Analysis On The Current Situation And Countermeasures Of Piano Teaching In Normal Universities In China

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Abstract

As the national "Double Reduction" policy for compulsory education students and the reform on the curriculum of art are carried forward, music education major in normal colleges and universities who is aimed to provide art teachers for compulsory education is confronted with the big development opportunities and challenges. To seize the opportunities, improvement of music teaching quality in normal colleges and universities is a prerequisite. Piano teaching constitutes an integral part of music teaching. Piano teaching quality has connection with music teaching quality. This research adopts qualitative and quantitative research methods, with the piano teaching teachers, administrators and music education students from five normal colleges in four regions, including South China, East China, Central China and Northwest China, as the research objects. Through analyzing these data to find out the lag factors affecting piano teaching to contribute to the reform and development of piano teaching in China's higher normal colleges and universities.

Keywords

1. Introduction

As the national "Double Reduction" policy (General Office of the CPC Central

Committee and General Office of the State Council of the People's Republic of China, 2021) for compulsory education students and the reform on the curriculum of art are carried forward, music education major in normal colleges and universities who is aimed to provide art teachers for compulsory education is confronted with the big development opportunities and challenges. Piano education constitutes an integral part of music education. Piano teaching quality has connection with music teaching quality. It is an important subject matter of the reform of music education in normal colleges and universities to improve piano teaching quality in normal colleges and universities.

At present, there are a huge number of works and papers of research and discussions on piano teaching in normal colleges and universities. This research mainly focusses on creation of textbooks, instructional contents, teaching modes, instructional evaluation, piano cultures and others. This research contributes to refinement of piano teaching and improvement of piano teaching quality to some extent. However, the research as above focuses mainly on one aspect, which is the effects of a single factor on piano teaching quality, such as selection of piano textbooks, organization of instructional contents or reform of teaching methods. What are factors that affect piano teaching quality? Few studies are on the relationship between factors and the influence. Methods used in the research focus more on literature research and action research and less on empirical research and quantitative research. Research results are less persuasive.

For this, an attempt is made in the study to identify the current status and existing problems in piano teaching in normal colleges and universities in China using the quantitative research method in an effort to find out the influencing factors for piano teaching quality in normal colleges and universities and to what extent such influences are. It's anticipated that this can help to build on the strategies of piano teaching and find the best path to raise piano teaching quality.

2. Materials and Methodologies

This paper uses a combination of qualitative and quantitative research methods. Qualitative research is to collect data through interviews and observations and analyze the data by means of content analysis. Quantitative research is conducted through the use of questionnaires to collect primary data on respondents and use descriptive statistical methods to explain the demographic characteristics and behaviors of respondents.

2.1 Population and Sample

Normal universities in China mainly composed of normal colleges and normal universities that train all kinds of teachers. According to the Statistical Bulletin on the Development of National Education in 2020 issued by the Ministry of Education, there are 2738 higher education institutions of all kinds in China (the list does not include the institutions of higher learning in the Hong Kong Special

Administrative Region, Macao Special Administrative Region and Taiwan), including 73 normal college and 71 normal universities. There are 129 music majors in normal universities (Leidenhag, 2021; Lougheed, 2020; Malcolm, 2020).

2.1.1 Qualitative survey sampling.

According to the situation of economic development and geographical division, five normal universities in South China, East China, central China and Northwest China were selected for interview and survey. Among them, one school was selected from Guangdong (economically developed area), two from Hunan (middle economic region), one from Jiangxi and one from Shaanxi(low economic region). For ease of description, G1, G2, G3, G4 and G5 are used to represent these five schools. Ten administrators, 15 full-time teachers and 20 students were interviewed in each sample school.

2.1.2 Quantitative survey samples

The sample target of this questionnaire is teachers, administrators and music education students who are engaged in piano teaching. Considering that the main objects of administrators are the dean of conservatory of music and the director of piano department, they are also piano teachers, so the administrators and teachers are sampled in a group. Therefore, the research sample is divided into two groups: teachers, administrators' group and students' group. According to the public data of the websites of five normal universities, the number of full-time teachers and administrators engaged in piano teaching of music education specialty in conservatory of music is 60. The number of students majoring in music education in conservatory of music is 1665.

According to (Yamane, 1967)$n = \frac{N}{1+N(e)^2}$ In this formula, n = sample size, N = population size, e = sampling error ± 5%.

For the questionnaires distributed to students, when N is 1665 and e is 0.05, the calculation result is 322.5, which is the sample size of students in theory. However, in order to ensure the representativeness and comprehensiveness of the sample size, as well as the compensation for the bad recovery caused by no response and unable to contact, the final determination of the sample size of 500 is reasonable.

For the questionnaires distributed to teachers and administrators, according to the calculation method of Yamane, when the statistical population is less than 300, the total population is taken as the sample number. Therefore, the sample size of the questionnaire is 60.

Finally, 560 questionnaires were distributed to students, teachers and administrators by snowballing.

2.2 Data Collection Method

For the acquisition of qualitative data, an actual survey was conducted on

five schools in the sampling scheme by interview and observation method and collected relevant information about piano teaching from the administrators of conservatory of music, piano teachers of music education major and students of music education major. The questionnaires were distributed on the spot in the music academies of these five schools, which was convenient to collect so as to improve the recovery rate of the questionnaires. If the respondents do not understand the questions, they can get answers on the spot to ensure the validity of the answers. Finally, 543 valid questionnaires were collected (60 from teachers and administrators, and 483 from students). Quantitative data are collected from the samples.

3. Results

3 .1 Qualitative Analysis
3.1.1 Teaching Facilities.

The question to the respondents is: "how about the equipment and facilities for piano teaching in your school?".

In G2, the current situation of piano teaching facilities is discussed as follows: There are modern multi-functional music teaching buildings with a building area of 19000 square meters with 287 pianos and 275 piano rooms. There are leading digital piano classroom, double keyboard electronic organ classroom, computer music production laboratory, digital recording studio, standardized dance classroom, multimedia classroom, experimental theater, etc.

In G3, the current situation of piano teaching facilities is discussed as follows: It has a 14000 square meter music building with complete facilities and three professional concert halls. There are more than 100 piano rooms for students and nearly 20 vocal and piano training rooms.

In G5, the current situation of piano teaching facilities is discussed as follows: There are 145 piano rooms, 5 concert halls with complete functions and advanced facilities, 16 professional laboratories and 47 practice places. Good teaching equipment provides excellent conditions for students in conservatory of music.

From the discussions above, we can see that the teaching facilities are relatively complete and can meet the needs of piano teaching.

3.1.2 Curriculum Setting.

"Is the design and class hour arrangement of piano curriculum scientific and reasonable in your school?".

Among the 5 normal universities investigated, the curriculum of music education lays more emphasis on the cultivation of professional quality. But there is a problem that it pays more attention to professional courses while ignoring public basic courses in G1, G2 and G4. The existing public basic courses are mainly traditional such as ideological and political courses, foreign language courses and computer courses that fail to innovate in content. As a result, the curriculum of the

school lacks characteristics and is difficult to form full attraction to students, which leads to the poor teaching effect, prominent problems in the formalization of public courses, and is unable to achieve the comprehensive development of students. Meanwhile, there are some problems in the professional curriculum of the five surveyed schools. The focus of the courses is limited to music theory, solfeggio training, Chinese and foreign music history and other theoretical courses. There are no clear piano teaching methods or professional courses for music teaching in primary and secondary schools. The teaching curriculum is limited to the common subjects such as pedagogy and psychology, which is unfavorable to the cultivation of teachers' professional ability. Students cannot master the professional ability or quality required by the teacher profession through college learning, which leads to the low teaching ability of students. They need more time to adapt to and learn after taking a job, which is not conducive to the scientific development of teachers.

3.1.3 Teaching Evaluation.

The first question about teaching evaluation is:"Are you satisfied with the effect of piano lessons offered by the school?"

The responses analysis of respondents from G1, G2, G3, G4 and G5 are shown in Figure 1. According to the interview results, the students all said that the time of practicing the piano had a direct impact on the class effect. Some students said that the difficulty of the repertoire was not suitable for them. Therefore, they felt boring and had no enthusiasm in practice.
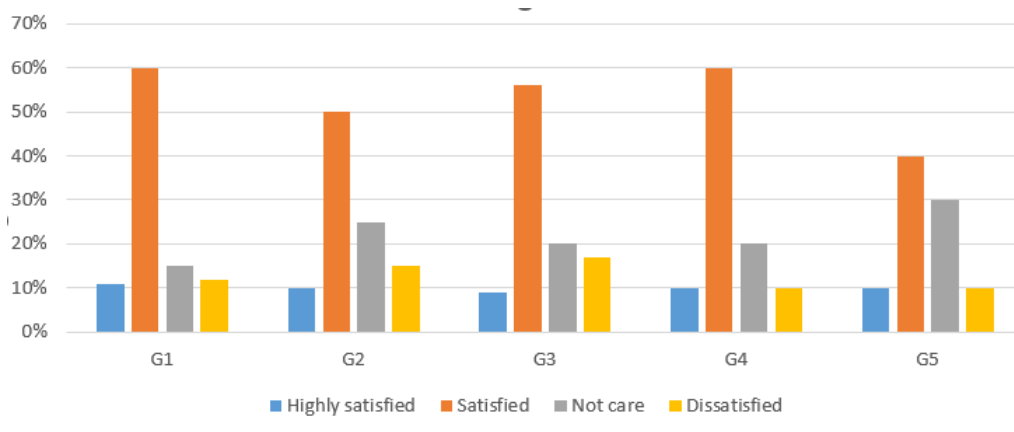

Figure 1 Evaluation of Piano Course

On teaching evaluation, the second question is: "How well do you understand the contents of the piano course?"
The responses analysis of respondents from G1, G2, G3, G4 and G5 are shown in Figure 2. From this point of view, most of the students in the five normal universities understand the content of the piano course and there are still some students not knowing, which indicates that the school should let students fully understand the teaching content of piano course and make clear the teaching
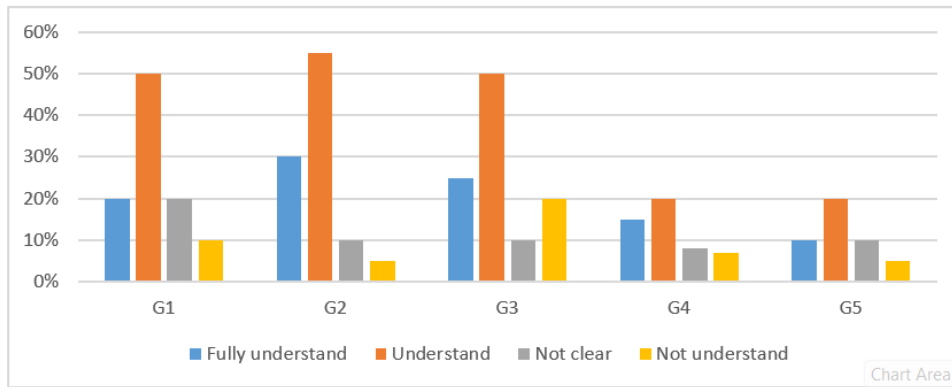
purpose.

Figure 2 Respondents' Understanding of Piano Lessons

The third question about teaching evaluation is: "Do you think the content of the piano course is reasonable?"

The responses of respondents from G1, G2, G3, G4 and G5 schools are analyzed. As is shown in Figure 3. From this point of view, most of the students think that the piano teaching content is reasonable. Those who think the course content is unreasonable consider that piano teaching content is too single. In the process of piano learning, the number of pieces of etudes and the difficulty span of music is relatively large.
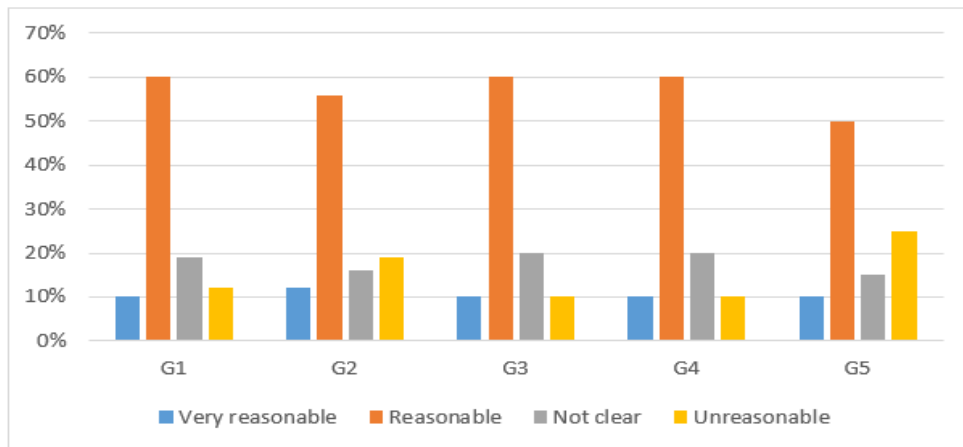
Figure 3 Respondents' Evaluation of Piano Course Content

The fourth question about teaching evaluation is: "Are you satisfied with the teaching of your piano teachers?"

The responses of respondents from G1, G2, G3, G4 and G5 schools are analyzed as is shown in table 1. Only 9.05% of all the respondents are very satisfied with the piano classroom teaching effect and 15.8% of them are not satisfied. Students' satisfaction of teachers' personal skills and literacy is high while their satisfaction of teachers' teaching methods is low. Only 11.07% of the total students feel satisfied or very satisfied.

Table 1 Respondents' Satisfaction with Teachers' Teaching

Project	Very Satisfied	Satisfied	Commonly	Dissatisfied
Personal Accomplishment	25.88%	57.52%	13.30%	3.30%
Professional Skills	38.42%	51.04%	10.47%	0.07%
Teaching Methods	4.66%	6.41%	65.15%	23.78%
Overall Effect	9.05%	44.00%	31.15%	15.80%

3.2 Analysis of Quantitative Research Data

3.2.1 Principal component analysis and factor analysis

The results of principal component analysis on the original data of the third part of the questionnaire through SPSS software are as follows:

Table 2 Explanation of Total Variance

z	Initial Eigenvalue			Extract the Sum of Squares of Loads		
	Total	Variance Percentage	Cumulative%	Total	Variance Percentage	Cumulative %
1	10.837	43.438	43.438	10.837	43.438	43.438
2	4.8022	23.207	66.555	4.8022	23.207	66.555
3	3.282	8.240	74.795	3.282	8.240	74.795
4	2.060	6.224	81.019	2.060	6.224	81.019
5	1.556	4.958	85.977	1.556	4.958	85.977
6	1.239	4.000	89.977	1.239	4.000	89.977
7	0.580	2.884	92.861			
8	0.404	2.414	95.275			
9	0.368	1.471	96.476			
10	0.275	1.081	97.827			
11	0.179	0.717	98.544			
12	0.139	0.558	99.101			
13	0.103	0.414	99.515			
14	0.048	0.193	99.708			
15	0.043	0.178	99.885			
16	0.029	0.115	100.000			
17	$5.824E{-}16$	$2.329E{-}15$	100.000			
18	$2.436E{-}16$	$9.744E{-}16$	100.000			
19	$1.199E{-}16$	$4.795E{-}16$	100.000			
20	$1.312E{-}16$	$5.246E{-}16$	100.000			
21	$-1.576E{-}16$	$-6.304E{-}16$	100.000			
22	$-2.433E{-}16$	$-9.772E{-}16$	100.000			
23	$-2.939E{-}16$	$-1.176E{-}15$	100.000			
24	$-4.332E{-}16$	$-2.133E{-}15$	100.000			
Extraction method: principal component analysis.						
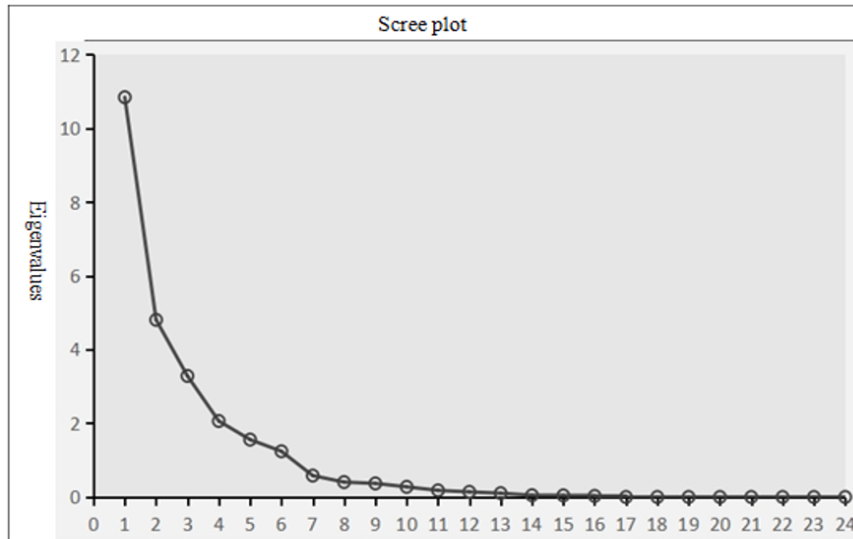
Figure 4 Factor Analysis Gravel Map

Table 3 Composition Matrix after Rotation

Item	Component					
	1	2	3	4	5	6
Question 1			0.676			
Question 2			0.763			
Question 3			0.781			
Question 4			0.743			
Question 5	0.674					
Question 6	0.647					
Question 7	0.768					
Question 8	0.745					
Question 9						0.636
Question 10						0.687
Question 11						0.603
Question 12						0.631
Question 13		0.815				
Question 14		0.793				
Question 15		0.832				
Question 16		0.794				
Question 17					0.657	
Question 18					0.715	
Question 19					0.684	
Question 20					0.765	
Question 21				0.725		
Question 22				0.718		
Question 23				0.803		
Question 24				0.747		
Extraction Method: Principal Component Analysis. Rotation Method: Caesar Normalization Maximum Variance Method						
a. The Rotation Converges After 6 Iterations						

The factor analysis of the scale was carried out by principal component

analysis, and the factor rotation was carried out with the maximum variance orthogonal rotation. The factor whose eigenvalue was greater than 1 was taken as the common factor, that is, the principal component. The results showed that there were six principal components, which meant that the scale could extract six variables, verifying the rationality of dividing the scale into six variables. The interpretation rate of the total variance of the six principal components was 89.977%, indicating that the six variables included in the scale had a high degree of interpretation.
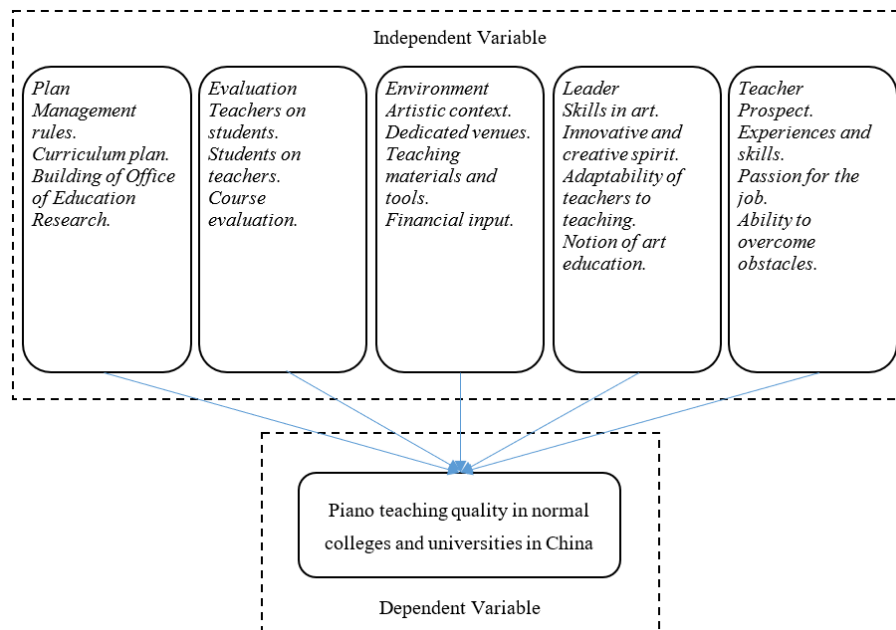
In addition, according to the content of the items corresponding to each principal component, the six components are: "plan" -- the items included are questions 1-4; "evaluation" -- questions 5-8; "environment" --questions9-12;"leadership"--questions13-16; "teacher" --questions 17-20; "teaching quality" --questions 21-24.

3.2.2 Analysis of Variance (ANOVA)

The homogeneity of variance test was conducted on the data, and it was found that the data of each index did not show significant differences, so ANOVA was conducted to observe the degree of dispersion of the data. Through ANOVA, it was found that gender, age, identity, school nature, regional difference, entry mode, professional title and other teaching work indicators did not show significant differences in the components of teaching quality, leadership factor, environment factor, evaluation factor, planning factor and teacher factor among different samples (p >0.05).

However, the variance analysis of education background and teaching age index found that different education samples showed significant differences to a certain factor. In ANOVA of educational background, the samples with different educational background showed consistency in teaching quality, leadership factor,

environment factor, evaluation factor and planning factor. However, different educational samples showed significant differences to teacher factors, which indicated that there may be some differences between teachers with different educational levels. At the same time, ANOVA was used to study the differences of teaching quality, leadership factor, environment factor, evaluation factor, planning factor and teacher factor of different teaching ages. It was found that the teaching quality, leadership factor, environment factor, evaluation factor and teacher factor of samples of different teaching ages showed consistency and the differences were not significant. However, it can be seen that different teaching ages show significant differences in planning factors which indicates that teachers of different teaching ages may have different understandings of planning factors.

3.2.3 Correlation Analysis.

To identify the relationship among the variables including plan, evaluation, environment, leader, teacher and teaching quality, a Karl Pearson's method is used. The result is shown in Table 4 below.

Table 4 Correlation Test among Variables

		Plan	Evaluation	Environment	Leader	Teacher	Teaching quality
Plan	Pearson correlation	1	0.234*	0.289**	0.243**	0.311**	0.503**
	Significance level (2-tailed)		0.015	0.002	0.006	0.001	0.000
	Number of cases	543	543	543	543	543	543
Evaluati	Pearson correlation	0.234*	1	0.461**	0.221*	0.453**	0.631**
	Significance level (2-tailed)	0.015		0.001	0.032	0.001	0.000
	Number of cases	543	543	543	543	543	543
Environ	Pearson correlation	0.289**	0.461**	1	0.198*	0.411**	0.642**
	Significance level (2-tailed)	0.002	0.001		0.046	0.002	0.000
	Number of cases	543	543	543	543	543	543
Leader	Pearson correlation	0.243**	0.221*	0.198*	1	0.368**	0.506**
	Significance level (2-tailed)	0.006	0.032	0.046		0.001	0.000
	Number of cases	543	543	543	543	543	543
Teacher	Pearson correlation	0.311**	0.453**	0.411**	0.368**	1	0.678**
	Significance level (2-tailed)	0.001	0.001	0.002	0.001		0.000
	Number of cases	543	543	543	543	543	543
Teachin	Pearson correlation	0.503**	0.631**	0.642**	0.506**	0.678**	1
	Significance level (2-tailed)	0.000	0.000	0.000	0.000	0.000	
	Number of cases	543	543	543	543	543	543
*. Significant at the 0.05 level (2-tailed).							
**. Significant at the 0.01 level (2-tailed).							

According to the analysis result in Table 4, correlation coefficients between variables including plan, evaluation, environment, leader, teacher and teaching

quality are respectively 0.503, 0.631, 0.642, 0.506 and 0.678. Significance levels of them are all lower than 0.05, which is of significant meaning in statistics. It indicates that significant positive correlation exists between teaching quality and each of five factors including plan, evaluation, environment, leader and teacher.

3.2.4 Regression Analysis.

It can be seen from the result in Table 5 that the effects of five independent variables on the dependent variable in the model all pass the test of significance at the 95% confidence level and the standardized coefficients are all positive. This indicates that the independent variables have significantly positive effects on the dependent variable (teaching quality). Among them, the standardized coefficient is 0.322 between plan (independent variable) and teaching quality (dependent variable), 0.153 between evaluation (independent variable) and teaching quality (dependent variable), 0.197 between environment (independent variable) and teaching quality (dependent variable), 0.262 between leader (independent variable) and teaching quality (dependent variable) and 0.437 between teacher (independent variable) and teaching quality (dependent variable). These five independent variables are sequenced by their effect on dependent variable as teacher > plan > leader > environment > evaluation.

Table5 Table of Regression Coefficient

Model		Unstandardized coefficient		Standardized coefficient	T value	Significance level	Collinearity statistics	
		B	Std. error				Tol.	VIF
1	(constant)	-0.502	0.374		-1.303	0.285		
	Plan	0.226	0.071	0.322	3.178	0.003	0.858	1.165
	Evaluation	0.224	0.100	0.153	1.247	0.045	0.457	2.189
	Environment	0.320	0.107	0.197	2.067	0.031	0.500	1.999
	Leader	0.304	0.073	0.262	2.782	0.006	0.836	1.196
	Teacher	2.237	0.089	0.437	3.612	0.000	0.473	2.114
a. Dependent variable: teaching quality								

4. Conclusion

Through the investigation and data analysis of the current situation of piano teaching in music education major in the five normal universities, some preliminary findings are obtained, which can be summarized as follows:

(1) Through the questionnaire, six main variables were found, which were plan, evaluation, environment, leadership, teacher and teaching quality. According to the results of correlation analysis, the five factors of plan, evaluation, environment, leadership and teacher have significant positive correlation with teaching quality. The order of the influence degree of the

five independent variables on the dependent variable is: teacher > plan > leadership > environment > evaluation.

(2) Through field investigation, it is found that the piano teaching facilities in most normal colleges are relatively complete and can meet the teaching needs.

(3) Through the interview, it can be known current piano major focuses more on the cultivation of professional quality and there is a problem that it pays more attention to professional courses while ignoring public basic courses, which fails to achieve the comprehensive development of students.

(4) Some students are not satisfied with class teaching effect, and they have a low satisfaction with teachers' teaching methods.

5. Suggestions

As discussed above, some basic ideas and suggestions are communicated in respect of the strategies to improve piano teaching quality in normal colleges and universities. These may likely direct the future research on piano teaching in normal colleges and universities.

5.1 To Value the Construction of Teaching Staff

The research result shows that the teacher factor influences teaching quality most. Therefore, the key point of raising the instructional level of piano major in normal colleges and universities lies in setting up a contingent of teachers who are comprehensively top-performing, professional and innovative. First of all, post service education of piano teachers in normal colleges and universities should be strengthened. Targeted training and career plans for teachers should be developed. Secondly, a talent pool of teachers should be made available and a high-level innovative contingent of piano teachers set up. Teachers work together for modular teaching. Thirdly, additional male piano teachers in normal colleges and universities should be employed. This practice contributes to adjusting the male-female ratio out of balance of piano teachers in China. It is also conducive to eliminating the feminization of boys that generally exists in adolescent education in China (Yu Shijie, 2015, p.176). Fourthly, more ways should be used to raise the instructional level such as regular delegation of teachers for piano teaching and research in the famous art schools at home and abroad. Fifthly, a center for development of piano teachers should be built in normal colleges and universities to raise the teaching and researching ability of piano teachers and hence promote the piano teachers in normal colleges and universities to develop their career.

5.2 To Value the Development of Instructional Conditions

Instructional conditions are a crucial factor that may influence teaching quality seeing that instructional conditions and teachers' activities are interacted with instructional procedures and effects (Liu Canhua, 1999, p.8). Firstly, classroom conditions workable for piano teaching should be made available.

Ornaments and pendants in the classrooms can functionally help with piano teaching, thereby allowing students to gain the knowledge unintentionally. Secondly, physical conditions in favor of piano teaching should be made available. Melodies, playing skills and verbal demonstration in piano teaching are all presented on a piano. On that account, pianos of good quality should be used in teaching (Zhao Jianbin, 2012). Thirdly, piano teaching is empowered by digital networking. Fourthly, importance should be attached to the imperceptible influence of campus culture on piano teaching.

5.3 To arrange teaching content scientifically

Piano teaching includes various contents. In addition to the practice of basic skills, there are polyphonic music, large music and piano improvisational accompaniment. Therefore, it is essential to optimize piano teaching contents and enrich the piano teaching content to offer comprehensive and high-end piano education. Based on that, teachers should integrate and summarize piano teaching resources to make them more systematic and comprehensive, which contains not only music knowledge and music skills, but also spiritual thought and cultural connotation so that the whole piano teaching content covers psychology, aesthetics, art and culture and other aspects (Wang Bo, 2016). Furthermore, on the basis of continuous analysis and overall planning, the piano theoretical knowledge base is established. In addition, teachers should learn from each other's to constantly absorb excellent knowledge and culture to enrich the content of piano teaching and promote the continuous development of students.

5.4 To improve teaching methods

Teaching method is the way of curriculum implementation, the quality of teaching method directly affects the effect of teaching quality and ultimately affects the quality of talent training (Zuo Li, 2019). Combining with the current situation of piano students in normal universities in China, it is advised to adopt hierarchical teaching which can be separated reasonably by judging students' acceptance ability and then different teaching plans and tasks can be formulated according to the inconsistency of students' level, so that students' piano level can be improved to a certain extent. At the same time, it is necessary to innovate teaching mode and adopt more reasonable, scientific and effective teaching method including the concert form, criticism and discussion to make the teaching more targeted, enhance students' learning efficiency and increase the effectiveness of the piano teaching in normal universities. In addition, piano teaching can also be carried out through "five steps of teaching" (Zhou Bo, 2010), including lesson preparation after class, classroom teaching, guidance after class, teaching reform, test and summary, which helps the completion of teaching tasks through the formation of communication between teachers and students.

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