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Factors Impacting Students' Satisfaction with Chorus Courses: A Case Study of a Comprehensive University in Guangxi, China

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Abstract

Purpose: This study examines factors influencing students' satisfaction with choir courses at a comprehensive university in Guangxi, China. **Research design, data and methodology:** A mixed-methods design was employed, structured across three stages: pre-IDI, IDI, and post-IDI, based on the Intervention Design and Implementation (IDI) framework. Content validity was confirmed through expert review, and a pilot test assessed reliability. Data from 90 students were analyzed using multiple linear regression to examine six factors: teachers' competence, teaching methods, teaching staff, teachers' reliability, learning outcomes, and helpfulness. Qualitative interviews with teachers and students informed the 12-week IDI phase. Paired-sample t-tests were conducted to compare pre- and post-intervention outcomes. **Results:** Teachers' competence, teaching staff, reliability, and helpfulness significantly influenced satisfaction. Teaching methods and learning outcomes were not significant predictors. However, post-intervention results showed marked improvement across all variables, including those initially non-significant. **Conclusions:** The findings highlight that well-structured, student-centered interventions can meaningfully enhance student satisfaction, even for factors previously considered less impactful. This study offers practical insights for improving music education through faculty development, collaborative instruction, and support mechanisms. It also contributes to research on intervention-based approaches in arts education.

Keywords: Student Satisfaction, University Student, Chorus Courses, Guangxi, Intervention Design and Implementation

JEL Classification Code: A20, D91, I23, O30, P46

1. Introduction

In comprehensive universities, music programs aim to cultivate application-oriented professionals with strong musical literacy and specialized competencies. These graduates are expected to contribute to performance, teaching, and research across cultural organizations and educational institutions. Among the core components of the music curriculum, choral courses play a critical role in enhancing students' musical perception, ensemble coordination, and aesthetic sensibilities. Furthermore, they serve as an essential medium for advancing the goals of aesthetic education within higher education settings. As Bresler (2002) argues, arts education should extend beyond the acquisition of technical skills to encompass the integration of cognitive, emotional, and social development, a vision well-reflected in choral instruction.

Despite the widely acknowledged educational value of choral courses, there remains a lack of systematic empirical research exploring student satisfaction within this domain. Most existing studies focus on non-formal or extracurricular music education, with limited attention given to formal choral instruction in university contexts. For instance, Barrett and Zhukov (2022) investigated the learning experiences of young participants in a non-formal choral program and emphasized the absence of student

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perspectives in music education research. This gap highlights the need for empirical evaluation of student satisfaction in formal university-based choral courses.

This study directly addresses this gap by investigating which instructional and contextual factors most influence undergraduate students' satisfaction with choral courses at Guangxi University. Specifically, it aims to assess the effects of teacher competence, teaching methods, teacher reliability, teaching staff quality, learning outcomes, and peer support on students' satisfaction levels.

A mixed-method approach, combining quantitative data collection with qualitative insights, is employed to offer a holistic understanding of these relationships. The study's primary contribution lies in identifying actionable factors that influence satisfaction in formal choral education, an area underrepresented in prior research. By grounding the findings in both empirical analysis and participant perspectives, the research provides a practical framework for improving choir education quality.

Furthermore, this study contributes to the growing discourse on student-centered music pedagogy by demonstrating the impact of intervention-based strategies in enhancing course satisfaction. Its results offer concrete implications for curriculum reform, faculty development, and student engagement practices in music programs at comprehensive universities.

2. Literature Review

2.1 Students' Satisfaction (SA)

In marketing, satisfaction is defined as a judgment that a product or service delivers a pleasurable level of consumption-related fulfillment (Reynoso, 2010). Applied to education, particularly from the Student-as-Customer (SAC) perspective, satisfaction reflects the gap between students' expectations and their perceived educational experiences (Fernandes et al., 2013).

Elliott and Shin (2002) and Negm (2023) described student satisfaction as the result of academic, social, physical, and spiritual experiences that shape students' overall evaluation of their education. This concept blends emotional and cognitive responses to various aspects of learning, including classroom interactions, instructional quality, and the broader educational environment.

Maamari and Majdalani (2019) further supported this view by applying customer satisfaction models from the service industry to higher education. They emphasized that student satisfaction encompasses both emotional reactions and evaluative judgments of educational services.

2.2 Teachers' Competence (TC)

Teachers' competence plays a crucial role in shaping students' learning experiences and satisfaction. Bisschoff and Grobler (1998) defined it through elements such as classroom environment, professional commitment, reflection, and leadership. Roelofs and Sanders (2007) categorized it into traits, knowledge, behavior, decision-making, and the ability to foster student learning.

Zhumash et al. (2021) emphasized that teachers need a combination of knowledge, skills, attitudes, and understanding to effectively meet professional demands and positively influence student outcomes. Fauth et al. (2019) found that teacher competence enhances students' interest and conceptual understanding.

Socioemotional competence also matters. Marques et al. (2021) noted that emotionally skilled teachers create supportive environments that improve student satisfaction. Obied and Alajmi (2024) showed that pedagogical, technological, evaluative, and interpersonal skills significantly shape students' perceptions of teaching quality and satisfaction. Similarly, Oliso et al. (2024) identified teacher competence as a core aspect of academic service quality, directly linked to improved student satisfaction in higher education.

These findings highlight that teacher competence is a key driver of student satisfaction, particularly in performance-based courses like choral instruction. Based on this, the following hypothesis is proposed:

H1: Teachers' competence (TC) has a significant influence on students' satisfaction.

2.3 Teaching Methods (TM)

Teaching methods are structured instructional strategies that promote student engagement and support learning goals through teacher-student interaction (Juuti et al., 2010). In music education, culturally relevant pedagogy has been shown to enhance student interest and participation. Gurgel (2023) emphasized that using culturally familiar content and encouraging student input fosters a more inclusive and motivating environment.

Technological advancements have further enriched teaching practices. Steven et al. (2024) found that digital tools, including online platforms and virtual performances, increase interactivity and motivation, complementing traditional approaches and enhancing student satisfaction.

Ko (2022) showed that Problem-Based Learning improves satisfaction by promoting teamwork and self-directed learning, supported by teacher guidance. Similarly, Chen (2025) reported that student-centered methods that incorporate personalization, collaboration, and technology lead to higher satisfaction than traditional methods.

These findings suggest that effective and engaging teaching methods significantly influence students' satisfaction. Based on this, the following hypothesis is proposed:

H2: Teaching methods (TM) have a significant influence on students' satisfaction.

2.4 Teaching Staff (TS)

Teaching staff refers to academic personnel at various ranks who contribute to both knowledge transmission and the development of student competencies in higher education (Rieckmann, 2018). Their role extends beyond teaching to include fostering inclusive learning and supporting student well-being.

Pirttimaa et al. (2021) emphasized that collaboration among teaching staff, through coordination, cooperation, and reflective communication, improves teaching quality and supports students with diverse needs, particularly in inclusive settings. Similarly, Payne (2022) found that improving mental health literacy and providing training for teaching staff can enhance their ability to support students facing psychological challenges.

Al Hassani and Wilkins (2022) noted that teaching competence and staff support are key drivers of student satisfaction. However, their study also suggested that institutional reputation and student identification with the university may have an even stronger influence, indicating that teaching staff contribute indirectly to overall student perceptions. In the context of blended learning, Bouranta et al. (2024) identified both instructional quality and online engagement, facilitated by teaching staff, as important factors in student satisfaction.

These findings suggest that teaching staff influence student satisfaction through direct instructional support and by shaping broader learning experiences within the institution. Based on this, the following hypothesis is proposed:

H3: Teaching staff (TS) have a significant influence on students' satisfaction.

2.5 Teachers' Reliability (TR)

Teachers' reliability refers to their ability to deliver educational services accurately, consistently, and dependably. According to Twum and Peprah (2020), this includes resolving student issues promptly, maintaining high-quality instruction, and meeting students' expectations over time. Reliability, as a key dimension of service quality, directly influences student satisfaction and institutional reputation (Parasuraman et al., 1988; Twum & Peprah, 2020).

Manaf et al. (2013) described service quality in terms of academic staff and teaching delivery. Teacher reliability is reflected in their attitudes, responsiveness, and effectiveness in addressing student needs. Similarly, Khoo et al. (2017) found that the gap between students' expectations and their actual experience affects satisfaction, with reliability being a critical factor influencing future loyalty and willingness to engage with the institution.

Abu-Rumman and Qawasmeh (2022) reported that teacher reliability positively impacts international student satisfaction, highlighting the value of consistency and academic accountability. Likewise, Bui et al. (2023) identified teacher reliability as the strongest predictor of student satisfaction in a Vietnamese public university, explaining up to 75 percent of the variance. Their findings suggest that consistency and dependability in teaching delivery are essential for improving satisfaction and loyalty.

Together, these studies confirm that teacher reliability plays a vital role in shaping students' educational experiences. Based on this, the following hypothesis is proposed:

H4: Teachers' reliability (TR) has a significant influence on students' satisfaction.

2.6 Learning Outcomes (LO)

Learning outcomes describe what students are expected to achieve upon completing a course. They focus on the knowledge, skills, and attributes students gain, rather than the teaching process itself (El Marsafawy et al., 2022).

Tam (2014) emphasized that learning outcomes are central to student-centered education, reflecting a shift from content delivery to student achievement. Effective implementation requires alignment between objectives, instruction, and assessment. However, challenges such as vague definitions and fragmented learning may arise, calling for ongoing reflection and adaptability.

Building on this, Wang et al. (2024) found that Social Innovation Education enhances sustainability-related learning outcomes by increasing students' intrinsic and prosocial motivation, highlighting the importance of psychological factors in achieving meaningful learning.

In technology-enhanced learning contexts, Sharma and Gupta (2023) showed that problem-focused coping improves both satisfaction and learning outcomes, while emotion-focused coping has the opposite effect. Satisfaction was also found to mediate academic performance and continued use of learning technologies. Similarly, Nikou and Maslov (2023) demonstrated that satisfaction with digital learning is influenced by factors such as online community, course design, and IT accessibility, all of which impact students' academic outcomes.

These studies indicate that well-defined and effectively supported learning outcomes contribute significantly to student satisfaction. Based on this understanding, the following hypothesis is proposed:

H5: Learning outcomes (LO) have a significant influence on students' satisfaction.

2.7 Helpfulness (H)

Perceived helpfulness refers to students' evaluation of the support and guidance they receive during the learning process. Das et al. (2019) found that high-quality pre-class learning videos enhance students' understanding, engagement, and overall learning outcomes, increasing their perception of helpfulness.

Brooks et al. (2021) emphasized that student-centered feedback strategies significantly improve academic performance when students perceive the feedback as helpful. Clarifying learning goals, focusing on the process, and offering constructive suggestions were particularly effective in promoting self-regulated learning.

Jeng et al. (2024) highlighted the interpersonal dimension of helpfulness in online learning. Their study showed that responses using a friendly tone, including greetings and personalized comments, increased perceived helpfulness and promoted a stronger sense of connection. In contrast, neutral or self-focused responses were seen as less helpful.

Nikolić et al. (2020) used sentiment analysis to show that students' perception of helpfulness directly influences satisfaction and serves as a key area for improving teaching quality. Similarly, Gomes and Ma (2020) found that when students' experiences exceeded expectations, they rated the course as more helpful, reinforcing the connection between helpfulness and satisfaction.

These findings suggest that perceived helpfulness, whether through instructional content or interpersonal interaction, plays a significant role in shaping students' satisfaction. Based on this, the following hypothesis is proposed:

H6: Helpfulness (H) has a significant influence on students' satisfaction.

3. Research Methods and Materials

3.1 Research Framework

The conceptual framework in Figure 1 is built upon theoretical foundations from Das et al. (2019), Darawong and Widayati (2022), and Marzo-Navarro et al. (2005), each contributing key insights to the study.

Das et al. (2019) highlighted the role of helpfulness and instructional quality in enhancing student engagement and satisfaction, supporting the inclusion of helpfulness and learning outcomes in the model.

Darawong and Widayati (2022) emphasized teacher-related service quality, including competence, methods, and reliability, which directly inform the teaching-related constructs in this framework.

Marzo-Navarro et al. (2005) applied customer satisfaction theory to higher education, reinforcing the use of student satisfaction as a key outcome influenced by multiple service dimensions.

Together, these models support the selection of six factors, teachers' competence, teaching methods, teaching staff, teachers' reliability, learning outcomes, and helpfulness, as predictors of students' satisfaction with choral courses.

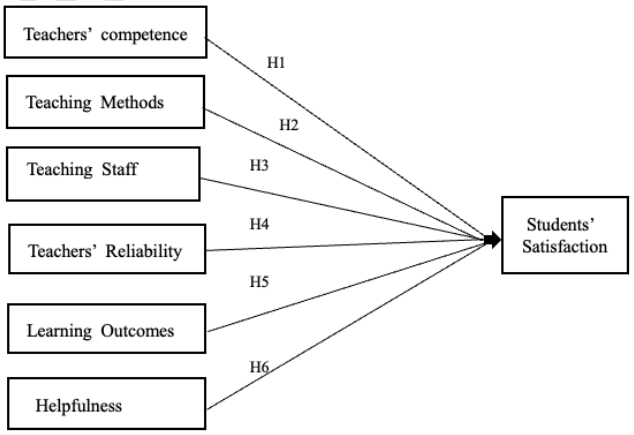

Figure 1: Conceptual Framework

3.2 Research Methodology

The research process was conducted in four sequential stages to evaluate the conceptual framework and test the proposed hypotheses.

In the first stage, data were collected from the entire research population (n = 90) through a structured survey. A stratified random sampling method was applied to ensure representation across different academic years and choir experience levels within the Department of Music. Multiple linear regression analysis was used to test the six hypotheses, with statistical significance determined at the $p < 0.05$ level. Hypotheses that met this threshold were accepted, while those that did not were rejected.

In the second stage, a pre-intervention assessment was conducted with 30 students, who were randomly selected from the original sample. These participants voluntarily agreed to continue in the intervention phase, representing a

manageable subset for sustained engagement across 12 weeks.

In the third stage, Intervention Design and Implementation (IDI) activities were carried out with the same 30 students. The structure and content of these activities were informed by qualitative data obtained from semi-structured interviews with six teachers and twelve students. These qualitative insights helped contextualize student needs and guided the customization of the intervention to address issues such as teaching clarity, instructor responsiveness, and peer collaboration.

In the final stage, a post-intervention survey was administered to these participants. Pre- and post-intervention data were compared using a paired-sample t-test to evaluate the effectiveness of the IDI intervention.

The integration of qualitative and quantitative methods allowed for a deeper understanding of the findings, where qualitative perspectives enriched the interpretation of statistical trends and informed practical adjustments to instructional practices.

Throughout all stages of the study, ethical considerations were strictly observed. Participants were informed of the research objectives and provided voluntary, informed consent. Confidentiality and anonymity were maintained, and all data were used solely for research purposes. The study adhered to institutional research ethics guidelines to ensure the rights and well-being of participants were protected.

3.3. Research Population, Sample Size, and Sampling Procedures

3.3.1 Research Population

The research population consists of undergraduate students enrolled in the Music Department at the Academy of Arts, Guangxi University. According to institutional data, approximately 105 students are enrolled in chorus classes. This study includes 90 valid responses, representing about 85% of the total population.

The participants come from three distinct majors: choral conducting, piano, and vocal performance. Chorus courses are a compulsory component of the curriculum for all three majors and are taken over four semesters during the four-year undergraduate program. After data collection, all responses were reviewed, and 90 were confirmed to meet the inclusion criteria for analysis.

3.3.2 Sample Size

A pilot survey was first conducted with 30 randomly selected students to assess the reliability of the research instrument. For the main study, data were collected from 90 students, representing approximately 86% of the total population of 105 enrolled in chorus classes. All responses were valid and used in the multiple linear regression analysis to test the proposed hypotheses.

Given the small population size, this sample is considered sufficient. According to Krejcie and Morgan (1970), for a population of 105, a sample of at least 83 is adequate at a 95% confidence level. Similarly, Israel (1992) suggests that when the population is fewer than 200, sampling over 80% yields reliable results. Therefore, the sample of 90 students is appropriate for this study.

Additionally, 30 students from this group voluntarily participated in the IDI intervention stage to evaluate its effect on satisfaction and learning outcomes.

However, the use of a single university sample may limit the generalizability of findings to other institutional or regional contexts. Furthermore, while random sampling was applied, voluntary participation in the IDI phase may introduce self-selection bias, as more motivated or engaged students could be overrepresented.

3.3.3 Sampling Procedure

The researcher applied different sampling procedures at three stages of the study:

Sampling 1: Pilot Survey and Instrument Test

A simple random sample of 30 students was selected to complete the pilot survey. Their feedback was used to assess the clarity and reliability of the questionnaire.

Sampling 2: Main Survey for MLR Analysis

A total of 90 students from different academic years in the Department of Music were surveyed. Questionnaires were distributed via WeChat groups, and all 90 valid responses were used for multiple linear regression analysis to test the research hypotheses.

Sampling 3: IDI Intervention

From the initial sample, 30 students were randomly selected and voluntarily agreed to participate in the Intervention Design Implementation (IDI) phase, which included both pre- and post-intervention assessments.

3.4 Research Instruments

3.4.1 Questionnaire Design

The survey questionnaire was developed through the following three steps:

Step 1: Source Identification

The questionnaire items were adapted from three peer-reviewed studies: Das et al. (2019), Darawong and Widayati (2022), and Marzo-Navarro et al. (2005).

Step 2: Contextual Adaptation

The items were revised to reflect the academic background and learning environment of the research participants, who were undergraduate music students at Guangxi University.

Step 3: Content Validation

The questionnaire was evaluated using the Item-Objective Congruence (IOC) method to ensure clarity, relevance, and content validity.

3.4.2 Questionnaire Components

The survey questionnaire consisted of three main parts:

Part 1: Screening and Demographic Questions

This section included screening questions to ensure participants met the criteria for inclusion in the study. It also collected basic demographic information such as gender, age, and grade.

Part 2: Measurement of Variables

This section contained items measuring the study's key constructs, including six independent variables, teachers' competence, teaching methods, teaching staff, teachers' reliability, learning outcomes, and helpfulness, as well as the dependent variable, students' satisfaction.

Part 3: Pre-survey Assessment

This section was used to assess the initial levels of both independent and dependent variables among the 90 students prior to any intervention.

3.4.3 IOC Results

To ensure content validity, the researcher conducted an Item-Objective Congruence (IOC) evaluation with three senior experts in choral studies. Each expert, from a different university, had extensive experience in both choral performance and choral education. The panel included two professors and one associate professor.

During the IOC process, each questionnaire item was rated as "+1" (clearly congruent), "0" (uncertain), or "-1" (clearly incongruent). Following the scoring, three items received IOC values below the commonly accepted threshold of 0.67 and were removed. The remaining items, which scored above 0.67, were retained for use in the final survey (Turner & Carlson, 2003).

3.4.4 Reliability and Validity

A pilot survey was conducted with 30 randomly selected students who completed the questionnaire and provided feedback on its clarity and relevance. Following this, the researcher assessed the internal consistency reliability of each construct using Cronbach's alpha.

According to Ueno and Sekaran (1992), a Cronbach's alpha value of 0.60 or above is considered acceptable for early-stage research. The results of the pilot test, as shown in Table 1, indicate that all constructs met or exceeded this threshold, confirming the reliability of the instrument.

Table 1: Pilot Test Result (n = 30)

Variable	Source of Questionnaire (Measurement Indicator)	No. of Items	Cronbach's Alpha	Strength of Association
TC	Darawong and Widayati (2022)	4	0.772	Acceptable
TM	Marzo-Navarro et al. (2005)	4	0.764	Acceptable
TS	Marzo-Navarro et al. (2005)	2	0.722	Acceptable
TR	Darawong and Widayati (2022)	4	0.831	Good
LO	Darawong and Widayati (2022)	2	0.719	Acceptable
H	Das et al. (2019)	2	0.666	Acceptable
SS	Darawong and Widayati (2022)	5	0.817	Good

Source: Created by the author

4. Results and Discussion

4.1 Demographic Profile

The researcher presented the demographic profile of the entire research population (n = 90), followed by a subset of students (n = 30) who participated in the IDI intervention, as shown in Table 2.

In both groups, the majority of participants were female and between 19 and 22 years of age. Most students were in their second or third year of study. Additionally, there was a balanced distribution across the three music majors: vocal performance, piano, and choir. This overall composition reflects a diverse yet representative sample of the undergraduate music student population at Guangxi University.

Table 2: Demographic Profile

Entire Research Population (n=90)		Frequency	Percentage
Gender	Male	35	38.9
	Female	55	61.1
Age	18 years old	28	31.1
	19-20 years old	30	33.4
	21-22 years old	28	31.1
	23 years old and above	4	4.4
Grade	First Grade	28	31.1
	Second Grade	30	33.4
	Third Grade	28	31.1
	Fourth Grade	4	4.4
Major	Piano	30	33.3
	Vocal	34	37.8
	Choir	26	28.9
IDI Participants (n=30)		**Frequency**	**Percentage**
Gender	Male	10	33.3
	Female	20	66.7
Age	18 years old	2	6.7
	19-20 years old	14	46.7
	21-22 years old	12	40.0

Entire Research Population (n=90)		Frequency	Percentage
	23 years old and above	2	6.6
Grade	First Grade	2	6.7
	Second Grade	14	46.7
	Third Grade	12	40.0
	Fourth Grade	2	6.6
Major	Piano	10	33.3
	Vocal	12	40.0
	Choir	8	26.7

4.2 Results of Multiple Linear Regression

The researcher conducted a multiple linear regression (MLR) analysis using data from 90 valid survey responses to test the six proposed hypotheses. Each hypothesis was developed to examine the influence of independent variables on the dependent variable, Students' Satisfaction (SS).

The results of the Variance Inflation Factor (VIF) analysis indicated no multicollinearity issues, as all VIF values were below the recommended threshold of 5 (Hair et al., 1995). The model's R-squared (R^2) value was 0.257, suggesting that the six independent variables collectively explained 25.7% of the variance in students' satisfaction.

Table 3: The MLR Results on Students' Satisfaction (n = 90)

Variable	Standardized Coefficients Beta Value	t-value	p-value	VIF	R^2
Teachers' Competence (TC)	0.201	2.031	0.045*	1.09	0.257
Teaching Methods (TM)	-0.095	-0.957	0.341	1.11	
Teaching Staff (TS)	0.231	2.426	0.017*	1.01	
Teachers' Reliability (TR)	0.200	2.091	0.040*	1.02	
Learning Outcomes (LO)	0.076	0.781	0.437	1.05	
Helpfulness (H)	0.330	3.381	0.001*	1.07	

Note: p-value <0.05*

The multiple linear regression analysis in Table 3 revealed that four of the six independent variables had a statistically significant positive effect on students' satisfaction. Specifically, Teachers' Competence (H1), Teaching Staff (H3), Teachers' Reliability (H4), and Helpfulness (H6) were found to significantly influence the dependent variable, with p-values below the 0.05 threshold. These results suggest that students' satisfaction is strongly associated with the quality of teaching personnel and the perceived support they receive throughout the learning process.

While Teaching Methods (H2) and Learning Outcomes (H5) were not statistically significant in the MLR model, they were retained for further analysis in the IDI phase. This decision was made to allow for a more comprehensive evaluation of all initially proposed variables in response to the intervention. Therefore, all seven variables, including the two previously non-significant ones, were included in the subsequent paired-sample t-test to assess changes before and after the IDI intervention.

A set of five new hypotheses was developed to evaluate the effectiveness of the IDI intervention through pre- and post-comparisons. These hypotheses are outlined as follows:

H7: There is a significant difference in Teachers' Competence between the Pre-IDI and Post-IDI stages.

H8: There is a significant difference in Teaching Staff between the Pre-IDI and Post-IDI stages.

H9: There is a significant difference in Teachers' Reliability between the Pre-IDI and Post-IDI stages.

H10: There is a significant difference in Helpfulness between the Pre-IDI and Post-IDI stages.

H11: There is a significant difference in Students' Satisfaction between the Pre-IDI and Post-IDI stages.

4.3 IDI Intervention Stage

The Intervention Design Implementation (IDI) phase was carried out over a period of 12 weeks and was informed by both quantitative and qualitative data collected during the pre-IDI stage. The main goal of this intervention was to enhance student satisfaction with the chorus course at Guangxi University.

As illustrated in Figure 2, the intervention was divided into three chronological stages. These structured activities were designed to create a more engaging and supportive learning environment, aligning with the factors previously identified as significantly influencing student satisfaction.

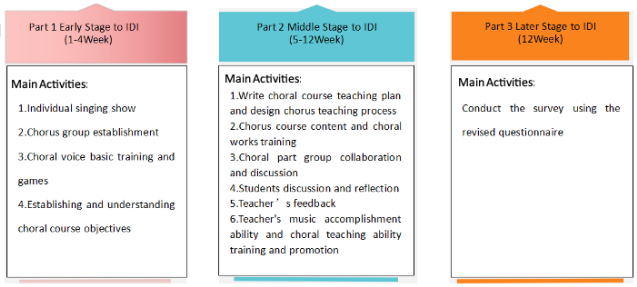

Figure 2: IDI Activities

4.4 Results Comparison between Pre- and Post-IDI

To assess the effectiveness of the IDI intervention, a paired-sample t-test was conducted on all seven variables, including the dependent variable, Students' Satisfaction (SS). The test compared mean scores before and after the intervention among the 30 participating students. Table 4 presents the results of the analysis.

Table 4: Paired-sample T-test Results (n = 30)

Variable		Mean	SD	t-value	p-value
Teachers' Competence (TC)	Pre-IDI	4.00	0.584	-3.99	< .001
	Post-IDI	4.24	0.344		
Teaching Methods (TM)	Pre-IDI	2.85	0.491	-3.91	< .001
	Post-IDI	4.30	0.338		
Teaching Staff (TS)	Pre-IDI	2.90	1.095	-4.05	< .001
	Post-IDI	4.40	0.450		
Teachers' Reliability (TR)	Pre-IDI	2.80	0.580	-5.34	< .001
	Post-IDI	4.55	0.401		
Learning Outcomes (LO)	Pre-IDI	2.85	0.816	-4.07	< .001
	Post-IDI	4.20	0.598		
Helpfulness (H)	Pre-IDI	2.75	0.795	-3.94	< .001
	Post-IDI	4.20	0.373		
Students' Satisfaction (SS)	Pre-IDI	2.75	0.591	-5.37	< .001
	Post-IDI	4.60	0.374		

The analysis revealed statistically significant improvements across all seven variables after the IDI intervention. Most notably, students' satisfaction increased substantially from a mean of 2.75 to 4.60 ($p < .001$), confirming the overall effectiveness of the intervention in enhancing students' learning experiences in the choral course. This result aligns with previous literature suggesting that structured and student-centered pedagogical changes contribute positively to learner satisfaction (Marzo-Navarro et al., 2005).

Significant gains were also observed in teachers' reliability, teaching staff, teachers' competence, and helpfulness, supporting theories that emphasize the central role of instructor quality and peer interaction in influencing students' perceptions of course value (Barrett & Zhukov, 2022; Bresler, 2002). These factors are consistent with the affective and interpersonal domains of satisfaction, where clarity, trust, and support strongly shape student outcomes.

Interestingly, variables such as teaching methods and learning outcomes, which were not statistically significant in the earlier regression analysis, also showed significant improvement in the post-IDI phase. This discrepancy suggests that while students may not have initially perceived these elements as directly contributing to their satisfaction, the intervention helped them recognize the relevance and structure of instructional practices. One possible explanation is that the redesigned methods became more transparent or engaging, leading to delayed attitudinal shifts that emerged only after active participation in the restructured learning process.

These findings suggest that student satisfaction in music education is a dynamic construct, influenced not only by static perceptions of teaching input but also by how students experience and interpret these inputs over time. This highlights the importance of longitudinal interventions and reflective evaluation in aesthetic education, particularly in disciplines like choral music where experiential engagement is key.

5. Conclusions and Recommendation

5.1 Conclusions

This study examined the factors influencing undergraduate students' satisfaction with choral courses at Guangxi University. The six factors included teacher competence, teaching methods, teaching staff, teacher reliability, learning outcomes, and helpfulness. A mixed-method approach was used. This included a survey of 90 students and a 12-week intervention with 30 students to assess changes in satisfaction.

Four factors had a significant positive influence on satisfaction. These were teacher competence, teaching staff, teacher reliability, and helpfulness. These findings are in line with previous research that highlights the importance of teacher quality and emotional support in music education. However, teaching methods and learning outcomes were not significant in the initial regression analysis. One possible reason is that students may not immediately recognize these aspects in traditional, teacher-led choral classes. They may not be aware of how these methods or goals affect their learning experience.

The intervention phase showed a different result. After 12 weeks of structured, student-centered activities, all variables showed significant improvement. Students responded positively to collaborative rehearsals, group discussions, and feedback. This suggests that even variables that were initially seen as less important can become more meaningful when teaching methods are adapted to support student engagement. These results show that student satisfaction is not fixed. It can be improved with targeted instructional changes.

This study makes two important contributions. Theoretically, it shows that satisfaction in choral education depends on both instructional quality and emotional support. It expands current research by showing how these factors interact in performance-based subjects. Practically, it provides useful strategies for educators. Improving teacher communication, building trust, and designing student-centered activities can enhance satisfaction and learning outcomes.

There are some limitations. The study focused on a single university and had a limited sample size. Future research should test this framework in different cultural and institutional settings. It would also be useful to explore long-term effects of interventions on motivation and performance.

In summary, this study offers a new perspective on how to improve satisfaction in choral courses. It shows that instructional design, when combined with strong teacher-student relationships, can lead to more meaningful learning experiences in music education.

5.2 Recommendations

Based on the findings of this study, the following recommendations are proposed for enhancing student satisfaction in choral education within higher education settings.

1. For Higher Education Institutions (Practical Implications)

First, institutions should provide regular professional development opportunities for choral instructors. These may include workshops focused on enhancing pedagogical skills, communication, educational psychology, and musical expertise. Particular attention should be given to developing teachers' competence and reliability through scenario-based training that improves their responsiveness to students' needs.

Second, a faculty mentorship system is recommended. Pairing experienced instructors with new faculty members can strengthen collaboration, knowledge-sharing, and teaching consistency within the department.

Third, institutions should implement structured feedback mechanisms, such as anonymous mid-semester student evaluations. These tools can help instructors make timely instructional adjustments and align teaching practices with student expectations and curriculum goals. Linking student satisfaction metrics, moderately and thoughtfully, to faculty evaluations may also promote continuous teaching improvement.

2. For Curriculum Design (Pedagogical Innovations)

To enhance engagement and satisfaction, curriculum planners should adopt student-centered approaches in choral courses. These may include collaborative group activities, personalized guidance, and peer feedback structures, all of which can improve students' perceptions of teacher support and helpfulness.

Introducing interdisciplinary choir projects such as combining music with technology or psychology can provide creative opportunities for students and allow instructors to demonstrate broader professional competence. Additionally, incorporating standardized reliability practices, such as clearly written syllabi, transparent grading criteria, and consistent classroom expectations, can foster student trust and reinforce perceptions of faculty reliability.

3. For Policy Makers (Institutional Support)

Recognizing the importance of choral education in promoting aesthetic development, institutions should increase investment in resources. This includes constructing specialized rehearsal spaces, funding teaching assistants or external specialists, and optimizing the structure of instructional teams.

Universities are also encouraged to support faculty participation in academic exchange programs, both nationally and internationally, to update professional and pedagogical skills. To further support high-quality instruction, faculty evaluation systems should be revised to include indicators of teaching interaction quality, student engagement, and support, alongside traditional academic performance measures.

5.3 Limitation and Further Study

While this study provides meaningful insights into the factors influencing students' satisfaction with choral courses in higher education, several limitations should be acknowledged. These limitations also offer valuable directions for future research:

Sample Scope: The study focused solely on undergraduate music students at Guangxi University. The findings may not generalize across other disciplines or institutions. Future studies should include a broader and more diverse sample across regions and academic fields to enhance external validity.

Methodological Approach: Despite employing a rigorous mixed-methods design, the study leaned heavily on quantitative analysis. Future research should integrate richer qualitative methods, such as interviews, focus groups, or classroom observations, to capture deeper insights into students' perceptions and experiences.

Intervention Duration: The 12-week IDI intervention may not be sufficient to assess long-term impact. Longitudinal studies are recommended to evaluate the sustained effectiveness of interventions over time.

Variable Scope: The study examined six specific variables related to teaching and support. Future research should explore additional factors such as curriculum structure, students' musical backgrounds, institutional culture, personal motivation, and socio-economic conditions to build a more holistic understanding.

Self-reported Data: Reliance on self-reported survey responses and interviews may introduce biases such as social desirability or recall errors. Future studies could incorporate more objective data collection tools, such as anonymous digital feedback, direct observations, or institutional academic performance records.

Theoretical Extensions: Future research should also explore mediating variables (e.g., classroom climate, student self-efficacy) and conduct comparative studies across different academic domains (e.g., arts vs. STEM). Mixed-methods and interdisciplinary approaches are recommended to yield broader and more comprehensive insights.

While this study offers valuable contributions to the understanding of student satisfaction in choral education, addressing these limitations in future research will help deepen theoretical insights and enhance practical applications in music and arts education.

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