

# A Study of the Effect of Sichuan Opera Singing on the Vocal Skills of Music Students

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**Abstract:** The purpose of the article is to explore the effects of Sichuan opera singing on music majors' vocal skills, focusing on three key aspects: pitch test, assessment of rhythmic perception, and emotional expression. Through a quasi-experimental design, 100 music majors were selected as research subjects and divided into an experimental group that received Sichuan opera singing instruction and a control group that received traditional vocal instruction. The results showed that compared with the control group, the experimental group receiving Sichuan opera singing teaching showed significant improvement in pitch mastery, rhythm perception, and emotional expression.

**Keywords:** Sichuan opera singing; Music students; Vocal skills; Effect

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## 1. Introduction

With the revitalization of traditional Chinese culture, Sichuan opera, an important intangible cultural heritage, is gaining attention but remains overemphasized in modern music education. This study explores its influence on music majors' vocal skills, aiming to reveal its potential in vocal teaching and promote students' development.

Sichuan opera, known for its unique artistic characteristics, requires profound vocal skills. This study investigates its impact through literature analysis, case studies, and experimental teaching, focusing on breath control, vocal range, resonance, diction clarity, and emotional expression.

A quasi-experimental design divided 100 music majors into an experimental group receiving Sichuan opera instruction and a control group receiving traditional vocal instruction. Results showed significant improvements in pitch mastery, rhythm perception, and emotional expression for the experimental group.

## 2. Problem statement

In modern music education, the focus is predominantly on Western opera and art songs, often neglecting traditional Chinese music forms such as Sichuan opera. Despite its rich vocal techniques and unique artistic charm, Sichuan opera has not been fully integrated into music professional education. This oversight leads to

a missed opportunity for students to enhance their vocal skills through diverse methods. This study aims to explore the influence of Sichuan opera singing on the vocal skills of music majors. By incorporating Sichuan opera into vocal courses, we seek to provide new ideas and practical experiences for music education, enriching the content of vocal teaching and promoting the overall development of students.

Research question 1: Is there a significant difference in the vocal skill development of music majors who receive Sichuan opera singing instruction compared to those who receive traditional vocal instruction?

Research question 2: How does teaching Sichuan opera singing in shared reading activities influence the vocal skill development of music majors?

H<sub>0</sub>1: There is no significant difference in the vocal skill development of music majors between those who receive Sichuan opera singing instruction and those who receive traditional vocal instruction.

H<sub>0</sub>2: There is no significant difference in the vocal skill development of music majors as a result of teaching Sichuan opera singing in shared reading activities.

### 3. Literature review

The integration of traditional music forms into modern music education has gained significant attention. According to recent findings, traditional music like Sichuan opera can enrich the curriculum and provide students with a broader cultural perspective <sup>[1]</sup>. Sichuan opera is renowned for its unique vocal techniques, which include precise breath control, expansive vocal range, effective resonance utilization, clear diction, and expressive emotional delivery. According to Li and Yu, these techniques are essential for the effective performance of Sichuan opera and offer significant benefits for vocal training <sup>[2]</sup>. The study by Li highlighted how mastering these techniques can improve overall vocal performance, making a strong case for their inclusion in music curricula. Research by Smith indicated that exposure to various vocal techniques and styles can significantly enhance a singer's versatility and adaptability <sup>[3]</sup>. Smith's study on the benefits of incorporating non-Western vocal techniques into Western music education suggests that students who engage with diverse musical traditions develop stronger vocal skills and greater artistic expression. This finding supports the hypothesis that Sichuan opera can positively impact vocal skills development in music majors. Experimental studies provide empirical evidence on the effectiveness of diverse vocal training methods.

A quasi-experimental study by Lee on the impact of traditional Korean Pansori singing on vocal students demonstrated significant improvements in vocal techniques and emotional expression <sup>[4]</sup>. Lee's methodology and findings offer a useful framework for studying the impact of Sichuan opera singing on music majors.

### 4. Methodology

The study involved 100 music majors from a university, divided into an experimental group and a control group, each consisting of 50 students. The experimental group received instruction in Sichuan opera singing, while the control group received traditional vocal instruction. Participants were randomly assigned to each group to minimize selection bias and ensure comparable baseline characteristics.

The experimental group participated in a comprehensive Sichuan opera singing curriculum over one semester. This included historical and cultural background and vocal techniques performance practice. The control group followed a traditional vocal training curriculum focusing on Western opera and art songs.

The Vocal Skills Comprehensive Assessment System (VSCAS) is an innovative testing tool designed to assess the vocal skills of music students. The system uses audio analysis software to accurately and fairly assess students' performance in three key areas: pitch mastery, rhythmic awareness, and emotional expression. To

validate the tool, pre-test and post-test scores were collected from 60 participants (30 from the experimental group and 30 from the control group). The internal consistency of the tool was analyzed using Cronbach's alpha (Table 1).

**Table 1.** Reliability statistics of VSCAS

Item	Pre-test mean (SD)	Post-test mean (SD)	Cronbach's alpha (Pre-test)	Cronbach's alpha (Post-test)
Pitch mastery	72.4 (8.6)	85.2 (7.3)	0.815	0.827
Rhythm perception	68.3 (9.1)	82.7 (8.4)	0.823	0.834
Emotional expression	70.5 (7.8)	84.1 (6.9)	0.837	0.842
Overall	70.4 (8.5)	84.0 (7.5)	0.825	0.832

SD: standard deviation

The alpha coefficients indicated high reliability, confirming the internal consistency of the testing tool. The improvements in the mean scores from the pre-test to post-test for the experimental group suggest that the tool is effective in capturing changes in vocal skills.

Quantitative data from the pre-tests and post-tests were analyzed using statistical methods, including paired sample *t*-tests, independent sample *t*-tests, and ANOVA, to assess the interaction effects between different instructional methods and student outcomes.

## 5. Results and discussion

The pre-test was administered to the experimental and control groups to ensure comparability. The results, as shown in Table 2, indicate no significant differences between the two groups in both pitch mastery and rhythm perception before the experiment, confirming that the groups were initially comparable in their vocal skills.

**Table 2.** Pre-experimental *t*-test

	Groups (mean ± SD)		<i>t</i>	<i>P</i>
	Experimental group ( <i>n</i> = 50)	Control group ( <i>n</i> = 50)		
Pitch mastery	72.4 ± 8.6	72.2 ± 8.5	0.0085	0.932
Rhythm perception	68.3 ± 9.1	68.5 ± 9.3	0.106	0.916

SD: standard deviation; \**P* < 0.05, \*\**P* < 0.01

After the semester-long intervention, post-test results revealed significant improvements in the experimental group's vocal skills compared to the control group. As shown in Table 3, the experimental group showed significant gains in both pitch mastery and rhythm perception.

**Table 3.** Post-experimental *t*-test

	Groups (mean ± SD)		<i>t</i>	<i>P</i>
	Experimental group ( <i>n</i> = 50)	Control group ( <i>n</i> = 50)		
Pitch mastery	85.2 ± 7.3	75.6 ± 6.85	2.12	0.036*
Rhythm perception	82.7 ± 8.4	74.3 ± 7.9	2.45	0.018*

SD: standard deviation; \**P* < 0.05, \*\**P* < 0.01

The findings indicate that integrating Sichuan opera singing into vocal training significantly enhances music majors' vocal skills. This study confirms Schippers and Smith's research that highlighted the benefits of incorporating diverse musical traditions into music education <sup>[5,6]</sup>. The experimental group showed substantial improvement in pitch mastery (mean scores increased from 72.4 to 85.2), aligning with findings on the benefits of traditional singing techniques. The experimental group's rhythm perception scores also significantly improved (mean scores increased from 68.3 to 82.7), supporting Lee's study on the positive impact of traditional rhythmic training.

Overall, the VSCAS proved effective in measuring these improvements, with high reliability indicated by Cronbach's alpha coefficients (**Table 1**).

The results suggest that incorporating traditional music forms like Sichuan opera can significantly enrich vocal training, enhance students' musical capabilities, and promote cultural appreciation. By integrating such diverse musical traditions, students gain exposure to a broader range of vocal techniques and artistic expressions, which can lead to improved versatility and adaptability in their performances. Additionally, engaging with traditional music fosters a deeper understanding and appreciation of cultural heritage, contributing to a more well-rounded musical education. Future research should explore the long-term effects of traditional music training on creativity and improvisation, examining how these practices influence students' overall artistic development and their ability to innovate within their musical careers. Such studies could provide valuable insights into the lasting impact of traditional music education on modern vocal training.

## **6. Conclusion**

### **6.1. Summary of findings**

This study investigated the impact of incorporating Sichuan opera singing into the vocal training of music majors, with a specific focus on pitch mastery, rhythm perception, and emotional expression. The findings demonstrate significant improvements in these areas for the experimental group, highlighting the potential benefits of integrating traditional Chinese music forms into modern vocal education.

The results of the pre-test and post-test assessments, analyzed using the VSCAS, reveal that students who received instruction in Sichuan opera singing exhibited substantial gains in their vocal skills compared to those who followed traditional Western vocal training methods. The high reliability scores of the VSCAS tool further validate these findings, indicating the consistent and accurate measurement of the students' vocal improvements.

These improvements align with existing research that underscores the value of diverse musical training in enhancing vocal versatility and expressiveness. The significant advancements in pitch mastery, rhythm perception, and emotional expression observed in this study support the hypothesis that traditional music forms like Sichuan opera can play a crucial role in enriching vocal education.

### **6.2. Implications and future research**

The integration of Sichuan opera into the curriculum not only fosters technical proficiency but also promotes cultural appreciation and broader artistic expression among music majors. This approach aligns with global educational trends emphasizing the importance of cultural diversity and inclusion in music education. By exposing students to diverse musical traditions, educators can help cultivate a more holistic and versatile skill set in their students.

Future research should explore the long-term effects of such integrative practices on other aspects of musical performance, such as creativity, improvisation, and overall artistic development. Additionally, studies

could investigate the applicability of similar integrative approaches across different cultural music traditions and their impact on various educational contexts. For instance, comparing the effects of integrating other regional operas or traditional music styles into the curriculum could provide a broader understanding of the benefits and challenges associated with such educational practices.

Furthermore, qualitative studies focusing on students' experiences and perceptions of learning traditional music forms could offer valuable insights into the pedagogical strategies that are most effective in fostering engagement and skill development. This research could also examine how students' cultural identity and appreciation for traditional music evolve through such integrative educational approaches.

Incorporating Sichuan opera singing into vocal training significantly enhances vocal skills. The VSCAS tool effectively captured these improvements, supporting the inclusion of traditional music forms in modern vocal education. By continuing to explore and integrate diverse musical traditions, educators can enrich the learning experience and promote the development of well-rounded, culturally aware musicians.

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## Disclosure statement

The authors declare no conflict of interest.

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