The Development of Applied Piano Teaching Method to Cultivate Undergraduate Students' Ability in Music Learning Skills

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Abstract: The aims of this study are to study a problem of piano teaching of the University, develop piano teaching from various style and evaluate students' achievement after teaching by the development of beginning piano teaching for music major student. This study employs a mixed-methods approach, combining literature review, semi-structured interviews, participatory observation, and expert evaluation to investigate music teaching strategies and music education at Shenzhen University. The results show that the new applied piano pedagogy, the personalized teaching case analysis becomes a key component of the teaching process, and its main goal is to ensure that each student receives adequate attention and support for their unique learning needs and ability levels. The core idea of personalized teaching is to combine the learning process with the unique characteristics of each student, thereby creating a learning environment suitable for them in order to achieve the best teaching results.

Keywords: Applied Piano Teaching Method, Music Learning Skills, Cultivation

Introduction

Piano instruction, one of the foundational courses in music education, gives pupils training in expressive force, artistic sense, music theory, and other abilities that are useful in developing their musical literacy and ability. Piano instruction is typically included as one of the mandatory courses in the teaching syllabus for undergraduate musical aptitude, along with music performance, music theory, and music history. The goals of these courses are to assist students develop a strong foundation in music, enhance their ability to perform and express themselves musically, and broaden their knowledge of music. Another key element of the musical training program is the piano curriculum. Students can learn the abilities and information required to become skilled musicians through piano instruction, including composition, performance, and teaching. Furthermore, teaching pupils to play the piano can develop their exceptional creative literacy and provide a strong basis for their future musical endeavors.

Teaching children to play the piano is an essential component of music education, and it should focus on their whole growth as well as their skill development. In order to fulfill the demands of the globalization era, piano instruction should specifically be student-oriented, focus on students' personal growth and self-realization, and simultaneously foster students' feeling of social responsibility and cross-cultural communication ability. In addition to fostering students' musical abilities and expression, this kind of piano instruction education can also help students develop their personalities and social skills as well as their capacity for cross-cultural communication and wide-ranging vision. This teaching approach supports the development of globally competitive artists and musicians while also being in step with the current trend in music education and the strategic importance of the Bay Area's location.

The needs for talent are always evolving along with the modern economy and society. Cross-border diversity, application-oriented talent, and whole-person quality are the goals that should be pursued by talent education in colleges and universities. It is imperative that piano instruction be changed in the context of whole-person education in the Bay Area. Piano instruction, as a crucial component of contemporary music education, must address a number of real-world issues and

present cutting-edge curriculum and teaching strategies. The first thing that has to be addressed is that the instructional methods used to teach pupils how to play the piano are outdated and uninspired. It is therefore necessary for students to embrace more contemporary teaching strategies and curriculum, like fusing multimedia instruction with music technology. Second, students frequently make mistakes during performances because they are anxious about playing the piano in front of an audience. To increase their performance, they must fortify their psychological training and performance skills. Lastly, in order to develop students' artistic achievement and humanistic qualities, educators must integrate humanistic and music instruction because kids lack a value understanding of the piano's aesthetic perspective and vision on life.

Among the many creative, interest-based piano teaching techniques that have recently gained popularity, the Xindi Applied Piano Pedagogy (XAPP), which has its roots in mainland China, has gained widespread recognition very instantly. Since 2017, as its popularity has been rising rapidly across the country, it has also received praise and more attention in a number of significant American and Australian cities. Since its invention by Xin in 2001, the XAPP has been recognized as the most unique, inventive, and useful piano pedagogy, setting it apart from the several conventionally rigidly-formulated approaches (Chen, 2017). Learners' interests, creativity, and capacity for teamwork have been given priority by Xin through its Happy Piano Learning, Interest-based Piano Learning, Accelerated Piano Learning, and Creative Piano Learning teaching philosophies (Xindi Music Education Academy (XMEA), 2019).

Research Objectives

1. Analyze and research on relevant issues in the applied piano course at the university in Guangdong, China.
2. Develop a new teaching method for applying piano courses in universities based on various teaching concepts.
3. Examine the effectiveness of students' performance improvement after the new teaching method.

Research Questions

1. What are the objective phenomena and problems in the applied piano course?
2. How can we innovatively integrate new teaching methods?
3. How the new teaching method effect on students in piano courses and how to conduct the evaluation?

Conceptual Framework

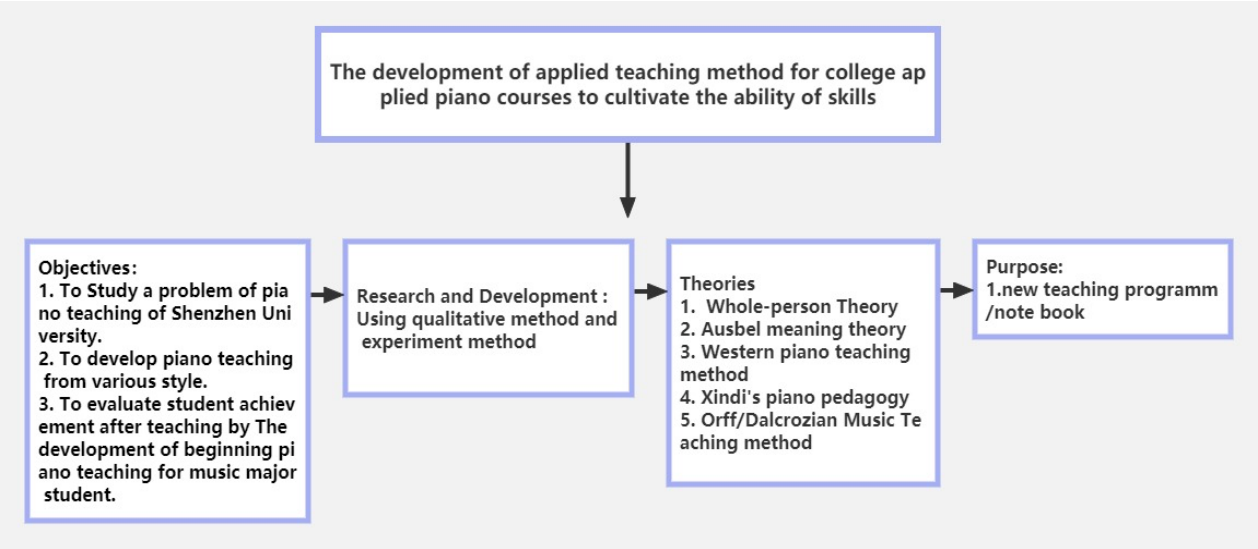

Figure 1: Research Conceptual Framework

Literature Review

Piano Teaching Method

The piano teaching method is an approach to studying the piano. The methods used in music education and piano instruction today are very varied, with different educators and teachers using the

same techniques to teach music sense and piano skills at the same time as different teaching methods in various locations and learning environments, all with the same goal of assisting students in learning musical expression and piano skills in an efficient and methodical manner.

The XinDi Piano Method, devised by Xin Di, diverges from conventional piano teaching approaches and aligns with the educational philosophy of fostering students' holistic development. Grounded in a human-centered approach, it seeks to refine traditional teaching techniques such as fingering, playing, and technical skills. Its objective is to democratize piano education, preserve traditional teaching principles, dismantle the exclusive nature of elite instruction, and usher in a new era of practical piano education in China. By promoting exploration, emulation, improvisation, and creativity, this method accelerates learning, sparks musical imagination, expands cognitive horizons, and underscores practical proficiency.

Theoretical basis of piano performance

Piano performance is a complex endeavor that draws upon theoretical frameworks from various disciplines, including music theory, cognitive psychology, motor learning, and performance studies. This paper provides an interdisciplinary examination of the theoretical foundations underlying piano performance, encompassing concepts such as musical structure, cognitive processes, motor skill acquisition, and psychological factors. Drawing upon scholarly literature and empirical research, this paper elucidates the interplay between theoretical principles and practical application in piano performance, offering insights for performers, educators, and researchers.

Piano performance is not only an artistic expression but also a cognitive and motor skill-based activity that involves the integration of multiple theoretical frameworks. This paper explores the theoretical underpinnings of piano performance, encompassing concepts from music theory, cognitive psychology, motor learning, and performance studies.

Music Theory: Music theory provides the structural foundation for piano performance, encompassing elements such as harmony, melody, rhythm, form, and notation. Concepts such as scales, chords, intervals, and musical syntax inform performers' interpretation and expression of repertoire (Lehman, 2019).

Cognitive Psychology: Cognitive psychology investigates the mental processes involved in piano performance, including perception, attention, memory, and problem-solving. Studies in this field examine how pianists perceive musical patterns, encode information from sheet music, memorize repertoire, and execute complex sequences of movements during performance (Sloboda, 2008).

Motor Learning: Motor learning theory explores the acquisition and refinement of motor skills essential for piano playing. Concepts such as motor planning, skill acquisition, feedback, and practice strategies inform pedagogical approaches aimed at optimizing piano technique and performance proficiency (Schmidt & Lee, 2019).

Psychological Factors: Psychological factors play a significant role in piano performance, influencing musicians' emotions, motivation, self-efficacy, anxiety, and performance mindset. Research in this area examines how psychological variables impact musicians' interpretative choices, stage presence, resilience in the face of performance anxiety, and overall performance quality (Kenny, 2011).

Performance Studies: Performance studies encompass interdisciplinary approaches to understanding the art of piano performance. Scholars investigate historical performance practices, cultural influences on interpretation, performer-audience interaction, and the role of embodiment and expressivity in musical communication (Cook, 2003).

The theoretical basis of piano performance encompasses a rich tapestry of concepts and principles drawn from music theory, cognitive psychology, motor learning, and performance studies. By integrating knowledge from these diverse disciplines, pianists can develop a deeper understanding of their craft and enhance their artistic expression and technical proficiency.

Theoretical base on human-oriented concept in piano music teaching

Piano music teaching goes beyond the mere transmission of technical skills; it encompasses a human-oriented approach that considers the cognitive, emotional, and developmental aspects of students. This approach draws upon several theoretical frameworks to create a holistic educational experience.

Humanistic Psychology

Humanistic psychology emphasizes individuals' inherent drive towards self-actualization and personal growth. In piano music teaching, this theoretical perspective emphasizes fostering students' creativity, autonomy, and self-expression (Maslow, 1968).

Social Learning Theory

Social learning theory posits that individuals learn through observation, imitation, and social interaction. In piano music teaching, this theory emphasizes the importance of modeling, peer collaboration, and teacher-student rapport in facilitating learning (Bandura, 1977).

Constructivism

Constructivism views learning as an active process of constructing knowledge and meaning through personal experiences and interactions. In piano music teaching, this theoretical framework encourages student-centered learning, inquiry-based exploration, and the construction of musical understanding through hands-on engagement (Vygotsky, 1978).

Ecological Systems Theory

Ecological systems theory explores the dynamic interplay between individuals and their social and environmental contexts. In piano music teaching, this theory underscores the influence of family dynamics, cultural background, and community support on students' musical development (Bronfenbrenner, 1979).

This human-oriented approach to piano music teaching integrates theoretical perspectives from psychology, education, and sociology to create a supportive and enriching learning environment that nurtures students' holistic development.

Piano Basic Courses

1. Traditional piano teaching methods in colleges and universities

1.1 Traditional one-on-one play

Traditional piano teaching mode is mostly the student teacher one-on-one teaching, also called business teaching, a student corresponding match a piano teacher, students can face to face teaching, can better observe students' learning status and knowledge skills, timely correct students' piano skills, playing, law enforcement standards, etc., the purpose is to cultivate professional piano players, performers, etc.

1.2 Collective teaching method.

Group teaching is a common teaching mode of piano in colleges and universities. Teachers can teach piano professional knowledge, skills, and performance forms to students at the same time, which greatly saves teaching time and educational resources, to cultivate compound piano talents.

2. New teaching method piano teaching method

Xin di piano teaching method is on the basis of traditional piano teaching, playing, playing and performance skills of teaching optimization, the purpose is to improve the university piano teaching achievements and cultivate piano talents, at the same time, the new piano teaching method in the teaching atmosphere is more suitable for contemporary university undergraduates, the teaching method pay more attention to the people-oriented, attach importance to the students in the piano class of music, at the same time pay attention to the teaching atmosphere, is of great significance in the piano music education.

2.1 Optimization of playing teaching.

Piano teaching, teaching objectives on students, changing the previous teaching mode, clear piano teaching purpose, driving and guiding students to the psychological activities of piano music comprehension, letting students give full play to their imagination and creativity, improving the enthusiasm of students learning the piano, and finally achieve the goal of improving students' music quality. It can also integrate multi-theme courses, including: tone tone, sound tone, variation, etc. Taking these teaching methods can effectively optimize the traditional piano teaching system.

2.2 Optimization of playing and singing teaching.

In the teaching process, emphasis on the role of harmony, especially the two and four-sound harmonies, so that students can fully understand and apply. By introducing the teaching integration form of integrated accompaniment and divided chorus, students can have a sense of independent appreciation for piano knowledge. At the same time, the regular accompaniment architecture can also be used to help students to better master the accompaniment skills. The harmony course in Xin Di Piano Teaching Method is taken as a part of the piano teaching course in colleges and universities, which lays a foundation for the subsequent acoustics and harmony professional learning, and also optimizes the traditional piano teaching system.

2.3 Optimization of performance teaching.

Adding the teaching link of improvisation and increasing the diversity of piano class teaching methods is an effective practical way to liberate students' thinking, activate the classroom atmosphere and master professional skills. Impromptu performances can be set according to the classroom teaching content and students' requirements, and can be live acoustic processing, piano solo,

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ensemble, four-hand joint play, etc., which not only strengthens students' learning of professional knowledge and skills, but also can apply theoretical knowledge to practical performance, to stimulate students' thinking creativity.

Music Learning Skills

Efficiency in music learning involves a combination of cognitive, emotional, and physical abilities that enhance a student's overall musical growth. While conventional teaching methods tend to prioritize technical mastery, modern music education embraces a more comprehensive approach to skill enhancement, addressing both technical prowess and emotional expression.

Understanding harmony is crucial for musicians to analyze, interpret, and compose music proficiently. A strong grasp of harmonic concepts allows students to discern chord progressions, recognize harmonic functions, and engage in improvisation within harmonic contexts (Laitz, 2012). Instructional methods aimed at fostering harmonic understanding include exercises in harmonic dictation, analysis of musical compositions for harmonic content, and composition tasks integrating harmonic structures (Burstein, 2003).

Apart from mastering technical abilities, musical expression is indispensable for effective music learning. Expressive interpretation encompasses the communication of emotions, nuances in phrasing, and adherence to stylistic conventions during performance (Juslin & Sloboda, 2010). Educators can cultivate expressive aptitude through guided listening sessions, exercises involving expressive movement, and analytical examinations of musical pieces (Davidson & King, 2004).

Achieving technical excellence in music performance requires mastering instrumental techniques, sight-reading, and fluency in repertoire (Harnum, 2013). Teaching methods that effectively foster technical skill growth include structured practice schedules, purposeful repetition, and constructive feedback from both instructors and peers (Lehmann & Kopiez, 2009). Additionally, combining music theory and ear training enhances students' capacity to comprehend and interpret musical compositions, thereby facilitating efficient rehearsal and performance processes (Geringer, 2016).

Overall, the efficiency development of music learning skills requires a multifaceted approach that integrates technical proficiency, musical expression, and harmonic understanding. By employing diverse teaching strategies tailored to students' needs and learning styles, educators can nurture well-rounded musicians capable of achieving proficiency and artistic excellence in their musical endeavors.

Research Methodology

This study employs a mixed-methods approach in universities in Guangdong, China. The primary population for this research comprises students enrolled in applied piano courses at in Guangdong, China. The sample consisted of first-year and second-year students in university about120 students selected through purposive sampling based on the following criteria:

1. They must be enrolled in the first or second year of their undergraduate music program.
2. They must have a basic proficiency in piano playing, as determined by their course grades and instructor recommendations.
3. They must have knowledge of or previous exposure to the Xindi’s piano teaching method.

In this paper, three rounds of action research were designed, mainly to avoid the differences caused by some uncontrollable factors and to get the research conclusions more accurately. Finally, the third round of research is based on the second round of investigation, and based on the corresponding analysis work. Research and development are the research approach used in this essay. Action research was the primary research method, with the help of four research methods: literature research, interview, case study, and interview. The literature research method served as the study's preparatory tool, while the interview and case study methods were employed as action research's supporting tools. Developing research methodologies and using research instruments are closely related processes. Throughout the many action studies, the questionnaire design and interview technique were used in the early, middle, and late phases. The questionnaire's contents are documented based on the students' fundamental information, and the interview's content was created with the study's direction in mind. selection of these instruments for study.

Research Processes

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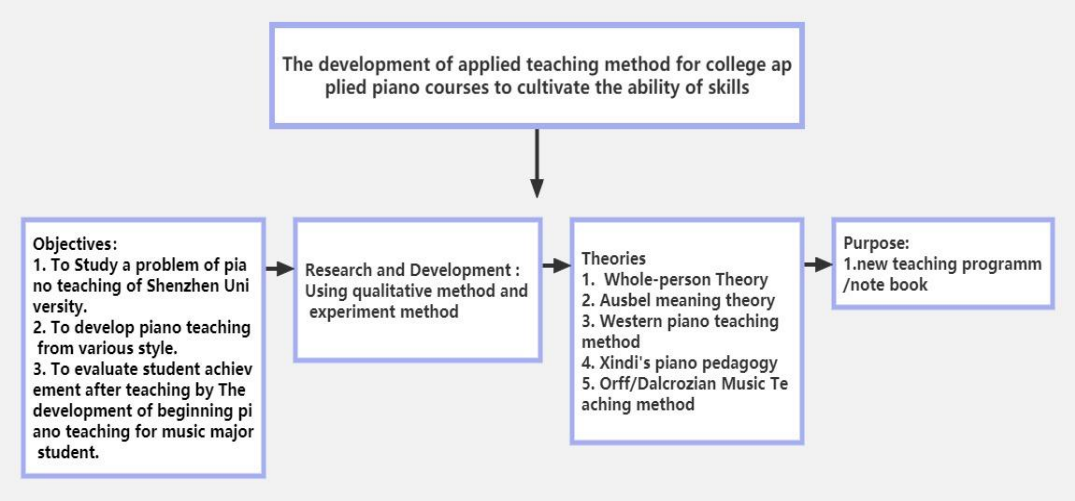

Figure 2 Research Processes, Source: Ms. Dong XInxin

In studies, researchers work closely with participants to develop research objectives, design the study protocol, collect and analyze data, and reflect and improve according to the findings. Action research emphasizes the importance of practical knowledge and experience, encourages participants to actively participate in the problem-solving process, and adjusts the direction and method of research according to practice needs. An action study can be conducted in three phases:

Research and judgment: starting at every stage of the action plan, mainly to lay the foundation for the next action, or to correct the action plan. The study aims to measure the degree to which the target is reaching at each stage.

Feedback research: actively reflect on and adjust the research process, and constantly improve the practice. Lewin in 1945 at the Group Dynamics Research Center as well as at R. Likert studies have shown. The first two phases of action research can have an impact on the organization as the researcher "acts".

Self-participation: after learning the results, the participant not only participates in the interpretation of the results, but also changes the program by themselves and implements it in practice. With this method, not only can we apply the survey results effectively, and get more real and effective data results, but more importantly, it can also be used as an incentive way to improve the sense of responsibility and consciousness of the interviewees.

In this paper, three rounds of action research were designed, mainly to avoid the differences caused by some uncontrollable factors and to get the research conclusions more accurately. Finally, the third round of research is based on the second round of investigation, and based on the corresponding analysis work.

To obtain a thorough knowledge of how schoolchildren learn the piano in everyday circumstances and classes, teachers and students in colleges and universities performed a brief interview survey prior to the questionnaire survey. In addition, they searched for forerunners in the interview data and theoretical research, the theoretical analysis and investigation's foundation, and the outcomes of the teaching features of colleges and universities, all in accordance with the phenomena of piano music instruction that was made public.

This paper uses the survey method as its research method to better understand the implementation of the piano teaching method in colleges and institutions. The random sample method is the study subject of the questionnaire survey. For the questionnaire survey, 200 students are chosen at random, and 200 undergraduates who are still enrolled in the university's first and second grades are equally chosen: 100 are freshmen and sophomores, 100 are equal men and women, and 50 are boys and girls. This ensures the fairness of the research. 200 questionnaires were distributed in total for this survey; 197 of those were retrieved, yielding a 98.5% recovery rate. More than five erroneous surveys with incomplete responses were eliminated from the collection. A total of 196 valid questionnaires were obtained, with an effective rate of 98.5%.

Results

Table 1: Age classification

Grade code	Grade category	Sex	Number of Entries
1	freshman year	woman	50

2	freshman year	man	50
3	Second grade in college	woman	50
4	Second grade in college	man	50
Amount			**200**

In the early stage of this questionnaire, there were four questions and seven statistical forms. The method of sampling survey was adopted to conduct a questionnaire survey on college students and graduates. The purpose of the questionnaire is to understand the situation of college students learning piano.

A total of 200 questionnaires were distributed to piano major students, and 197 questionnaires were recovered, with a recovery rate of 98%. In the process of this questionnaire survey, individual students were randomly selected.

Table 2 Source of origin

Option	Subtotal	Scale (%)
City	43	22
villages and towns	87	44
village	66	34

As can be seen in Table 2,22% of students came from urban areas, 44% from township areas, and 34% from rural areas. Most of the students are from the urban areas and township areas, although the number of students from the rural areas, but also a small number. The survey shows that most of the students admitted to music education come from cities and towns, and only a small number of students come from rural areas. From another aspect, it also reflects that the development of piano education in Guangdong Province is not universal enough, and the basic piano education in cities has been better developed than that in rural areas.

Table 3 Piano learning status at school admission

Option	Subtotal	Scale (%)
I have always studied until the age of 10	25	13
Studied for 1-3 years	57	29
A little contact before the art test	87	44
Didn't learn	27	14

As can be seen from table 3, since ten have been learning the piano student is not much, only 13% of the total number of students in the entrance system learning piano for 1 to 3 years, and about 44% of students just in the art test contact a little piano, they are mostly through the art test before assault learning admitted to the school now, almost no piano foundation, contact with the piano music is also very limited, only test one or two, and 14% of the students chose to hardly learn the piano. It shows that the students majoring in music teaching in colleges and universities have a weak piano foundation, the learning of piano playing skills is not deep enough, and the teachers' teaching methods are more traditional and simpler.

Table 4 Level of piano playing at school entry

Option	Subtotal	Scale (%)
Carney 599 degree	107	55
Carney 849 degree	49	25
Carney 299 degree	25	13
Carney 740 or above degree	15	7

Students can be seen from Table 4 when the piano playing level, the degree of "carney 599" students of 55% of the total number, the degree to "carney 849" degree of 25% of the total number of students, the degree of "carney 299" students accounted for 13%, playing to the degree of "carney

740" students only accounted for 7% of the total number. It can be seen that, with the improvement of the degree of playing, piano playing purpose difficulty, the fewer number, also reflects the difficulty of the piano learning process and music professional students' piano level is uneven, it also indirectly reflects the students in the piano for the teaching method used by the teacher acceptance ability is relatively shallow, not suitable for music professional students, but also applies to exam-oriented education of piano teaching.

Table 5 Difficulties encountered in learning the piano (multiple choices)

Option	Subtotal	Scale (%)
Reading spectrum is difficult	77	19
Fingers are not flexible enough	135	33
Less time to practice the piano	92	22
Low efficiency in practicing piano	107	26

As can be seen from Table 5,19% of the students have difficulty reading music, 33% think that their fingers are not flexible enough, 22% think they have little time, and 26% think they have low efficiency. In learning the piano peace practice, the students encountered different degrees of difficulty, among them, most of the student's thought fingers were not flexible and low efficiency was the usual practice, this part of the difficulties, most is occurred students' practice time and skills were not skilled enough, but also related to teachers' teaching methods.

Table 6 Piano works that student were exposed to during their study period

Option	Number of people	Scale (%)
Works of the Baroque period	64	15
Classical period works	88	20
Romantic works	102	24
Impressionist works	21	5
Modern and modern works	66	15
Chinese works	89	21

The students learn the piano work is very rich, contact with the classical period, romantic works, and Chinese works of students accounted for the majority, and the baroque period, impressionist works and modern works during the students in the piano learning contactless, especially impressionist works, only about 5% of the students' contact, also can see the students lack in actual combat experience, for some piano skills demonstration cannot be able to show in some works.

Table 7 Teaching methods commonly used by teachers

Option	Subtotal	Scale
method of lecture	129	22
discussion method	46	8
method of demonstration	155	26
exercise method	107	18
conversation method	54	10
edifying method	24	4
inquiry method	39	6
other	39	6

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It can be seen from Table 7 that teachers use a variety of teaching methods to guide students in piano teaching, among which, the more commonly used methods are the teaching method, demonstration method, and practice method.

Interviews

Before the questionnaire survey, the author conducted a simple interview survey on the students, graduates, and teachers of the university, fully understood the basic situation of the students in the school, and made a summary from the results.

Table 8 Interview with students and teachers

Target	Interview Content
Current school students and graduate students	Piano learning atmosphere Piano learning skills Piano playing skills Views on piano teaching Piano Course
teacher	content of courses teaching method Student learning progress View on the piano teaching method

The piano teaching program within the Musicology major at the Conservatory of Music is heavily influenced by various interdisciplinary arts disciplines, with piano performance exerting a predominant impact. However, there are discrepancies in the overall quality and proficiency levels among students, alongside limitations in teaching capabilities among faculty members. Consequently, piano students face challenges in deepening their theoretical understanding and practical playing skills due to limited opportunities for hands-on practice. Interviews with students and graduates reveal common difficulties encountered, such as finger dexterity issues, time constraints hindering consistent practice, and struggles with slow reading of music theory. The curriculum aims to align with students' cognitive development, transitioning from foundational skills acquisition to advanced theoretical understanding and practical application. Nonetheless, teachers acknowledge the constraints of test-oriented education prevalent in China, where many students enter music programs with weak foundations and rely on last-minute preparation for exams. Socioeconomic disparities further exacerbate learning inequalities, with students from affluent backgrounds often possessing early exposure and access to music education resources. In contrast, those from less privileged backgrounds may face barriers to acquiring foundational skills and suffer from a widening educational gap. These challenges present teaching difficulties for instructors, necessitating tailored approaches to accommodate varying levels of readiness and background knowledge among students.

The interviews reveal that while university instructors may possess high levels of professional and theoretical expertise, many lack extensive stage and practical experience, and their theoretical knowledge may not be adequately tested. The influence of Western piano education has led to a tendency among teachers to rely on past learning experiences, resulting in a replication of outdated teaching methods. To address this, Professor Yang Ming suggests enhancing courses by incorporating beneficial experiences and adapting basic courses to meet contemporary professional requirements. This includes condensing music history into the history of piano art and integrating topics like music style, harmony, and polyphony into the basic theory of music. It is proposed that undergraduates focus on broadening their horizons before pursuing more in-depth studies at the master's and doctoral levels.

Differences exist in the teaching objectives, methods, and evaluation criteria of piano instruction between music majors in specialized music colleges and those in regular universities. The adoption of specialized teaching methods in music colleges poses challenges to student learning effectiveness. Traditionally, piano teaching primarily involves one-on-one instruction, allowing for immediate problem-solving and communication between teachers and students. However, the expansion of student enrollment and the need to cultivate a broader range of music talents have led to increased class sizes and resource allocation issues, rendering the one-on-one model inadequate.

As a result, group and class teaching methods have been introduced, but they often lack innovative approaches and fail to fully engage students. Group teaching pairs one teacher with two students, focusing on demonstration and practice of repertoire, while class teaching emphasizes theoretical instruction with minimal interaction between teachers and students. This traditional

teaching style may lead to disinterest among students and hinder their potential for musical innovation and creativity, ultimately falling short of the demand for versatile music talents in society.

Conclusion

Overall, the importance of innovation ability in applied piano teaching cannot be ignored. To cultivate students' innovative ability, it is necessary to provide an open teaching environment, introduce new teaching tools and technologies, encourage interdisciplinary learning, and give students ample opportunities to participate in music creation and performance activities. Through these pathways, students can be helped to better cope with future challenges and become innovative musicians.

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