

# Exploring the Construction of Piano Course Cluster for Music Education Majors in Vocational Teacher Training Colleges in Shandong Province, China

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**Abstract** – Piano course is an important course in the core curriculum of music education majors in teacher training colleges and universities. In recent years, various problems have emerged in the teaching of piano course, such as low efficiency of the course teaching, and the knowledge and skills learned by the students do not match with those required by the employment positions. In order to conform to the concept and trend of integrated curriculum and integrated discipline teaching in the current stage of higher education, this study integrates and links the piano course with other disciplines, and constructs the teaching mode of piano course cluster. The study carries out the construction of the piano course cluster in the aspects of teacher team construction, optimization and improvement of the internal structure and aspects of each course, and transformation of evaluation methods. The construction and implementation of the piano course cluster can enhance the breadth of students' learning knowledge, and the related disciplines in the course cluster assist each other and the knowledge structure helps each other, which improves the efficiency of students in learning the piano course as well as the related courses, and it also plays a very good role in assisting the improvement of students' own music skills.

**Keywords** – Piano curriculum cluster, Music education program, Vocational institutions, Teacher education

## I. INTRODUCTION

This study aims to investigate the effect of a collective piano curriculum in group piano lessons in enhancing music students' learning efficiency and technology skills in Shandong Vocational Colleges, China. Investigates the construction of a team of teachers in the piano course clusters, the overall design of the teaching contents of the relevant courses in the piano course clusters, the implementation of the teaching process, and the evaluation of the teaching results to achieve the goal of constructing the piano course clusters.

China boasts numerous institutions dedicated to music education, ranging from higher undergraduate colleges to vocational universities. Within these academic settings, the piano course holds a pivotal position as a mandatory component within the curriculum for music education majors to providing crucial support for the overall skill framework (Xiang, 2022). In the vocational colleges and universities in Shandong Province, the piano course for music education

majors are mostly a single course, and the teaching method keeps the traditional one-on-one teaching mode combined with group lessons (Huang, 2022). These institutions receive practical training, equipping them with the skills needed to enter the workforce directly upon graduation. The curriculum often integrates both theoretical knowledge and practical application, ensuring that students develop a comprehensive understanding of their chosen field.

Anhui's vocational colleges also foster partnerships with local industries and businesses, facilitating internships, apprenticeships, and job placement opportunities for students. This collaborative approach ensures that the education provided aligns with the demands of the regional job market, enhancing graduates' employability.

Furthermore, vocational colleges in Anhui Province contribute to addressing the broader goal of China's economic development by producing a skilled workforce capable of meeting the demands of a rapidly evolving job market. The emphasis on practical skills and industry-relevant knowledge reflects a commitment to meeting the needs of various sectors, ultimately boosting the province's economic competitiveness.

## II. PROBLEM STATEMENT

In recent years, Anhui Province has seen growth in the number of vocational colleges and the diversity of programs they offer, reflecting the increasing recognition of the value of vocational education. As these institutions continue to evolve, they are likely to play a pivotal role in shaping the future workforce of Anhui Province, contributing to both individual success stories and the overall development of the region.

But the relatively low social status of vocational education is currently an important topic in global debates, as its objectives and processes are aimed at addressing social, economic and personal concerns (Relly,2022). The low standing of vocational education may have profound consequences on how government, industry, employers, teachers, parents, and students perceive vocational education (Billett et al., 2022). This issue is globally recognised in both developed and developing countries (UNESCO-UNEVOC, 2018), and is also a notable issue in China (Hao & Pilz, 2021). In recent years, China has placed an unprecedented emphasis on improving the attractiveness and standing of vocational education and has taken a number of measures to achieve this

Students follow a tutor to study the piano course in the four years of college, and each tutor provides guidance and teaching according to the students' performance situation,

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including the teaching of other disciplines, such as the music theory course (Wang, 2020). The piano course is designed to develop students' piano playing skills and pave the way for their subsequent studies in piano accompaniment and harmony to enter the teaching profession in the future (ZiXuan, 2021)

Piano Curriculum group in Music major. The establishment of piano curriculum groups is promoted and encouraged in Chinese higher education. The development and execution of these curriculum groups signify the progress and exploration within Chinese higher education in terms of ideas and concepts (Yiran, 2021). The formation of a curriculum group is rooted in specific learning requirements, involving the design and integration of related courses within the same discipline or interdisciplinary courses (Renate & Klaassen, 2018). This approach emphasizes the logical connection of knowledge, methods, and problems among courses, fostering mutual illumination and complementarity, thereby highlighting the significance of each course within the group and creating a relatively independent curriculum system (Mentz & Lubbe, 2021). On November, 2020, a conference on constructing new liberal arts, sponsored by the Ministry of Education's Working Group, took place at Shandong University (Weihai). The event assessed innovations in Chinese higher liberal arts education in the new era and unveiled the Declaration on the Construction of New Liberal Arts. This declaration outlined a comprehensive strategy for advancing new liberal arts, advocating the incorporation of the latest theoretical insights and practical experiences related to building socialism with Chinese characteristics into classrooms, teaching materials, and high-quality educational resources (linJin, 2022). It also encourages and supports colleges and universities to offer interdisciplinary and inter-professional emerging cross-curricular courses and practical teaching courses, and to cultivate students' ability to integrate knowledge across fields and practice (Oudenampsen, 2023).

### **III. PROBLEM STATEMENT**

Teaching piano to students in group settings is a widespread practice worldwide, especially in higher education institutions like colleges and universities. This is particularly true for music majors who, despite not being pianists, often participate in combined group piano and theory classes concurrently (Pike, 2013). Piano lessons for music education majors are typically segmented into individual and group sessions. These lessons primarily focus on enhancing students' playing skills and their ability to navigate musical elements. Importantly, these sessions remain distinct from related courses in terms of teaching content, methods, design, and post-course evaluations (Baisheng, 2019). This separation aims to augment the impact of piano lessons by incorporating complementary elements from other courses.

In China, the new music class standard has brought about updated requirements for the teaching proficiency of elementary school music teachers (Chen, 2022). Consequently, educators in teacher training colleges and

universities are urged to enhance their teaching skills. However, at present, the teaching techniques employed by piano teachers specializing in music education predominantly adhere to traditional one-on-one formats (Abdullah, 2021). This approach not only limits students' opportunities for interaction but also fails to foster the development of diverse music technology and efficiency teaching skills (Chen, 2022). Various factors contribute to this problem. Teachers frequently overlook chances to improve their technical skills and stay updated on new teaching concepts and technique enhancements (Haleem, 2022). Additionally, colleges lack proactive measures to promote continuous professional development for educators, including piano teachers in vocational colleges who may not be fully aware of the need for self-improvement in piano performance despite holding master's degrees. The crucial distinction between teaching and teaching effectively further hindering their professional development (Abdul Rahman, 2020).

A collective piano curriculum implements by group teachers one of the guarantees for the smooth progress of piano course group teaching order, information exchange between teachers' team, their respective teaching division of labour, the integration of teaching objectives and teaching evaluation methods and so on are all needed to be accomplished by teachers' team together (Fang, 2020). Rauhala (2015) suggested that a small-group environment for piano course works best because students experience music fundamentals through a wide range of stimulating and enjoyable activities such as movement, ear training, improvisation, technique, sight reading and theory (Hao, 2022). Studies on group learning, or cooperative learning, have yielded interesting and useful findings. The concepts of social independence and communities of practice (Johnson & Johnson, 1970) introduce ideas and approaches to creating collaborative learning environments that foster successful and healthy individual learning (Whitener, 2016). Individual learning efficiency is typically considered a prerequisite, and individual development in learning and technology skills within the ensemble is often assumed rather than actively fostered. Given the intuitive interdependence of musical ensembles, studying individual learning within a group context impact individual efficacy progress and improve technology skill (Green, 2001).

However, at present, the teacher training colleges and universities in Shandong Province have not yet formed the construction of teachers' teams by integrate the various piano curriculum in piano course. Various piano curricula are not integrated, and teachers from different institutions work independently, leading to a chaotic state within the piano course groups. Therefore, In this study, a cluster of piano courses was constructed to increase the efficiency for students and teachers in taking music education courses. The study aspired to contribute to the fields of music education, comprehension of cooperative learning in education and music education, and ongoing success and development as individuals who collaborate in learning.

Research has investigated the effects of musical learning communities on individual efficacy and skills. Allsup (2003) conducted a comparative analysis of cooperative music learning in different genres, suggesting

that popular music might provide a more favourable environment for collaborative learning and composition. Additionally, Green (2001) and Campbell (1995) studied group dynamics, individual efficacy, and productivity within small collaborative groups engaged in learning popular music. In the context of domestic literature, there is extensive research on improving piano teaching methods and strategies. Researchers have explored reforms and strategies for piano teaching in primary and secondary schools, colleges, universities, and social education from various perspectives. However, there is limited research on piano curriculum and related courses. The existing research is relatively scarce, comprising approximately 10 articles, including two to three dissertations and the rest academic papers (Liu, J., 2021). Nevertheless, there is a lack of research on the impact of a collective Piano Curriculum in group piano lessons on enhancing music students' learning efficiency and technology skills. Thus, this study seeks to identify the effect of construction collective piano curriculum courses in piano cluster teaching in enhancing learning efficiency and technology skills among Students in China.

#### IV. LITERATURE REVIEW

##### Piano Course Cluster

The piano course cluster in the literature refers to a rationally structured, clearly hierarchical, interconnected, complementary, and in-depth echoed cluster of several piano related single courses of the same or similar nature, aiming at specific literacy (William Forde Thompson, 2021). Generally, piano course clusters can be divided into intellectual course clusters, practical course clusters and hybrid course clusters. The courses involved in this study include practical courses such as piano lessons and accompaniment lessons, as well as theoretical knowledge courses such as the history of Chinese and Western music, music theory, harmony, and so on, and therefore the piano course clusters embodied in this study belong to the comprehensive course clusters (Qianru Hu, 2022).

##### Collective Piano Curriculum Courses

Curriculum integration is now the core idea of curriculum reform in colleges and universities, in the current view of the curriculum, a single curriculum teaching is difficult to meet the comprehensive development of contemporary college students, employment trends also make the curriculum in colleges and universities must be integrated (Ruth Bridgstock, 2020). In the recruitment of elementary school music teachers, the professional skills of the applicants is no longer a separate one, but the need for voice, piano, accompaniment, dance, music theory, music knowledge, choral conductor, orchestra conductor a multi-functional teacher, therefore, driven by this employment requirements, the knowledge base of the students of music education in various teacher training colleges and universities need to be piano as a special, multi-functional group of piano courses for other majors to carry out

curricular integration and innovation (Joanna Szczyrba-Poroszevska, 2024).

##### Music Teaching Methods in Education

Music teaching methods in education encompass various approaches to impart musical knowledge and skills to students. These methods range from traditional techniques emphasizing notation and theory to modern, experiential approaches focusing on creativity and practical application. The choice of method often depends on the goals of the music program and the needs of the students (Zhang Nan, 2022). investigated a piano teaching model utilizing machine learning and artificial intelligence (AI) to enhance teaching quality. The study analyzed machine learning theories, neural network characteristics, and the integration of AI in music teaching. It proposed an intelligent piano teaching assistance method and constructed a management system. Surveys and statistics were conducted to test the model's effectiveness, showing significant improvements over traditional methods in theoretical teaching and practical operation. Additionally, Zhu Xiaoyu explored a DL network-based piano group classroom teaching effect prediction model, achieving a prediction accuracy of 94.41%. This method eliminates subjectivity in evaluation, producing satisfactory results with extensive application prospects (Zhu Xiaoyu, 2021).

Archer (2022) examined pre-college piano teachers' perspectives on beginner-level piano teaching techniques and their relation to injury prevention. The study assessed teachers' strategies in line with existing research and explored influences such as method books and prior education. A questionnaire was distributed to 216 pre-college piano teachers in the United States, focusing on demographic information, teaching technology perspectives, methodological library materials, and injury prevention practices. Findings showed that 54.41% of participants received some form of training, ranging from local workshops to certification in methods like the Alexander Technique or Taubman Method. Teachers with specific training tended to have nuanced teaching philosophies. The study recommends prioritizing healthy piano technique and suggests further education for teachers feeling underprepared. This research lays the groundwork for future studies on beginner piano technique to prevent injuries and promote healthy piano playing (Yan, 2021). In summary, In these few research object is the undergraduate colleges and universities, some research object is the social piano education, no research object is for the teacher training profession as the object of research related research.

Foreign literature on piano pedagogy primarily focuses on piano courses and their impact on students and teachers. Some articles also explore the construction of piano courses, with a few scholars suggesting paths for improvement (Liu, 2022). However, while foreign studies emphasize piano practice, few delve into curriculum construction or the composition of piano course groups. Consequently, research on piano course group construction lacks depth and does not consider China's educational context (Liu, 2021). Mei. D's work in 2022

offers valuable insights into developing elementary school teachers in Shandong province, potentially informing well-structured teacher training programs for piano course groups in local colleges and vocational schools. This alignment could significantly benefit music majors' education in higher vocational institutions.

### Constructing Comprehensive Piano Course Clusters In Chinese Higher Education

Constructing Comprehensive Piano Course Clusters in Chinese Higher Education" involves a multifaceted approach to curriculum design, aiming to provide students with a well-rounded and immersive learning experience (Xu Li, Yuan Li, 2023). These clusters are meticulously crafted to include a variety of courses that cover not only piano performance and technique but also music theory, history, pedagogy, and technology. By offering a broad range of subjects, students can develop a holistic understanding of music and the piano, preparing them for various careers in the music industry (Meijia Li, 2024). In addition to traditional piano instruction, these clusters often incorporate innovative teaching methods and assessment strategies. This may include the use of digital pianos, music software, and online resources to enhance learning outcomes (Lixia Li, 2018). The goal is to create a dynamic learning environment that caters to the diverse needs and learning styles of students, fostering creativity, and musical exploration. Overall, the construction of comprehensive piano course clusters in Chinese higher education aims to provide students with a solid foundation in music and piano studies, equipping them with the skills and knowledge needed for success in the music industry (Wenqing Wang et al, 2023). Shuqian (2023) integrates civic elements into piano class teaching for music education majors, focusing on curriculum design and teaching materials selection. The author outlines key points for incorporating civics into piano courses and offers methods for readers to practice civic education. Tao (2023) examines civic education reform in local college piano curricula, addressing issues such as teachers' understanding of civics, personal civic education of piano teachers, and the lack of civic and political education content in piano teaching. Solutions include adopting a student-centred teaching concept, enhancing teachers' civic education training, and integrating civic elements into piano works. Lei (2023) explores integrating China's red culture into piano curricula from a civic and political perspective. The study details how red culture is selected, integrated, and evaluated in piano teaching, emphasizing the importance of civic and political elements in art colleges and universities. Li, & Lin (2019) discusses the teaching mode of basic piano courses in colleges, focusing on the Flipped Classroom (FC) environment for beginner piano lessons. The study shows that FC methods improve students' application ability, leading to higher employment rates compared to traditional education. Xiang (2022) explores civic education in piano courses, highlighting paths to realize civics in piano education, including inculcating patriotism, cultivating hard-working character, guiding students to establish aesthetics, and using Chinese piano works to enhance cultural literacy. Wanrong (2022)

investigates the use of open teaching modes based on IoT applications in college piano courses. The study addresses issues in current piano teaching, such as outdated teaching modes and curriculum designs. The open teaching mode significantly improves teaching effectiveness and can be applied in actual teaching settings.

In the realm of piano curriculum development, Li, Lin (2019) discusses the teaching approach for basic piano courses in colleges, focusing on meeting the needs of beginner students. The article examines the effectiveness of the Flipped Classroom (FC) teaching style, commonly used in beginner piano lessons. The study enhances the FC teaching framework by investigating the impact of scenario-specific deployment, particularly based on the Application Ability training model. Surveys and studies indicate that students receiving FC education have a higher employment rate compared to those in traditional education, with an average increase of 14.2% and a maximum increase of 17%. This suggests that FC methods are successful in basic piano courses in higher education, particularly in developing students' application skills. Gao Xiang (2022) explores civic education in piano courses, detailing various paths for integrating civics into piano education. These paths include instilling patriotism, cultivating hard-working character through basic skills practice, guiding students to perceive and establish aesthetics, emphasizing the use of Chinese piano works in teaching, and enhancing cultural literacy. The article provides a comprehensive exploration of these aspects to enrich piano education. Wanrong (2022) investigates the use of an open teaching mode based on IoT applications in college piano courses. The study addresses issues in current piano teaching, such as outdated teaching modes and curriculum design, and proposes an open teaching mode to improve teaching effectiveness. The study compares the results of this teaching mode with traditional methods, showing a significant improvement in the teaching effect of piano courses. This suggests that the open teaching mode can be successfully applied in actual teaching scenarios.

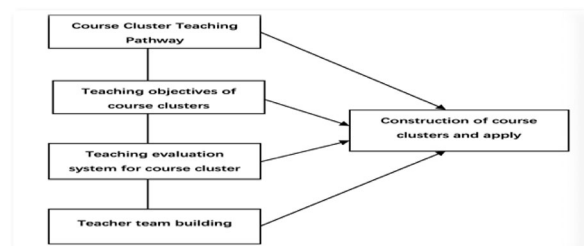


Figure 1. Conceptual Framework

## V. METHOD

In this study, the most important objective of the study was to construct a piano program. This chapter describes the research methodology and outlines the research design, population, sampling method, procedures, and instrumentations. The chapter also will delve into various essential aspects of research methodology, encompassing validity, reliability, data analysis, and ethical considerations. Data analysis methods will be explored to

elucidate how researchers interpret and derive meaning from collected data. Additionally, ethical considerations in research conduct.

In this study, content analysis, survey and a pre-post experimental design will be utilized.

Content analysis is a research method used to systematically analyze the content of communication or text. It involves identifying, coding, and categorizing patterns in the content to draw inferences or conclusions about the messages being conveyed (Jim Macnamara, 2018). Content analysis used to evaluate and interpret the implementation of the Music Piano course in Shandong Vocational Colleges, as well as to construct collective piano curriculum courses in piano cluster teaching. This method involves systematically categorizing and analyzing the content of various communication forms, such as texts, to identify patterns, themes, and trends related to the implementation and construction processes (Jing Li).

Survey design: For identify the perspectives of teachers about collective piano curriculum courses in piano cluster teaching, a survey research design would be appropriate. The survey will be conducted to examine the current situation of collective piano curriculum courses in piano cluster teaching. Baker (2000) called survey as a better source of primary data collection in social and behavioural science as compared to observation, and also a method of collecting original data from the population which is too large to be directly observed. (Baker, M. J,2020) The experimental design will involve implementing the collective piano curriculum courses in piano cluster teaching and comparing the improvement of students before and after the intervention. determining the experimental conditions, selecting the sample, assigning participants to different groups or conditions, and deciding on the timing and method of data collection (Xuan Liu,2024).

Sample is a subset of the population. It comprises some members selected from the population and a subject is a single member of the sample, just as an element is a single member of the population” (Cavana et al., 2001). Probability sampling method will be used in this research to conduct the samples selection. Choosing a representative sample is a crucial aspect in quantitative research especially when the results need to be generalized to the population (Gravetter & Wallnau, 2013). Similarly, Alvi (2016) indicated that the use of probability sampling in quantitative research reduces errors and biases in the study. The sampling procedure that adopted in this research for survey and experimental will be simple random sampling method. The process is carried out in multiple stages. using small and further smaller sampling units at each stage. Selecting a representative sample is essential in survey research, particularly when aiming to generalize the results to the population (Gravetter & Wallnau, 2013).

In this study, the process of stratified random sampling for the current state of the piano program researcher's portion of the data collection involving students and faculty for the study was critical to ensure that the sample was representative of the entire population. The first step was to determine the total number of students and teachers at each institution. For the purpose of this study,

the total number of students in the target population was 709 and the total number of teachers was 74.

In each stratum, a proportionate number of students and teachers are randomly selected to ensure representation from all institutions. This step is critical for obtaining a sample that accurately reflects the demographics and characteristics of the entire population. Once the samples from each stratum are selected, they are combined to form the final sample for the study as shown in (Fig 3.1). This process of stratified random sampling helps to ensure that the sample is representative of the entire population and allows for the generalization of study findings to a wider population.

TABLE I: SAMPLE SELECTION SCALE

Population Size	Required Sample Size							
	Confidence = 95%			Confidence = 99%				
	Margin of error			Margin of Error				
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
40	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	189	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	146	265	318	384	250	309	348	391
500	217	306	372	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1,000	278	440	606	906	399	575	727	943
1,200	291	474	674	1,067	427	636	827	1,119
1,500	306	515	759	1,297	460	712	959	1,376
2,000	322	563	869	1,655	498	808	1,141	1,785
2,500	333	597	952	1,984	524	879	1,288	2,173
3,500	346	641	1,068	2,565	558	977	1,510	2,890
5,000	397	678	1,176	3,288	586	1,066	1,734	3,842
7,500	365	710	1,275	4,211	610	1,147	1,960	5,165
10,000	370	727	1,332	4,899	622	1,193	2,098	6,239
25,000	378	760	1,448	6,939	646	1,285	2,399	9,972
50,000	381	772	1,491	8,056	655	1,318	2,520	12,455
75,000	382	776	1,506	8,514	658	1,330	2,563	13,583
100,000	383	778	1,513	8,762	659	1,336	2,585	14,227
250,000	384	782	1,527	9,248	662	1,347	2,626	15,555
500,000	384	783	1,532	9,423	663	1,350	2,640	16,055
1,000,000	384	783	1,534	9,512	663	1,352	2,647	16,317
2,500,000	384	783	1,536	9,567	663	1,353	2,651	16,378
10,000,000	384	784	1,536	9,594	663	1,354	2,653	16,560
100,000,000	384	784	1,537	9,603	663	1,354	2,654	16,584
300,000,000	384	784	1,537	9,603	663	1,354	2,654	16,586

Adapted from Krejcie Dan Morgan (1970)

## VI. FINDINGS

At the end of this study, a complete piano course group was formed, and in the construction of the piano course group, a complete course group teaching team was formed by seven teachers, with the rank composition of two assistant professors, three lecturers, and two professors, with the academic qualifications of master's degree or above, and the doctoral degree accounted for half of the total number of teachers. All of them are "dual-teacher" teachers who have had time to practice and exercise in elementary school.

In terms of curriculum integration. The piano course, music theory course, song accompaniment course, Chinese and Western music history course, harmony course, composition analysis course, choral conducting course and other seven courses are organized to form a piano course group. From the selection of teaching materials for the seven courses, the writing of the teaching design, before, during and after the lessons, no matter what new lessons are taught or old knowledge is reviewed, the knowledge of the courses that can be linked together will be linked. For example, in the piano class about the piano piece Mozart sonata performance teaching, in the story of the composer Mozart and the knowledge of Western music history as a guide to teach, in the music playing skills will be involved in the teaching of ornamentation, expression belongs to the

emotional terms and so on, which can be combined with the knowledge of the music theory course to teach, in the emotional analysis of the piece and the table line processing, can be combined with the knowledge of the harmony and the song pattern analysis. When analyzing the emotion and expression of a piece of music, it can be combined with the knowledge of harmonic and compositional analysis. On the other hand, other related courses can also be taught in connection with the piano class, so that the knowledge points are interoperable, and the key points and difficulties are efficiently completed teaching and learning.

It is worth mentioning that the teachers of the various courses in the piano curriculum cluster need to work together when preparing lesson plans, which is the process in which the various knowledge points can be better integrated. The design of teaching methods can also be more uniform. Form a more efficient.

In terms of course evaluation. Adopted a new comprehensive course evaluation method, that is, a test or examination, test the evaluation mode of multiple courses, for example, in the piano skills test to increase the analysis of the piece of music test, let the students talk about their own group of music composition background, which includes the introduction of the composer, the creation of the age of the creation, the creation of the style of the time when to examine the mastery of knowledge of the history of western music, analyze the performance of the piece of music structure, drawing Analyze the compositional structure of the piece and draw a compositional analysis chart to examine the students' mastery of compositional analysis. On the contrary, in the examination process of song playing and singing, the test point of piano performance can be added, from the accuracy of the accompaniment song style, whether the accompaniment song repertoire skill is skillful or not. In the choral and conducting assessment process, through the two pianos to replace the choir form is a common form of assessment, for choral music piano playing, more conducive to exercise the student's vocal division and polyphonic interpretation of the work. This is also the key point of the combination of choral conducting course and piano course, so in the assessment process can be added to each other's class is the content, in order to achieve a comprehensive investigation of the mastery of students' knowledge and skills.

It is worth noting that the courses in the piano course cluster can be combined in any way in the evaluation protocol, one-by-one, two-by-two, and multi-course combinations are all possible. Comprehensive teaching evaluation is an indispensable part of the construction of the piano course group, which can not only accurately assess the students' knowledge and skills learning, but also test the effect of the teacher's teaching in the piano course group.

## VII. SUGGESTION FOR FURTHER STUDIES

When the construction of the piano course cluster is completed, the next step of the research can be carried out to study the effect of the use of the piano course cluster in the teaching of music education majors on the students'

efficiency in learning the music major courses and music playing technical skills.

The changes of students before and after receiving the piano course cluster teaching are studied and analyzed by means of sequential testing, and in the process of analysis, the testing method of quantitative research is used to form a quantitative test form (Table 2). Finally, the data were analyzed by using statistical analysis software such as spss, and compared and analyzed with the data on learning efficiency and skills of the students who were previously taught in the piano course group, and finally conclusions were formed.

TABLE II: QUANTITATIVE TEST FORMS.

Piano course group skill course amount test table					
name :	Class and grade :	Major :			
Course	Test point	Excellent (90- 100)	Good (80- 89)	Pass (60- 79)	Fail (0- 59)
piano Course	Musical expression				
	Completeness of the piece				
	Compatibility of the performance with the style of the piece				
	Knowledge of the background music history of the piece				
	Match between the difficulty of the piece and the skill level of the player				
	Finger technique (runs, granularity, etc.)				
	Rhythmic sense and rhythmic accuracy				
	Accuracy of notes and intervals				
song playing Course	Appropriate use of accompaniment patterns				
	Appropriateness of harmonic choices				
	Accuracy of stylistic playing				
	Smoothness and completeness of overall performance				
	Proficiency in singing				
Chorus and Conducting Course	Conducting standardization of movement				
	Reasonableness of the distribution of choral parts				
	Expression of the conductor				
	Consistency of conducting movements				
	Ability of choral rehearsal				

## VIII. SUMMARIZE

The construction of the piano course group is in line with the current development trend of curriculum reform of Chinese institutions of higher education, which is "big curriculum" (comprehensive curriculum and integration of disciplines). Through the integration of seven courses of music education majors, including the piano course, the research on the formation of the teacher team, the actual design of the implementation of the curriculum, and the transformation of the evaluation method of the course group, etc., we finally constructed a set of piano courses suitable for teaching among vocational institutions, music education majors and students. Through the research on the integration of seven courses, including piano, in the formation of teacher teams, the actual design and coordination of course implementation, and the transformation of evaluation methods, a set of piano courses suitable for teaching among vocational colleges and universities, teachers and students of music education majors was constructed. The success of the construction of this course group has increased the efficiency of teaching and learning for students and teachers, and is more in line with the indicators in the talent cultivation program.

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