

## The Effect of Individual Differences on Learning Outcomes in Guzheng Education in Contemporary Yangzhou

Xiangwen Chen<sup>1</sup>

<sup>1</sup>*China Culture Center in Bangkok*

*e-mail: 1265082345@qq.com*

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### Abstract

Guzheng education in contemporary Yangzhou has undergone remarkable expansion in recent decades, driven by both the revival of traditional culture and the increasing popularity of community-based music learning. Yangzhou, historically renowned for its refined guzheng aesthetics, has become a significant hub attracting learners from a wide range of ages and social backgrounds. This study investigates how individual differences—including age, prior musical experience, socioeconomic status, and practice habits—influence learning outcomes among 150 guzheng learners from private studios, arts institutions, and community centers in Yangzhou. Quantitative analyses reveal significant variations in theory knowledge across age cohorts, a moderate positive correlation between deliberate-practice hours and performance level, and meaningful disparities in learning conditions based on socioeconomic background. Regression analyses further indicate that practice duration serves as a significant predictor of technical proficiency. By integrating frameworks from lifelong learning theory, cultural capital theory, and deliberate practice research, this study offers an empirically grounded perspective on how learner diversity shapes contemporary guzheng education. The findings highlight the necessity of differentiated instructional approaches and the importance of reducing socioeconomic barriers in order to sustain the development and transmission of intangible cultural heritage.

**Keywords :** Guzheng education; Yangzhou; Individual differences; Learning outcomes; Cultural capital; Deliberate practice

## 1. Introduction

The guzheng, a traditional Chinese plucked zither with a history exceeding two thousand years, represents one of the most iconic instruments in Chinese musical culture. Over the past few decades, rapid economic growth, educational diversification, and renewed cultural confidence have contributed to a revitalized interest in traditional music education across China. Yangzhou, in particular, has gained prominence not only for its historic role in shaping guzheng performance aesthetics but also as a thriving contemporary center for both amateur and professional learning.

Existing scholarship on the guzheng has primarily focused on stylistic development, performance traditions, regional schools, and historical analyses of repertoire. However, far fewer studies have examined the sociological and pedagogical dimensions of guzheng learning in modern urban environments—especially with regard to learners’ individual differences. As social music education becomes increasingly inclusive, learners vary widely in age, musical background, motivation, and available learning resources. These differences may significantly affect learning progress, performance outcomes, persistence, and satisfaction.

This study aims to fill this gap by systematically investigating how individual factors shape learning outcomes in Yangzhou’s contemporary guzheng education landscape. Particular attention is paid to four major dimensions: (1) age cohort, (2) prior music experience, (3) socioeconomic background, and (4) deliberate-practice habits. These variables are explored through the lenses of lifelong learning theory, Bourdieu’s theory of cultural capital, and the deliberate practice framework proposed by Ericsson. Together, these theoretical perspectives provide a comprehensive foundation for understanding the complexity of learning trajectories among diverse guzheng learners.

## 2. Method

### 2.1 Participants

The study recruited 150 guzheng learners from Yangzhou through stratified sampling across private studios, arts training centers, community cultural institutions, and independent teachers. The age range spanned from 6 to 70 years old, enabling a broad investigation of developmental and motivational differences. The sample consisted of approximately 40% minors, 25% university students, 30%

working adults, and 5% retirees. Females represented roughly two-thirds of participants, reflecting national demographic trends in traditional instrument learning. Learners also varied widely in their prior musical training, with some having years of experience in other instruments and others beginning as complete novices.

## **2.2 Measures and Instruments**

A structured questionnaire was designed for the study, consisting of six major sections: demographic background, socioeconomic indicators, learning history, practice habits, music theory knowledge, and learning satisfaction. Socioeconomic indicators included household income, parental educational level, and access to instrument resources. Practice habits were measured through items on weekly deliberate-practice hours, practice regularity, practice environment, and strategy use. Music theory knowledge was assessed through a standardized 20-item scale, while satisfaction was measured across teaching methods, materials, teacher–student interaction, and overall experience.

A pilot study involving 20 learners was conducted to refine questionnaire clarity. Cronbach’s alpha coefficients for multi-item scales ranged from .78 to .91, indicating acceptable internal consistency.

## **2.3 Data Collection Procedure**

Data collection was carried out over a two-month period. Participants completed the questionnaire either in person or through an online survey platform. All participants were informed of the study’s purpose, and consent was obtained from both adult participants and the parents of minors. The anonymity and confidentiality of all respondents were ensured throughout the process.

## **2.4 Data Analysis**

SPSS software was used for statistical analysis. Descriptive statistics were generated to summarize sample characteristics. One-way ANOVA tests were performed to examine group differences across age cohorts and socioeconomic categories. Pearson correlation analysis assessed the relationships between practice hours, theory knowledge, and performance outcomes. Multiple regression models were applied to identify predictors of technical proficiency and long-term learning intention. Statistical

### 3. Results

ANOVA results showed significant differences in music theory knowledge among age cohorts. University students achieved the highest scores, followed by adults and minors. Retirees showed the lowest theory knowledge scores, though their group size was comparatively small. Post hoc tests further indicated that cognitive maturity and prior exposure to theoretical subjects were likely contributing factors.

Pearson correlation analysis revealed a moderate positive correlation ( $r = .48, p < .01$ ) between weekly deliberate-practice hours and performance level. Learners who practiced more consistently demonstrated more stable fingering, clearer tone production, and greater confidence. Regression analysis confirmed deliberate-practice hours as a significant predictor of performance proficiency.

Socioeconomic background was also a significant determinant of learning conditions. Learners from higher-income households generally had access to higher-quality instruments, more frequent lessons, and more experienced teachers. Conversely, learners from lower-income backgrounds reported limited access to instructional resources and less stable practice environments.

Satisfaction levels varied across age groups. Minors reported relatively high satisfaction due to parental support and positive teacher feedback. University students expressed lower satisfaction, often seeking more systematic and rigorous instruction. Adults emphasized flexibility and cultural connection in learning, while retirees valued the social and emotional benefits of guzheng study.

### 4. Discussion

The findings demonstrate that individual differences play a significant role in shaping learning outcomes in Yangzhou's guzheng education. Age influences cognitive development, motivation, and learning strategies, requiring teachers to adopt differentiated pedagogical approaches. For minors, structured and guided teaching is effective, while university students may benefit more from analytical and theory-based instruction. Adults, on the other hand, often prioritize cultural appreciation, personal enjoyment, and flexible scheduling.

Socioeconomic disparities emerged as a major factor affecting access to high-quality instruction and instruments. This aligns with cultural capital theory, which suggests that unequal resource

distribution leads to unequal learning outcomes. To mitigate these disparities, public institutions and community centers in Yangzhou could consider expanding free or low-cost programs, instrument libraries, and scholarship opportunities.

The role of deliberate practice also proved crucial. While practice duration alone does not guarantee mastery, consistent and goal-oriented practice showed measurable benefits in technical and expressive abilities. Future research should investigate practice quality through observational studies and practice diaries, as self-reported hours may not fully capture learners' behaviors.

## 5. Conclusion

Yangzhou's guzheng education reflects a rich diversity of learner backgrounds and experiences. By recognizing and accommodating individual differences—including age, socioeconomic status, and practice behaviors—teachers and institutions can design more inclusive and effective instructional models. Addressing structural inequalities and promoting broader access to resources will further support the continued vitality of guzheng culture as an important component of China's intangible cultural heritage.

## 6. Limitations

This study is limited by its cross-sectional design, which prevents causal inference between individual differences and learning outcomes. Additionally, convenience sampling may reduce generalizability, and reliance on self-report data introduces potential biases. Future studies should consider longitudinal designs and incorporate teacher evaluations, performance assessments, and qualitative interviews for a more nuanced understanding of learning trajectories.

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