of Sound and Emotion

The fundamental reason why the sound structure can express specific emotions is that there is an extremely important similarity between the two, that is, both are demonstrated and developed in time, with rich changes in speed, strength and tone, and extremely dynamic process. This crucial similarity is the bridge between the two. When the left hand kneads the strings and the right hand moves the bow simultaneously, the sound contrast will be further strengthened and the emotional changes will be further expressed.

Generally speaking, in the performance of the Erhu, the bow is pulled lightly and the strings are rubbed heavily to show deep feeling, as if the Erhu is used to tell the grief, anguish, depression and other emotions in the heart. Pulling the bow gently and feeling long, as if intoxicated with the yearning for a better life and vision. Light and heavy pulls generate free, passionate, unrestrained music in the rapid change of finger skills. It is often used in the climax of music to make the brewing of emotion reach a commanding height.

The efficient integration of sound and emotion requires the coordination of body language in addition to the coordination of holding the piano in the left hand and the bow in the right hand. Body language is a kind of silent language, which conveys people's emotions, mentality and thoughts and feelings through body forms and movements. Facial expressions and body movements will change with the mood of the music. For instance, people show natural smile when cheerful, shake head to sigh when grieving, close an eye when daydream is contemplative, and swing the whole body when excited. These are the nature revelations of feelings. The body swing space can bring positive influence to players' emotion control, especially in the phrases of different emotional connection. In addition to the expression of body language combined with the use of breath, according to express the connotation of music works, the change of the music rhythm, tempo and start-stop phrase and the needs of the cadence and the use of positive breath adjustments will help enhance players' performance and the charm of music

emotion. At the same time, it will also render an atmosphere of the performance, stimulate the emotions of the audience, so as to produce the communication between performers and the audience.

2.5.8 Applications of Breath in Erhu Performance

In Erhu performance, the presence of breath is crucial. Especially in music, use of breath affects the fluctuation of music and the length of phrase. It is also true in Erhu performance, in which breathing depth, speed and time are closely related to the music displayed by the charm. In performance, breath is restricted by music content, rhythm, strength, speed, playing techniques and other factors. Therefore, breath rhythm should change reasonably according to the needs of performance, and only in this way can it better express the ups and downs of melody.

In Erhu performance, breath is required to be deep, long, thin and even. Before the performance and after the posture is done, performers need to keep the mood relaxed, silently say the melody to be played, and gradually immerse into the roles. Performers are required to adjust their breath before moving their bow, and then take a deep breath. The use of breath in the bow is mainly comfortable. As a general rule, performers should inhale while drawing the bow and exhale when pushing it. When playing with weak strength, performers should breathe slowly and gently. In the performance of strength, uniform speed and unimpeded breathing should be combined with the power of arm force, wrist force and finger force. The bow should be moved left and right along with the rhythm of music and the rhythm of breath. When playing with great strength, performers should take a deep breath quickly and concentrate all their strength on the forearm, so that breathing and bow movement are integrated. It can be seen that, to a certain extent, the breath affects the volume, and coordinates with arms, hands and wrists to produce the change of sound intensity and timbre.

In the long bow practice, performers should breathe slowly with physical and mental expansion, so that notes are played with solid strength without weakness. In the fast bow practice, performers should breathe to adjust the rhythm, so that they could move the bow fast and stably. When playing rhythmic music, performers should adjust and control their breath according to the rhythm. In order to reach a higher level of Erhu performance, players should try to penetrate their own breathing and the connotation of the music in each link of performances. They should be

strong and not impetuous, weak and not empty, fast and not urgent, slow and not late. Only to breath freely can they achieve the harmony of the piano music realm.

2.5.9 Erhu Playing Style

Performance style refers to the representative appearance presented by the performer in the process, and is the natural revelation and concrete performance of the performer in the performance. Generally speaking, players will form their own playing styles when they reach a higher level. It includes the expression of the content of the work, the treatment of music, the expression of playing emotion, the expression of playing posture, the relative immobilization of playing form and other factors. Subjectively speaking, artists' life experience, growth experience, knowledge and cultural level, ideas, emotional concepts, artistic quality and aesthetic ideas are all different, which will inevitably show a relatively stable performance state in the process of performance.

Formation of Erhu performance style requires the following factors:

1) Outstanding Erhu Playing Skills: if the performer still considers the performance skills during the performance, he/she cannot concentrate all his/her energy on the emotion of the performance, which indicates that his/her performance skills are not mature, and he/she is still at the primary or intermediate stage of Erhu performance. In each performance, there is instability and variability. Therefore, skilled playing techniques are primary conditions for the formation of playing style.

2) High Music Literacy: as for the emotional expression of music's works, it is necessary to understand the creation background, creation techniques, creation style, musical structure, tonality and other factors of the works. All of these require that the players have a good basic knowledge of music, such as basic music theories, harmony, western music history, Chinese music history, music aesthetics, polyphony, orchestration and other related theoretical knowledge.

3) Rich Life Experiences: Erhu players tend to show their true inner feelings as they get older. This is because the older you get, the richer your life experiences become. The understanding of the works is not only at the level of theoretical analysis, but through the understanding of the works, to experience the inner feelings of the works, and then through their own feelings, the works of emotion better performance.

4) High aesthetic and appreciation ability. Erhu players from learning Erhu to reach a high level of performance, often need the hard training of many famous educators. Every teacher has his own advantages and disadvantages in the process of teaching, which need to be identified by the performer, absorb the advantages of each teacher and performer, and constantly self-sublimation. This requires players to have a higher aesthetic and appreciation ability.

5) Rich experience in stage performance. Generally speaking, Erhu players tend to feel nervous when they take the stage, because stage performance is completely different to solo practice on oneself in a practice room. The later tends to focus on performance skills, while the former needs to present a perfect image, including skilled performance skills, beautiful performance posture and emotional expression. Therefore, only after practicing on the stage for many times can a performer have rich experience in playing on the stage and exhibit their own playing styles.

6) Perseverance on Practice: because Erhu is a very sensitive instrument, it requires players to take very delicate control. A little difference in left hand strength leads to a change in pitch, and a little difference in right hand strength leads to a change in tone. Therefore, to keep a good state, players are required to keep practicing every day without interruption. Only when they have practiced for enough time will they be able to control the instrument and master every note of it.

3. Suggestions for Instructors and students

3.1 Providing Some Suggestions for Instructors to Improve Their Teaching Quality.

Instructors should improve their teaching from the following aspects:

3.1.1 Most of the students majoring in acting have a good foundation of performance skills and have mastered relevant techniques.

Therefore, instructors always highlight exercise of performance works, while neglecting training of basic techniques. As a result, most students often make mistakes or feel unhappy when playing difficult works. In view of the deficiency of students' academic achievements, instructors should arrange students' academic work to help students consolidate and improve their academic background, thus achieving better teaching effects with higher time-efficiency. At the same time, students should strengthen their awareness and training of basic

techniques, and practice techniques of bow and string in a daily basis. The online expert skills courses could provide a good platform for students to learn basic skills.

3.1.2 Some students perform well in playing techniques, but lack emotional expression of the works.

In these cases, instructors need to put some time to analyze and interpret these works to students. The expression of emotion, which combines imagination, association, spirit and psychology, is the internal motive of performers' expression work. Notes in the performance are the external expression of the inner emotion. Only on the basis of full understanding and interpretation of the original works can the unique emotional characteristics of the works be presented. Finally, students should reach a state of "expressing emotions with sound, leading with emotion, and combining sound and emotion" during their performances. Online repertoire demonstrations courses will provide a good platform for students to learn Erhu works.

3.1.3 Erhu performance is a common discipline of art. In actual performances, many performers are extremely nervous or unable to perform as normal, which usually results from insufficient stage training.

Therefore, music education should integrate knowledge imparting and real-life exercises. Instructors should encourage students to participate in university and social arts activities. At the same time, various kinds of teaching concerts should be organized regularly to provide students with opportunities to display what they have learned, which could not only give them stage experience, but also improve their professional proficiency, build a good atmosphere of art learning and enhance the interaction between instructors and students. Another enlightenment brought out by online concert and lecture appreciation courses is that students can record their performances by themselves to find out their shortcomings through watching those videos.

3.1.4 Music is an important branch of culture. It carries and reproduces the aesthetic culture of truth, goodness and beauty through notes.

Therefore, music and culture are closely related. Musical works reflect distinctive features of cultures and times. If performers are good at performance but lack of cultural literacy, they can barely express the cultural connotation, thoughts and emotions of works vividly. Erhu performance is not only the process of players' second creation, but also the re-interpretation and construction of these works based on their cultural and artistic awareness. Hence instructors

should strengthen students' understanding and feeling of the connotation of works. In this way, the online basic knowledge courses serve as a good platform for students to acquire a better understanding of the ideological, political, social and cultural features of certain historical periods in which the works were created.

3.2 Providing Some Suggestions for Students to Improve Their Erhu Performance Skills.

Students should keep to the following innovations:

3.2.1 Students should pay more attention to basic skills training.

Most students majoring in Erhu performance are skilled of many playing techniques. Therefore, in the process of teaching, more attention is often paid to the accumulation of music works, while training of basic skills is always neglected. As a result, most students often make mistakes or feel powerless when playing difficult works.

To cope with this problem, instructors should put more time on training students' basic performance skills. In view of the shortcomings of students' performance, instructors could arrange targeted etudes to consolidate and improve students' performance basis. At the same time, students should be aware of the importance of basic skills training, and exercise bow and string techniques frequently. Bow-moving exercises include: slow longbow exercise, bow-splitting and bow-connecting bow-string changing exercise, bow-splitting exercise, bow-tip division exercise, fast bow-moving exercise, etc. String touching exercises include scale arpeggio exercises, quick fingering exercises, high fingering exercises, handle changing exercises, string rubbing exercises, trill exercises, slide exercises.

3.2.2 Students should follow reasonable schedules to practice.

In colleges and universities, instructors usually spend time explaining playing skills and music works, but seldom set requirements on students' practice schedule. Consequently, a lot of students practice harder but do not make greater progress. The author believes that a scientific practice schedule should be constructed based on the optimal practice period and duration. A study shows that the human body's functional state is periodic. So in terms of the practice period, generally, periods from 9:00 a.m. to 11:00 a.m., 3:00 p.m. to 4:00 p.m., and 8:00 p.m. to 9:00 p.m. are the flourishing time of human body and spirit, as well as the best time to practice.

In addition, an experiment was conducted to test brain response of to stimulus by measuring brain waves. An amplitude rise indicates that the brain has a positive response and the

practice produces good effects; while conversely, it indicates that the brain has a negative reaction and the effects of practice are not desired. During the experiment, players' amplitude increases 20 minutes before the performance, becomes smooth 20 to 30 minutes later, and decreases 30 minutes later. If the band continues to play after a break of five to ten minutes, their amplitude would continue to increase over the first twenty minutes. This result reveals the optimal rhythm of practice, that is, practicing continuously for 30 minutes at a time, then resting for 5 to 10 minutes and continuing to practice after that. Only follow a scientific practice schedule can students generate efficient outcomes.

3.2.3 Students should follow reasonable practice procedures.

Many Erhu players are eager to achieve success in the process of practice. They are not organized and spend much time in practice, only to get low efficiency. In terms of practice procedures, the author believes that the following principles should be followed in the process of practice:

1) Basic skills should be followed by the etude. Practice of basic skills is the basic link. Adhering to the practice of basic skills will make performers' skills constantly strengthened and improved, and also enable performers to perform with ease.

2) Performers should play slowly first and then fast. Slowing down is the best way to solve technical difficulties. Its purpose is to ensure that the brain could issue note playing instructions to the muscles correctly, and through repeated practice to be fixed in their mind. Students should build a solid foundation of the performance and speed up gradually until they reach the original speed.

3) Students should perform segments first, then the whole song. Lack of key points and mechanically repeated practice of the whole song will make brains slow and efficiency poor. Students who are not good at playing single segments should practice alone to solve the problems, and then connect with the original song in a natural and accurate performance state.

3.2.4 Students should conduct profound analysis of music works.

At the present stage, most students perform well in technical aspects, but lack of emotional expression of music works. To deal with this weakness, students should pay attention to the theoretical analysis of the works, including analysis of creation time, creation background,

creation motivation, creation technique, tonality, music structure, melody progression, music connotation and so on.

Expression of emotion generally involves many factors such as imagination, association, spirit and psychology, which is the internal motivation for performers to express their works, while notes in the performance are external manifestations of internal emotions. Only on the basis of full understanding and interpretation of the original song can players vividly present the unique emotional characteristics of the works endowed by the players themselves, and finally achieve the performance state of "expressing emotions with sound, leading with emotion, and combining sound and emotion".

3.2.5 Students should constantly improve their cultural accomplishment.

Culture is the creation of human spiritual activities, and music is an important branch of human culture which carries and conveys the aesthetic culture of truth, goodness and beauty through notes. Therefore, music is closely related to culture, and there is a relationship between part and whole. All music works profoundly reflect the distinctive characteristics of The Times and culture. If the performers are poor in cultural literacy and artistic implication, even if they have a higher ability of performance, they cannot effectively express the cultural connotation, ideas and emotions of the work. Erhu performance is not only the process of players' second creation, but also the re-interpretation and construction of their works based on their own cultural and artistic accomplishment.

In my opinion, students should deepen their understanding of the ideological, political, social and cultural features of the historical periods in which the works were created. Also, students should improve their cultural accomplishment and strengthen their understanding and feeling of the connotation of music works.

Since players have different life experience, spiritual characters, music proficiency, personality temperaments and aesthetic tastes, after many times of practice, they will acquire different temperaments and styles of performance. This is often referred to as "re-creation". In addition, it is necessary to mention the expression of "love" in live performance. Live performance is the final part of music "re-creation", which is the crystallization of repeated practice and experience. Of course, to grasp the investment of emotion "degree", players need to set aside part of the

energy to control intonation, rhythm and emotion of each paragraph to ensure normal play of their skills.

3.2.6 The comprehensive application of performance techniques

The sound includes melody, rhythm, strength, speed, timbre and other factors is the external form of expression. Emotion includes imagination, association, spirit, psychology and other factors, is the internal driving force of performance. The combination of emotion and sound is closely connected by the performers' body movements. In short, what is gained from emotion is what should be done by the hand. These movements include the left hand holding the harp and the right hand holding the bow.

Holding the handle in the left hand requires string rubbing, handle changing, trill, glide, overtone and other skills. Among them, the biggest influence on the sound change is the kneading of strings, which makes music performance more vivid, beautiful and full of singing quality and appeal. It fully expresses the change of people's ideological connotation and emotion. Kneading can be divided into rolling kneading, sliding kneading, pressing kneading, and other playing methods. Meanwhile, the process of kneading the strings can be carried out in a manner of gradually accelerating, slowing down, gradually strengthening, gradually weakening, late kneading the strings or continuously kneading the strings. Kneading involves strong controllability and freedom, thus it is critical in sound adjustment. In actual performances, the performance of beautiful, smooth, rich in melody needs rolling; playing deep, grief, anger, despair of the music needs pressure kneading, especially in the music pause in which the bow stops but kneading does not, showing a profound artistic conception of "sound broken but not broken"; playing joy, humor, humor of local flavor music and a number of notes requires the technique of sliding to express the inner feelings. However, these three types of string rubbing do not exist in isolation. In the actual performance of music, two or even a variety of chord rubbing methods are often combined together, and some notes are kept in a straight state without chord rubbing. The whole music is well organized, with ups and downs, which is infectious. Generally speaking, when notes become stronger or the melody goes up, the chord rubbing strength is increased and the chord rubbing speed is slightly accelerated on a stable basis. When notes become weaker or the melody goes down, the chord rubbing strength decreases and the chord rubbing speed slows down slightly on a stable basis. The state of string kneading fully conforms to the emotion

expressed by the music. Voice are accompanied by subjective feelings of change, so the emotion of the strong, weak, fast, slow and other changes of the chord also play a great role in adjustment. Techniques of the right hand holding the bow include slow long bow, medium speed bow, fast bow, ton bow, flutter bow, jump bow, double string movement bow and so on. Movement and changes of the bow can make a rich variety of sounds.

3.2.7 Integration of Sound and Emotion

The fundamental reason why the sound structure can express specific emotions is that there is an extremely important similarity between the two, that is, both are demonstrated and developed in time, with rich changes in speed, strength and tone, and extremely dynamic process. This crucial similarity is the bridge between the two. When the left hand kneads the strings and the right hand moves the bow simultaneously, the sound contrast will be further strengthened and the emotional changes will be further expressed.

Generally speaking, in the performance of the Erhu, the bow is pulled lightly and the strings are rubbed heavily to show deep feeling, as if the Erhu is used to tell the grief, anguish, depression and other emotions in the heart. Pulling the bow gently and feeling long, as if intoxicated with the yearning for a better life and vision. Light and heavy pulls generate free, passionate, unrestrained music in the rapid change of finger skills. It is often used in the climax of music to make the brewing of emotion reach a commanding height.

The efficient integration of sound and emotion requires the coordination of body language in addition to the coordination of holding the piano in the left hand and the bow in the right hand. Body language is a kind of silent language, which conveys people's emotions, mentality and thoughts and feelings through body forms and movements. Facial expressions and body movements will change with the mood of the music. For instance, people show natural smile when cheerful, shake head to sigh when grieving, close an eye when daydream is contemplative, and swing the whole body when excited. These are the nature revelations of feelings. The body swing space can bring positive influence to players' emotion control, especially in the phrases of different emotional connection. In addition to the expression of body language combined with the use of breath, according to express the connotation of music works, the change of the music rhythm, tempo and start-stop phrase and the needs of the cadence and the use of positive breath adjustments will help enhance players' performance and the charm of music

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3.2.8 Applications of Breath in Erhu Performance

In Erhu performance, the presence of breath is crucial. Especially in music, use of breath affects the fluctuation of music and the length of phrase. It is also true in Erhu performance, in which breathing depth, speed and time are closely related to the music displayed by the charm. In performance, breath is restricted by music content, rhythm, strength, speed, playing techniques and other factors. Therefore, breath rhythm should change reasonably according to the needs of performance, and only in this way can it better express the ups and downs of melody.

In Erhu performance, breath is required to be deep, long, thin and even. Before the performance and after the posture is done, performers need to keep the mood relaxed, silently say the melody to be played, and gradually immerse into the roles. Performers are required to adjust their breath before moving their bow, and then take a deep breath. The use of breath in the bow is mainly comfortable. As a general rule, performers should inhale while drawing the bow and exhale when pushing it. When playing with weak strength, performers should breathe slowly and gently. In the performance of strength, uniform speed and unimpeded breathing should be combined with the power of arm force, wrist force and finger force. The bow should be moved left and right along with the rhythm of music and the rhythm of breath. When playing with great strength, performers should take a deep breath quickly and concentrate all their strength on the forearm, so that breathing and bow movement are integrated. It can be seen that, to a certain extent, the breath affects the volume, and coordinates with arms, hands and wrists to produce the change of sound intensity and timbre.

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6) Perseverance on Practice: because Erhu is a very sensitive instrument, it requires players to take very delicate control. A little difference in left hand strength leads to a change in pitch, and a little difference in right hand strength leads to a change in tone. Therefore, to keep a good state, players are required to keep practicing every day without interruption. Only when they have practiced for enough time will they be able to control the instrument and master every note of it.

4. Significance of this Research

Erhu culture is created and formed by Chinese working people in the long-term living practice. It is the crystallization of sweat and wisdom, and the charm of Chinese culture. All the educators have the responsibility and obligation to promote its inheritance and development. Its value and significance are mainly reflected in the following aspects:

3.1 In terms of cultural value, it can strengthen national consciousness and stimulate national cultural spirit.

3.2 In terms of social value, it can highlight regional customs and local folk characteristics.

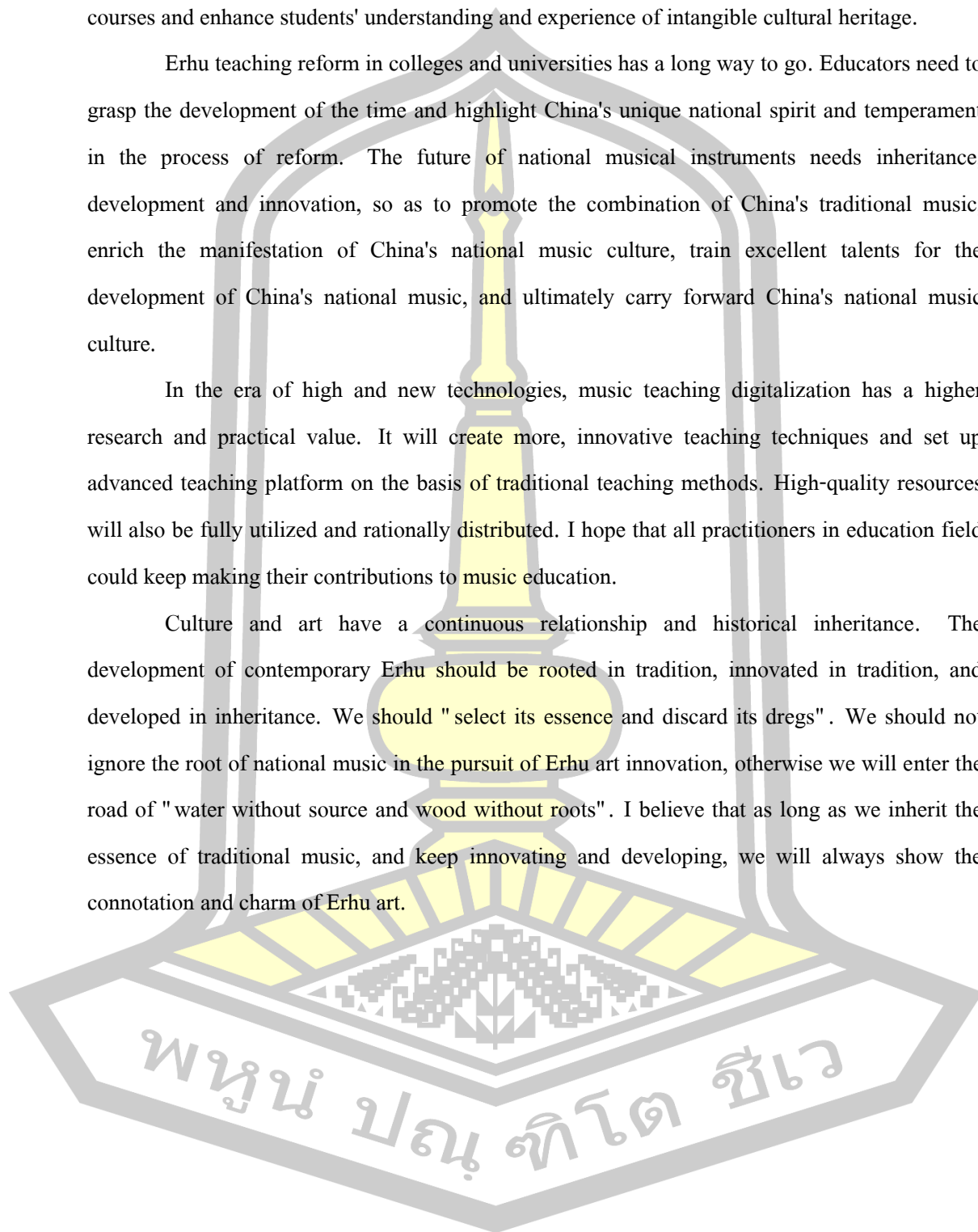
3.3 In terms of art value, it can delight the public and enrich their artistic life.

3.4 In terms of learning value, it can promote comprehensive construction of college courses and enhance students' understanding and experience of intangible cultural heritage.

Erhu teaching reform in colleges and universities has a long way to go. Educators need to grasp the development of the time and highlight China's unique national spirit and temperament in the process of reform. The future of national musical instruments needs inheritance, development and innovation, so as to promote the combination of China's traditional music, enrich the manifestation of China's national music culture, train excellent talents for the development of China's national music, and ultimately carry forward China's national music culture.

In the era of high and new technologies, music teaching digitalization has a higher research and practical value. It will create more, innovative teaching techniques and set up advanced teaching platform on the basis of traditional teaching methods. High-quality resources will also be fully utilized and rationally distributed. I hope that all practitioners in education field could keep making their contributions to music education.

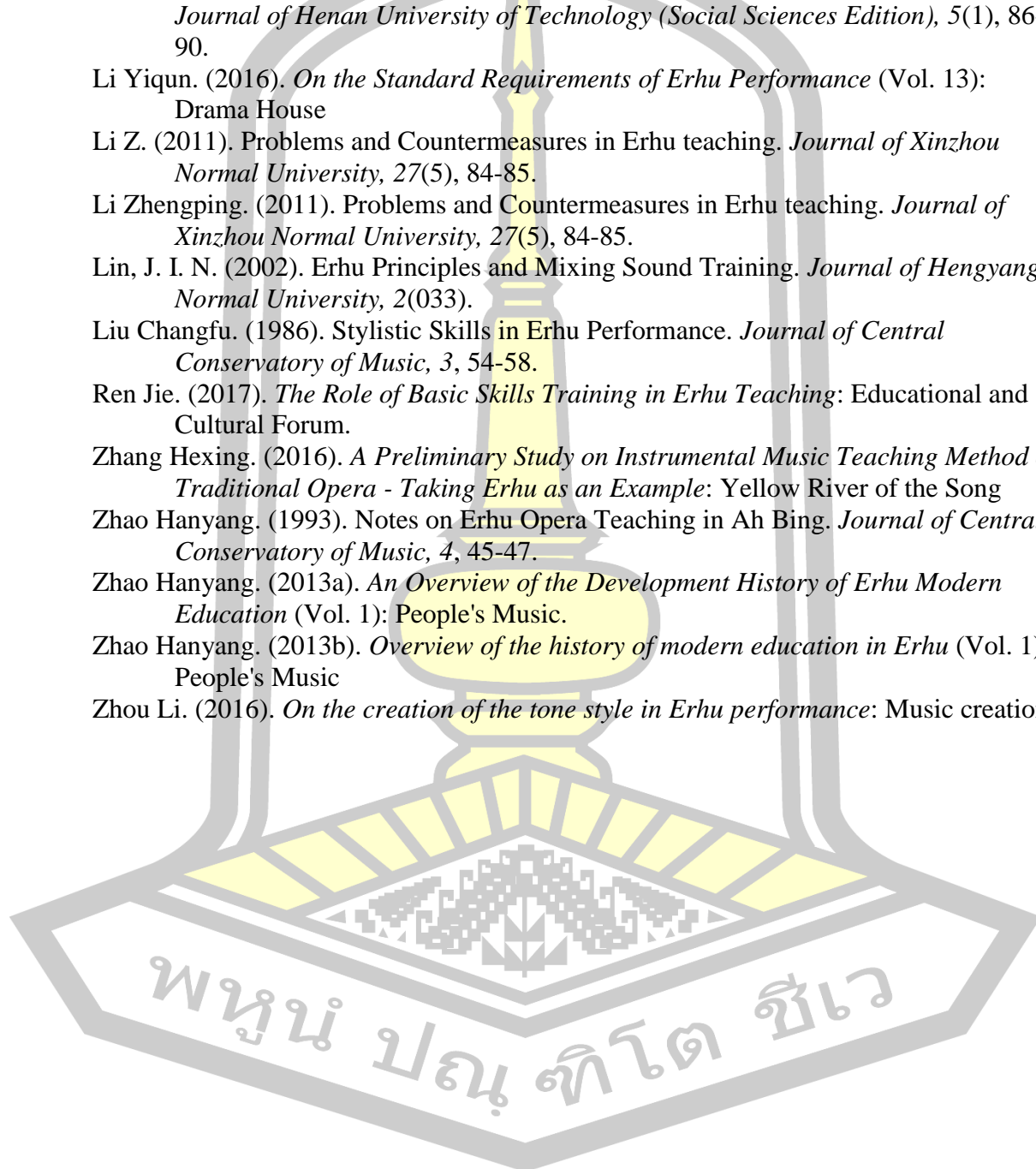
Culture and art have a continuous relationship and historical inheritance. The development of contemporary Erhu should be rooted in tradition, innovated in tradition, and developed in inheritance. We should "select its essence and discard its dregs". We should not ignore the root of national music in the pursuit of Erhu art innovation, otherwise we will enter the road of "water without source and wood without roots". I believe that as long as we inherit the essence of traditional music, and keep innovating and developing, we will always show the connotation and charm of Erhu art.

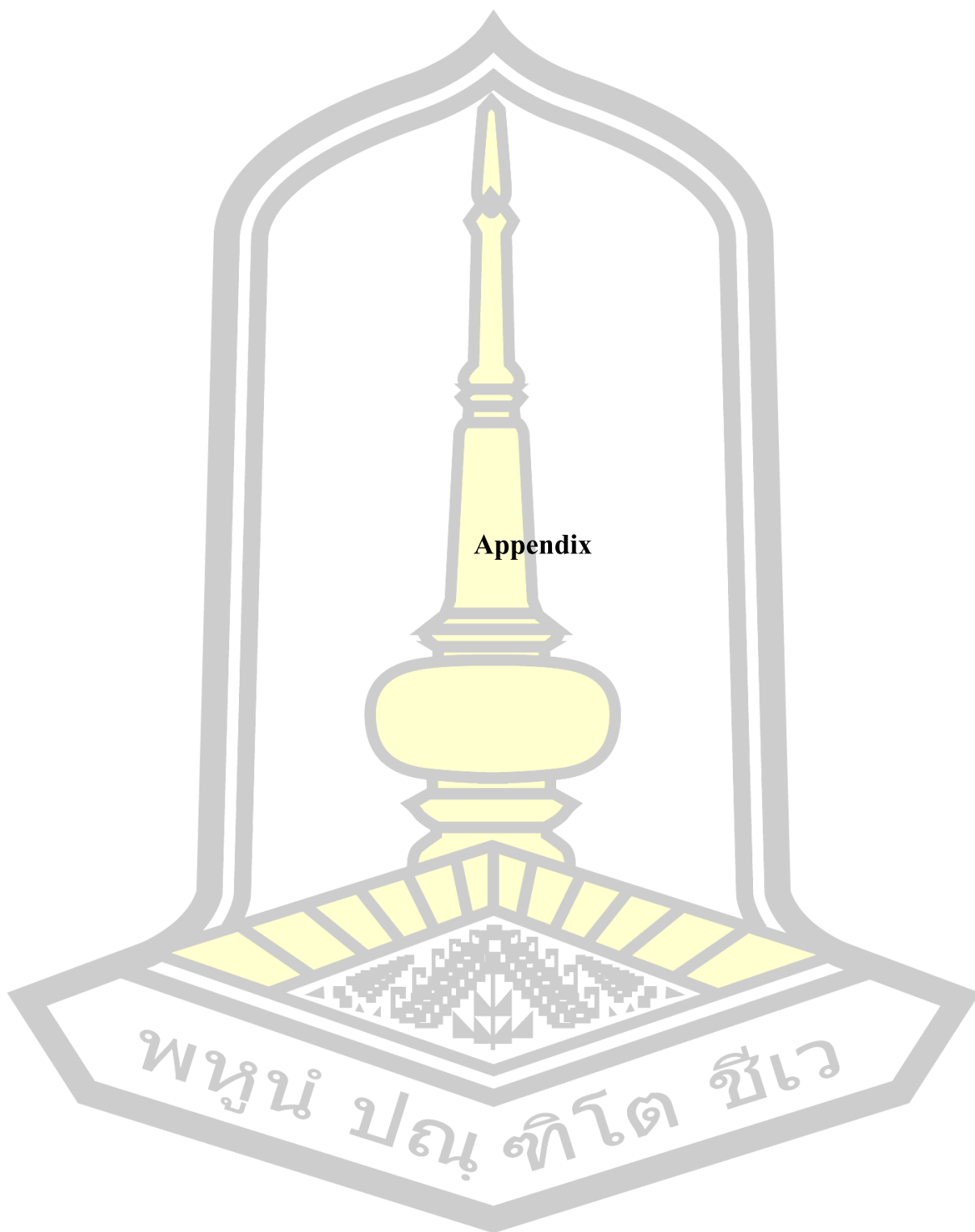


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Appendix

พญูน์ ปณฺ ทิตฺ สีเว

Appendix

Common symbols of Erhu

简谱 (Numbered musical notation) :

1 2 3 4 5 6 7 1

do re mi fa sol la ti do

C D E F G A B C

五线谱 (Staff) :



1=C 1 2 3 4 5 6 7

弓法技巧 (Techniques of bow) :

1. “㇏”：拉弓 (Pull the bow)
2. “㇏”：推弓 (Push the bow)
3. “内”：内弦 (Insider string)
4. “外”：外弦 (Outer string)
5. “∪”：连弓 (Legato)
6. “∇”：顿弓 (Staccato)
7. “∪∇”：连顿弓 (Legato and staccato)
8. “彡”：颤弓 (Quiver bow)
9. “一”：保持弓 (Tenuto)
10. “九”：抛弓 (Thrown bow)
12. “>”：重音 (Accent)
12. “跳”：跳弓 (Ricochet)
13. “双音”：内外弦同时演奏 (Double chord)

指法技巧 (Technique of fingers) :

- 1.“0”：空弦音 (No finger)
- 2.“一”或“I”：表示用食指按音 (The index finger)
- 3.“二”或“II”：表示用中指按音 (The middle finger)
- 4.“三”或“III”：表示用无名指按音 (The ring finger)
- 5.“四”或“×”：表示用小指按音 (The little finger)
- 6.“↗”：上滑音 (Up glide)
- 7.“↘”：下滑音 (Down glide)
- 8.“↻”：上回旋滑音 (Up whirly glide)
- 9.“↺”：下回旋滑音 (Down whirly glide)
- 10.“↻”：垫指滑音 (Two fingers glide)
- 11.“↗”：大上滑音 (Up wide glide)
- 12.“↘”：大下滑音 (Down wide glide)
- 13.“フ”：勾弦 (Pizzicato)
- 14.“tr”：颤音 (Tremolo)
- 15.“○”：自然泛音 (Natural partials)
- 16.“◇”：人工泛音 (Artificial partials)
- 17.“✎”：左手拨弦记号 (Pizzicato of left hand)
- 18.“✎”：右手拨弦记号 (Pizzicato of right hand)
- 19.“f”：强奏记号 (Forte)
- 20.“mf”：中强记号 (Medium forte)
- 21.“sf”：特强记号 (Special forte)
- 22.“p”：弱奏记号 (Pianissimo)
- 23.“mp”：中弱记号 (Medium pianissimo)
- 24.“sp”：特弱记号 (Special pianissimo)
- 25.“sfp”：突强后弱奏 (Special forte and then pianissimo)
- 26.“< 或 cresc”：渐强 (Crescendo)
- 27.“> 或 decresc”：减弱 (Decrescendo)

- 28.“♩”：跳奏记号（Saltato）
29.“♩”：延长记号（Prolongation）
30.“w”：上颤音（Up short tremolo）
31.“w”：下颤音（Down short tremolo）
32.“D.C”：从头反复（Repeating from the beginning）
33.“D.S”：从反复记号处反复（Repeating from the marks）
34.“Fine”：结束（Fine or end）



VITA

1.Profile

Chao Zhang, Male, Lecturer in Xing Yi Normal University for Nationalities, PhD candidate in Mahasarakham University, Thailand. Member of the Chinese Musicians Association, Member of China National Orchestral Association.

2.Education and Work Experience

2.1 Education

2.1.1 09/2008-07/2012, Bachelor's Degree, Erhu Performance Major, Faculty of Music in Qufu Normal University;

2. 1. 2 09/ 2012-06/ 2015, Master' Degree, Erhu Performance Major, Tianjin Conservatory of Music;

2. 1. 3 07/ 2017 till now, Doctorate Degree, PhD Program in music(Music Education), Mahasarakham University,Thailand;

2.2 Work Experience

2.2.1 08/2015 till now, Instructor of Erhu playing and basic music principles, Xingyi Normal University for Nationalities;

2.2.2 07/2016, Obtaining the Certificate of Teachers'Qualification in Institutions of Higher Learning in music profession;

2.2.3 11/2016, Participating in the demonstrative program of Middle-Western Region Colleges and Universities New Teacher Initiation, a part of the National Cultivation Program;

2.2.4 12/2017, Obtaining the title of lecturer;

2.2.5 09/2018, Director of instrumental music teaching study.

2.3 Conference Attended

2. 3. 1 02/ 2018, Attending RLCS International Conference and giving a presentation about the issues of Erhu;

2. 3. 2 11/ 2018, Attending The 10th Anniversary of MSU School of Music- International Music and Performing Arts Seminar and giving a presentation of music data education.

2.4 Lectures

2. 4. 1 11/ 2018, Attending the 11th China-ASEAN Music and Dancing Symposium and giving a topic lecture on the status quo of music education in primary and secondary schools;

2.4.2 12/2018, Attending the “40 Years of Reform and Opening-up, New Era of National Education” Forum and giving a topic lecture on higher education mode of inheritance of intangible music cultural heritages.

3.Awards, Publications and Research

3.1 Awards

3. 1. 1 08/ 2014, Golden Award in youth Erhu profession group in the Fourth International Youth Instrumental Contest;

3. 1. 2 11/ 2014, holding a personal Erhu solo concert in the performance hall of Tianjin Conservatory of Music;

3.2 Publications

3. 1. 3 05/ 2015, Discussion on the Artistic Features of Xue Shan Hun Su Composed by Liu Wenjin, master dissertation;

3. 1. 4 08/ 2015, Discussion on the “Institutions” in Mr. Xiang Yang’s Study of Traditional Music, published on Northern Music Journal;

3. 1. 5 06/ 2016, Interpretation of the Sounds and Emotions in Erhu Performance, published on Music Space Journal;

3. 1. 6 03/ 2017, Exploration of Erhu Teaching Reform, published on Home Drama Journal;

3.1.7 05/2017, Exploration of the Inheritance and Protection of Buyi Baying, published on Pop Music Journal;

3.1.8 07/2018, Some Thoughts about Erhu Performances in Colleges and Universities—comment on the 500 Q&A of Erhu Performance Knowledge, published on Journal of the Chinese Society of Education Journal (recruited in CSSCI base);

3.1.9 03/2019, Discussion on the Data-oriented Reform of Music Education in Colleges and Universities—taking digital Erhu education as an instance, published on Art Evaluation Journal;

3.1.10 07/2019, An Analysis of the Problems and Difficulties in Erhu Teaching, published on Review of Educational Theory Journal.

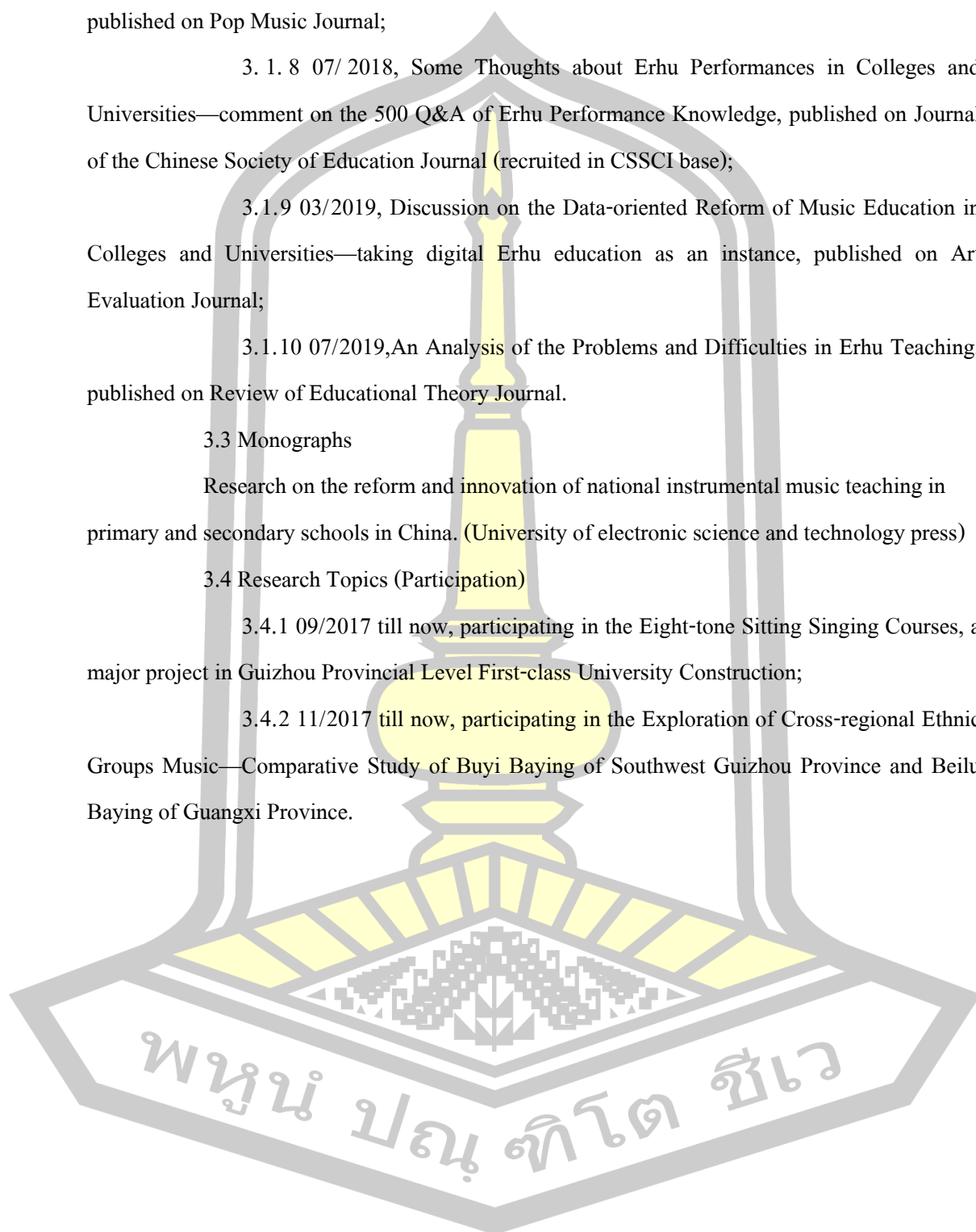
3.3 Monographs

Research on the reform and innovation of national instrumental music teaching in primary and secondary schools in China. (University of electronic science and technology press)

3.4 Research Topics (Participation)

3.4.1 09/2017 till now, participating in the Eight-tone Sitting Singing Courses, a major project in Guizhou Provincial Level First-class University Construction;

3.4.2 11/2017 till now, participating in the Exploration of Cross-regional Ethnic Groups Music—Comparative Study of Buyi Baying of Southwest Guizhou Province and Beilu Baying of Guangxi Province.



BIOGRAPHY

NAME	Chao Zhang
DATE OF BIRTH	1989-05-14
PLACE OF BIRTH	Shan Dong province
ADDRESS	Xing Yi City,Gui Zhou Province
POSITION	lecturer
PLACE OF WORK	Xing Yi Normal University for Nationalities
EDUCATION	2008-2012 Bachelor's degree, Qu Fu Normal University 2012-2015 Master's degree, Tian Jin Conservatory of Music 2019 Doctor of philosophy in music (Ph.D.), Mahasarakham University

พหุบัณฑิต ชีเว