

A Study on the Effects of Yangqin Music Education on College Students' Self-Efficacy

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Abstract: This study investigated the effects of Yangqin music education on university students' self-efficacy. A total of 100 students from Guangdong completed Kim A-Young's (1997) self-efficacy scale before and after the program. Statistical analyses revealed significant gains in confidence, self-regulation, and task preference. Improvements were greater among female students, music majors, and those with longer music experience. These findings indicate that Yangqin education not only develops artistic skills but also enhances psychological well-being, supporting its role in competence and mental health education in universities. The study confirms that self-efficacy is malleable and can be strengthened through traditional instrumental training.

Keywords: Yangqin Music Education; Self-Efficacy; University Students; Confidence; Self-Regulation

1 Introduction

1.1 Research Necessity and Purpose

This study investigates the role of Yangqin education in enhancing self-efficacy within higher education. Self-efficacy, a central construct in Social Cognitive Theory (Bandura, 1997), is crucial for goal setting, emotional regulation, and persistence. High levels foster resilience and motivation, while low levels are linked to anxiety and burnout (Luszczynska et al., 2020). Strengthening self-efficacy is therefore both theoretically and practically vital. Music education, especially instrumental training, enhances self-efficacy through mastery experiences, feedback, and emotional expression (Zelenak, 2024; Martínez-Castilla et al., 2022). Yet, most studies focus on Western instruments, with limited attention to Chinese traditional instruments. The Yangqin, a hammered dulcimer requiring rhythmic control, coordination, and expression, offers unique artistic, cultural, and psychological benefits, while ensemble performance fosters collaboration. This study examines whether Yangqin instruction can promote confidence, self-regulation, engagement, and cultural identity, positioning it as a culturally grounded intervention that integrates psychological support with cultural transmission. Supported by prior findings (Schiavio et al., 2021; Li & Zhang, 2022; Burton et al., 2020), this research addresses a critical gap in linking music education, self-efficacy, and cultural heritage.

1.2 Research Questions

Q1: To analyze differences in students' self-efficacy before and after Yangqin education.

Q2: To examine intervention effects on sub-factors (confidence, self-regulation, task preference).

Q3: To analyze gender-based differences.

Q4: To analyze differences by academic major.

Q5: To analyze differences by prior music experience.

Through these questions, the study seeks to show that traditional music education can substantively impact learners' psychological and emotional development.

2 Theoretical Background

2.1 Self-Efficacy

Self-efficacy, defined by Bandura (1997) within Social Cognitive Theory, refers to one's belief in the ability to accomplish tasks under challenge. It influences goal setting and persistence, with high levels linked to resilience and low levels to anxiety and poor outcomes (Usher & Pajares, 2018; Zhou et al., 2020). For university students, it is a strong predictor of academic achievement and well-being (Liem et al.,

2021).

Bandura (1997) identified four sources of efficacy—mastery, vicarious experience, verbal persuasion, and affective states. In Yangqin learning, these map onto practice, peer learning, feedback, and performance, shaping students' confidence. Pajares (2009) noted that efficacy is domain-specific, making Yangqin practice a suitable context for its development.

SDT (Deci & Ryan, 1985) emphasizes autonomy, competence, and relatedness as drivers of motivation and efficacy. Building on this, Kim (1997) created the General Self-Efficacy Scale, assessing confidence, self-regulation, and task preference, validated in higher education (Kim & Kim, 2022).

Together, SCT and SDT provide the framework for analyzing how Yangqin music education enhances self-efficacy.

2.2 Yangqin Music Education

The Yangqin, a traditional Chinese hammered dulcimer comparable to the Western santur, is a plucked string instrument that combines striking, plucking, and timbre control. Increasingly included in both specialized and general curricula in Chinese universities, the Yangqin functions not only in professional training but also in aesthetic education and psychological development.

Technically, Yangqin study cultivates rhythm, coordination, and concentration, while providing mastery experiences, peer learning, teacher feedback, and emotional regulation—factors closely tied to self-efficacy. From a psychological perspective, Yangqin education emphasizes emotional expression and self-awareness, supporting stress reduction and cognitive integration.

Universities promote Yangqin education through diverse formats: specialized technical courses (e.g., repertoire and chamber music), ensemble and integrated practice, cultural heritage and outreach activities, reflective aesthetic education, and ensemble-based training. Collectively, these approaches strengthen students' confidence, collaboration, and social self-efficacy, positioning the Yangqin as both an artistic and psychological resource in higher education.

3 Research Method

3.1 Research Participants

This study involved 100 undergraduates from Guangdong universities, balanced by gender, major, and academic year. All participated voluntarily with informed consent, and the study followed ethical standards. Guangdong was selected due to its strong music education system, established Yangqin programs, and diverse student population suitable for comparing majors and non-majors.

3.2 Research Design

A one-group pretest–posttest design was used. Kim's (1997) General Self-Efficacy Scale measured confidence, self-regulation, and task preference before and after an eight-week Yangqin program. Paired t-tests assessed pre–post differences, and two-way ANOVA examined effects of gender, major, and prior music experience. Expert consultation ensured reliability and validity.

To maintain internal validity, no control group was set, but participants refrained from other music training during the intervention. The same instructors, lesson plans, and feedback methods were used throughout.

3.3 Research Instruments

3.3.1 Yangqin Music Education Program

The Yangqin program lasted eight weeks (Weeks 2–7), with two 90-minute sessions each week. The curriculum was structured progressively, moving from basic skills to expressive performance and ensemble collaboration.

In the early stage (Weeks 2–3), students focused on basic performance techniques such as hand posture, striking methods, scales, arpeggios, and rhythm control. These exercises aimed to develop technical accuracy, coordination, and a sense of achievement, thereby strengthening initial confidence and willingness to engage in challenging tasks.

In the middle stage (Weeks 4–5), the emphasis shifted to musical expression. Students practiced interpreting simple melodies, ex-

ploring different performance styles, and managing emotional nuances within repertoire. This process encouraged autonomy, enhanced self-awareness, and promoted emotional regulation through expressive performance.

In the final stage (Weeks 6–7), students participated in ensemble practice, including small-group collaboration and recital preparation. Ensemble activities fostered cooperation, communication, and sensitivity to harmony, while public performance provided mastery experiences that built stage confidence, responsibility, and social self-efficacy.

Overall, the program was designed not only to improve technical skills but also to support psychological development, targeting the key components of self-efficacy: confidence, self-regulation, and task engagement.

3.3.2 Self-Efficacy Measurement Tool

This study used Kim A.Y.'s (1997) General Self-Efficacy Scale, consisting of 24 items across three sub-dimensions: confidence (7 items), self-regulation (12 items), and task preference (5 items). Items were rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), with higher scores indicating stronger self-efficacy. The scale, grounded in Social Cognitive Theory and Self-Determination Theory, has been widely validated in higher education research, demonstrating strong reliability (Cronbach's $\alpha = .86$; Song, 2018). For this study, it was translated and culturally adapted for Chinese students.

3.3.3 Data Analysis Method

Data were analyzed using SPSS 26.0 with descriptive statistics, paired-sample t-tests, and two-way ANOVA. Means and standard deviations of the three subdomains (confidence, self-regulation, task preference) were calculated for pre- and post-tests. Paired-sample t-tests tested overall changes in self-efficacy ($\alpha = .05$), while two-way ANOVA examined effects of gender, major, and music experience. The procedure involved recruiting 100 undergraduates (42 majors, 58 non-majors), obtaining consent, administering pre-tests, conducting Yangqin lessons as the intervention, and completing post-tests, after which all data were statistically analyzed.

4 Research Results

4.1 Basic Information

This study involved 100 undergraduates from Guangdong universities, including 47 males and 53 females. Among them, 42 were music majors and 58 were non-majors. Regarding music learning experience, 20 had none, 25 had less than one year, 30 had one to three years, and 25 had more than three years. This balanced distribution enhanced comparability across gender, major, and music experience, thereby strengthening the validity of subsequent analyses.

4.2 Comparison of Pre- and Post-Intervention Self-Efficacy in Yangqin Music Education

A paired-sample t-test showed that students' overall self-efficacy significantly improved after the intervention ($p < .05$). Factor-specific results further indicated significant gains in confidence, self-regulation, and task preference (<Table1>), confirming the positive effect of Yangqin education on students' self-efficacy.

Table 1. Self-Efficacy by Factor Before and After Yangqin Education

Independent Variable	Time	Mean (M)	Standard Deviation (SD)	Sample Size (N)
Confidence	Pre-test	3.39	0.58	100
Confidence	Post-test	4.13	0.52	100
Self-regulation Ability	Pre-test	3.43	0.56	100
Self-regulation Ability	Post-test	3.97	0.5	100
Preference for Task Challenge	Pre-test	3.45	0.5	100
Preference for Task Challenge	Post-test	4.11	0.5	100

As shown in< Table 1>, confidence, self-regulation, and task preference all improved significantly after the Yangqin intervention ($p < .05$), confirming its positive effect on self-efficacy.

4.3 Comparison of Differences in Self-Efficacy by Gender Before and After Yangqin Music Education

Gender differences in self-efficacy were examined using gender (male, female) and time (pre, post) as independent variables and self-efficacy as the dependent variable. Descriptive statistics and two-way ANOVA tested whether levels differed by gender and across time.

Table 2. Differences in Self-Efficacy Before and After Yangqin Music Education by Gender

Gender	Time	Mean (M)	Standard Deviation (SD)	N
Male	Pre-test	3.40	0.27	47
	Post-test	3.80	0.26	47
Female	Pre-test	3.39	0.29	53
	Post-test	4.11	0.28	53
Total	Pre-test	3.42	0.28	100
	Post-test	4.07	0.29	100

Gender differences in self-efficacy were examined using gender (male, female) and time (pre, post) as independent variables. As shown in <Table 2>, both males and females significantly improved after the intervention, with females showing greater gains. Two-way ANOVA further confirmed significant main effects of gender and pre/post intervention, as well as their interaction (F values = 16.91, 140.69, and 4.15, respectively; all $p < .05$).

4.4 Differences in Self-Efficacy Between Music Majors and Non-Majors

This section compares self-efficacy changes between music majors and non-majors. Independent variables were major (music, non-music) and time (pre, post), with self-efficacy as the dependent variable. Descriptive statistics and two-way ANOVA tested major-based differences before and after the intervention.

Table 3. Self-Efficacy by Academic Major Background (Pretest vs. Posttest)

Independent Variable	Mean	Standard Deviation	N
Music Major (Pre-test)	3.62	0.46	42
Music Major (Post-test)	4.12	0.44	42
Non-Music Major (Pre-test)	3.59	0.43	58
Non-Music Major (Post-test)	3.91	0.42	58

As shown in <Table 3>, self-efficacy increased significantly for both groups, but gains were larger for music majors (3.62 → 4.12) compared with non-majors (3.59 → 3.91). Two-way ANOVA confirmed significant main effects of major and pre/post intervention, as well as a significant interaction (F = 11.31, 122.61, and 3.45; all $p < .05$), indicating that music majors benefited more from the Yangqin program.

4.5 Self-Efficacy Differences by Music Experience (Pre–Post Intervention)

Self-efficacy was analyzed by music learning experience (none, <1 year, 1–3 years, >3 years) before and after the intervention.

Table 4. Self-Efficacy by Music Learning Experience (Pre–Post)

Independent Variable	Time	Mean	Standard Deviation	Number of Cases
None	Pre-test	3.60	0.48	20
	Post-test	3.85	0.50	20
Less than 1 year	Pre-test	3.70	0.52	25
	Post-test	3.95	0.48	25
1–3 years	Pre-test	3.80	0.50	30
	Post-test	4.10	0.47	30
More than 3 years	Pre-test	3.95	0.45	25
	Post-test	4.30	0.44	25

As shown in <Table 4>, all groups improved in self-efficacy after the intervention. Gains were modest among students with little or no

prior experience, but strongest among those with more than three years of training (3.95 → 4.30). Two-way ANOVA further confirmed a significant main effect of time and a significant interaction between music experience and intervention ($F = 9.12$ and 3.01 , respectively; both $p < .05$), indicating that longer music experience amplified the benefits of Yangqin education.

5 Conclusion and Suggestions

This study examined the impact of Yangqin education on 100 Guangdong university students by comparing pre- and post-intervention scores. Results showed a significant increase in self-efficacy (3.42 → 4.07, $p < .05$), consistent with Bandura's (1997) theory and prior findings on the role of mastery experiences and feedback (Zelenak, 2024; Burton et al., 2020). All three sub-dimensions—confidence, self-regulation, and task preference—improved, with the largest gain in task preference, reflecting Kim's (1997) scale and the regulatory benefits noted by Martínez-Castilla et al. (2022).

Gender analysis revealed greater gains among female students (Schiavio et al., 2021; Zhou et al., 2020). Music majors improved more than non-majors, aligning with Li and Zhang (2022) and Pajares's (2009) domain-specific self-efficacy. Longer music experience also yielded greater gains, supporting Zelenak's (2024) claim of cumulative effects.

Overall, Yangqin education enhanced confidence, self-regulation, task engagement, and cultural identity, highlighting its psychological and cultural value. However, the study was limited to a short-term intervention and a single instrument; future research should adopt longitudinal designs and broader samples to clarify mechanisms.

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