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Current Situation and Factors Affecting the Musical Performance of Prospective Music Teachers

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Annotation. Musical performance is the key content in the process of music education. Therefore, it is important for us to explore the current situation and factors affecting musical performance and further develop relevant skills for prospective music teachers. This study surveying 586 prospective music teachers using a questionnaire, the results indicate that physiological factors are the most important factors affecting musical performance, followed by psychological factors.

Keywords: *prospective music teachers, musical performance, current situation, factors.*

Introduction

Musical performance is one of the important ways to communicate and to develop music, which builds a bridge for music educators and is also an indispensable part of music education. Ongoing research in the field of musical performance underscores its enduring significance (Bennett et al., 2018; Park et al., 2018; Reifinger Jr., 2016; Robertson, 2023; Utomo et al., 2019).

The improvement of musical performance skills is an integral part of the professional growth of music teachers. Proficiency in musical performance is a fundamental requirement for every prospective music teacher (Park et al., 2018; Salendab, 2023). Singing performance, instrument performance (Limkar & Chandekar, 2023), and conducting performance are the three basic components of musical performance skills. Through

the specific performance, it can not only improve the inner appeal of the music, but also cultivate the audience's ability to appreciate and understand the music (Thompson et al., 2023; OpenAI, 2023). Prospective music teachers represent a significant presence within arts colleges and universities, carrying the responsibility of teaching musical performance instruction and the level of their performance ability directly impacts the quality of education. Therefore, considering the development of prospective music teachers' performance skills is of utmost importance (Bennett et al., 2018; Limkar & Chandekar, 2023; Park et al., 2018; Reifinger Jr, 2016; Robertson, 2023; Salendab, 2023; Thompson et al., 2023; Utomo et al., 2019).

Factors that influence the performance of prospective music teachers can be categorized into internal and external factors, as highlighted in various studies (Antonini Philippe et al., 2020; Bailey & Penhune, 2010; Biletska et al., 2020; Davidson, 2002; Goehr, 2015; Leung & McPherson, 2011; Papageorgi et al., 2007; Pecen et al., 2018; Rodrigues et al., 2019; Ruthsatz et al., 2008). University teachers and students involved in musical performance on stage, whether singing or playing, must possess a strong psychological foundation and solid basic skills. They need to develop and nurture their internal musical potential, accumulate their own stage performance experience, master stage performance techniques, enhance their resilience on stage, and improve their overall stage presence (Robertson, 2023; Pecen et al., 2018; OpenAI, 2023). Psychological factors that affect performance are often overlooked, making the exploration of these factors crucial. Derakhshan believes that psychological factors encompass a range of dynamic psychological processes. These factors intricately intertwine with an individual's mental, emotional (Derakhshan et al., 2023; Simpson et al., 2023), personal characteristics (Luo et al., 2023), and attitudes (Leung & McPherson, 2011), personal characteristics (Luo et al., 2023), and more, shaping the complex landscape of their thoughts, feelings, and reactions to various stimuli. Internal factors influencing musical performance improvement also include physiological factors (Xu & Xu, 2023), especially innate physical conditions (Belingheri et al., 2023) and psycho-physiological differences (Delleli et al., 2023). Another internal factor affecting the enhancement of musical performance is preparation factors (Antonini Philippe et al., 2020; Goehr, 2015). Experience preparation (Antonini Philippe et al., 2022) is one of its aspects. When faced with technical difficulties, experienced prospective music teachers require less time and effort compared to their inexperienced counterparts (Bailey & Penhune, 2010; Davidson, 2002). Increasing stage performance experience, improving stage practice skills, and nurturing interest are all essential to enhance singing skills. Another component of preparation factors is technical preparation (Avila et al., 2019; Papageorgi et al., 2007). Factors such as instrument accessibility, the extent of student practice, and other associated elements play a pivotal role in exerting a substantial impact on the performance proficiency of prospective music teachers. These aspects collectively contribute to shaping the overall performance capabilities of individuals on the path to becoming music educators (de Bruin & Merrick, 2023). Important external

factors affecting the enhancement of musical performance for prospective music teachers include environmental factors, adaptation to new environments (Ruthsatz et al., 2008), access to training facilities (Zhang, 2022), and the educational environment. Appropriate training exercises and guidance play a crucial role in improving performance skills and achieving higher levels of performance in a shorter period of time. Humanistic factors are also significant external factors that cannot be ignored. Positive, enthusiastic, and inspiring teachers and peer support have a positive influence on the promotion of musical performance (Antonini Philippe et al., 2022; Bonneville-Roussy et al., 2020).

This research reveals the current situation and influencing factors of musical performance of prospective music teachers. The significance is to help future music educators clarify their roles and positioning, provide valuable perspectives and insights into the field of music educatio, and provide more accurate training methods for prospective music teachers.

Research questions:

What is the current situation of musical performance among prospective music teachers?

What factors influence the musical performance of prospective music teachers?

The research object is the musical performance of prospective music teachers.

The research aim is to reveal the current situation and factors that affect the musical performance of prospective music teachers.

Research objectives:

To analyse the current situation of musical performance among prospective music teachers.

To determine the influence of psychological factors, physiological factors, preparation factors, environmental factors, and humanistic factors on the musical performance of prospective music teachers.

To highlight the differences in the current situation and influencing factors of musical performance among prospective music teachers based on gender, educational background, and major.

Methods

The foundational steps of quantitative research. It initiates with the authors' meticulous selection of research topics, followed by an exhaustive review of relevant literature. Subsequently, researchers proceed to gauge the pertinent factors and design the research methods. This is complemented by the deliberate selection of research subjects and the rigorous confirmation of the chosen sampling method. Once the data collection process is concluded, researchers transform the collected information into a format compatible with computer analysis, thereby allowing for data quantification. Finally, the collected data are interpreted and compared to form a comprehensive research report (Choy, 2014).

The survey was conducted with 586 prospective music teachers. Currently, the development of music education is not evenly balanced; some regions have taken a leading position, while others are still in an exploratory stage. To address this, a questionnaire that covered music universities in different regions was used. A simple random sampling method (Bhardwaj, 2019) was applied to ensure that our survey data were diverse and comparative. This research used a structured questionnaire and its forms were distributed to the respondents in 11 most representative independent music universities in China through various means, including requests to fill in online questionnaires and sharing links in chat groups. After receiving the desired number of responses, the quality of the questionnaires was evaluated, excluding any questionnaires that did not meet the required standards. The data from the valid questionnaires were summarized to obtain intuitive and effective survey data. Using Excel and SPSS software, the issues addressed in the questionnaire were categorized and statistical analysis of various objects was performed.

Descriptive statistical analysis was performed on the following scales: (1) the current situation of musical performance, (2) different major levels, and (3) influencing factors. In addition, independent sample T-test and one-way ANOVA analyses were used to examine demographic variables related to the current situation of musical performance and influencing factors. These analyses assessed differences based on gender, educational background, and major in both musical performance and influencing factors.

Results

Basic Information Distribution

Among the 586 prospective music teachers surveyed, 381 were women, comprising 65% of the sample, while 205 were men, making up 35% of the sample. In terms of educational background, the majority were undergraduate prospective music teachers (293, 50% of the sample), followed by 205 postgraduate degree prospective music teachers (35%). There were also 59 prospective music teachers with college or other degrees, constituting 10% of the sample, and the smallest group had doctoral degrees, comprising only 5% of the total. Referring to the majors of prospective music teachers, the largest group is in the piano major, representing 45% of the total. This is followed by vocal music majors at 32%, chorus conducting majors at 13%, other musical instrument majors at 8%, and other majors, which make up the smallest group at 2%.

Descriptive Statistics Analysis

The survey of the current level of performance of prospective music teachers primarily assesses their abilities in singing, instrumental musical performance, and conducting. Factors that influence musical performance include physiological, psychological,

preparation, environmental and humanistic factors, which are evaluated in terms of cognitive levels. All measurements were made using a 5-point Likert scale, with 3 representing a theoretical medium level. If the mean value exceeds 3, it indicates a high cognitive or ability level, while a value below 3 indicates a low level. To analyse the current state of the musical performance skills and cognitive factors of prospective music teachers, a combination of frequency + percentages and mean ± standard deviation measurements was used.

Descriptive statistics analysis of the current situation of musical performance

Table 1

Musical Performance Descriptive Statistics Analysis

Variable	N	Min	Max	Mean	SD	Skewness	Kurtosis
Musical performance		1.33	4.75	3.54	0.84	-0.953	-0.398
Singing performance	586	1.00	5.00	3.54	1.05	-1.048	-0.297
Instrumental performance		1.00	5.00	3.68	0.95	-1.357	0.768
Conducting performance		1.00	5.00	3.41	1.08	-0.847	-0.697

In descriptive statistics for the overall level and dimensions of musical performance, it shows the current situation of musical performance among prospective music teachers, the average score for overall musical performance level is 3.54. This suggests that the level of the current situation of musical performance skills among prospective music teachers falls within the medium range. When examining specific dimensions, instrumental performance levels are higher than those of singing and conducting. The reason for this result may be due to the fact that playing the instrument requires more time and effort, and therefore, obtains a higher level. This distinction may explain why instrumental performance tends to be relatively easier to excel at on an individual level.

Among the distribution characteristics of the data, These results indicate that the data for all variables in this study exhibited characteristics that approximate a normal distribution.

Descriptive statistical analysis of the influencing factors

Factors that influence musical performance include psychological, physiological, preparation, environmental, and humanistic factors. Subsequently, each of these factors is subjected to descriptive statistical analysis.

Table 2

Descriptive Statistical Analysis of the Influencing Factors

Variable	N	Min	Max	Mean	SD	Skewness	Kurtosis
Psychological factors		1.5	4.9	3.71	0.61	-1.013	0.807
Emotion		1	5	3.77	0.88	-1.337	1.293
Attitude		1	5	3.55	1.32	-0.646	-1.101
Personal characteristics		1.2	5	3.74	0.83	-1.268	0.613
Physiological factors		1.3	5.0	3.79	0.81	-1.401	1.173
Physical conditions		1.0	5.0	3.77	1.06	-1.242	0.307
Psycho-physiological factors		1.0	5.0	3.82	0.87	-1.389	1.668
Preparation factors	586	1.2	5.0	3.63	0.90	-1.146	0.29
Experience preparation		1.0	5.0	3.63	1.14	-0.841	-0.462
Technical preparation		1.0	5.0	3.63	1.02	-1.191	0.231
Environmental factors		1.1	5.0	3.57	0.82	-0.83	-0.009
Performing environment		1.0	5.0	3.58	0.99	-1.041	-0.082
Education environment		1.0	5.0	3.57	1.17	-0.876	-0.58
Humanistic factors		1.3	5.0	3.66	0.77	-1.194	0.614
Teacher		1.3	5.0	3.69	0.89	-1.196	0.441
Student		1.0	5.0	3.61	1.03	-0.968	0.195

Through the descriptive statistics analysis of influencing factors and their sub-dimensions among prospective music teachers, we are able to gain an in-depth understanding of the psychological, physiological, preparation, environmental, and humanistic factors influencing musical performance. we observed that all factors and secondary dimension variables exhibit characteristics of a normal distribution, which provides us with a comprehensive understanding of the musical performance of prospective music teachers. Among these factors, physiological factors scored the highest, emphasizing that the majority of prospective music teachers possess good physical conditions for musical performance. The second is the psychological factor, which shows that the respondents perform well in the psychological quality of musical performance. Humanities factors ranked third in the overall average score, above the median, reflects the importance of teacher support and guidance to the performance of prospective music teachers. This suggests that educators' role modeling and educational philosophy significantly influence the musical performance aspect of cultivating prospective music teachers. The overall mean score for preparation factors is 3.63, indicating that the majority of prospective music teachers are adequately prepared for musical performance. However, there is still a subset of prospective music teachers who are inadequately prepared. Within the sub-dimensions of preparation factors, there is no significant difference in the average

scores for experience preparation and technical preparation, emphasizing their equal importance in ensuring readiness for musical performance.

The lowest overall average score is attributed to environmental factors, indicating that, among the surveyed prospective music teachers, the majority perceive environmental factors as having a relatively low impact on future music teacher performance. However, environmental factors cannot be ignored. This comprehensive analysis can help better understand the influence of various factors on the musical performance of prospective music teachers.

Differential Analysis

Since the variables of musical performance and influencing factors are normally distributed, the difference analysis of the demographic variables in the current situation of musical performance and the influencing factors will be further analysed by including independent sample T-tests and one-way analysis of variance (ANOVA), with a reference significance level of 0.05.

Differences between gender, educational background, major in current situation of musical performance

Table 3

(1). Difference Analysis of Musical Performance Current Situation of Prospective Music Teachers With Different Genders (T-test)

Variable	Musical performance	Singing performance	Instrumental performance	Conducting performance
Man	3.43±0.85	3.27±1.13	3.47±1.01	3.55±0.96
Woman	3.60±0.83	3.69±0.98	3.79±0.90	3.33±1.13
T	-2.40	-4.54	-3.78	2.49
P	0.017	<0.001	<0.001	0.013

In overall musical performance, the T-test value was -2.4 with a p-value of 0.017, which is less than the 0.05 significance level. This indicates that there are significant differences in the overall musical performance between male and female prospective music teachers, with women exhibiting a significantly higher performance level. In terms of secondary indicators, women had higher proficiency in singing and instrumental performance, demonstrating their musical talent. Men are more capable in conducting performance, which reflects the impact of gender differences on musical performances, and should give play to their advantages according to different genders.

Table 4

(2). Difference Analysis of Musical Performance Current Situation of Prospective Music Teachers With Different Educational Background (one-way ANOVA)

Variable	Musical performance	Singing performance	Instrumental performance	Conducting performance
Doctor[1]	3.63±0.74	3.77±1.00	3.53±0.98	3.58±0.88
Postgraduate[2]	3.69±0.77	3.64±1.00	3.86±0.77	3.56±1.01
Undergraduate[3]	3.54±0.86	3.55±1.04	3.69±0.96	3.37±1.11
Collage and Other[4]	3.04±0.85	3.06±1.23	3.05±1.22	3.01±1.14
F	9.564	5.195	11.914	4.527
P	<0.001	0.002	<0.001	0.004
Post Hoc Tests	1>4,2>3>4	1>4,2>4,3>4	1>4,2>3>4	1>4,2>4,3>4

The results of the one-way ANOVA analysis are presented in Table 8. shed light on the relationship between educational background and various factors of musical performance. Notably, there were statistically significant differences in overall musical performance based on educational background (F = 9.564, p < 0.001). Upon conducting multiple comparisons and mean assessments, this implies a positive correlation between higher education background and elevated musical performance skills.

Further exploration of secondary indicators, prospective music teachers at distinct educational levels manifested significant differences in singing, instrumental, and conducting performance. Notably, doctoral students showcased the highest levels of performance across all three categories, followed by postgraduate, undergraduate, and college and other prospective music teachers, with the latter group displaying comparatively lower performance levels. These findings emphasize a clear association between higher educational backgrounds and enhanced proficiency in singing, instrumental, and conducting performance.

Table 5

(3). Difference Analysis of Musical Performance Current Situation of Prospective Music Teachers With Different Major (one-way ANOVA)

Variable	Musical performance	Singing performance	Instrumental performance	Conducting performance
Vocal music[1]	3.67±0.70	3.83±0.74	3.71±0.91	3.46±1.07
Piano[2]	3.52±0.91	3.34±1.17	3.78±0.91	3.44±1.07
Other instrumental[3]	3.36±0.86	3.59±1.10	3.45±1.11	3.05±1.19
Chorus conducting[4]	3.63±0.76	3.67±1.00	3.58±0.96	3.64±0.86
Other[5]	2.22±0.50	2.33±0.81	2.42±0.97	1.90±0.61
F	9.886	10.803	7.258	8.688
P	<0.001	<0.001	<0.001	<0.001
Post Hoc Tests	1>3>5,2>5	1>2>5,3>5,4>2>5	1>; 2>3>5; 4>5	1>2>3>5,4>5

The results of the one-way ANOVA analysis for prospective music teachers with different majors on their current musical performance situation are presented in Table 9. Notably, there are significant statistical differences in overall musical performance ($F = 9.886$, $p < 0.001$). Prospective music teachers majoring in vocal music exhibited a significantly higher overall performance level compared to other majors, followed by prospective music teachers of conducting and piano.

Differences between gender, educational background, major in the influencing factors

Table 6

Difference Analysis of Musical Performance Influencing Factors of Prospective Music Teachers With Different Genders (T-test)

Variable	Gender	N	M	SD	T	P
Psychological factors	Man	205	3.85	0.59	4.12	<0.001
	Woman	381	3.63	0.60		
Emotion	Man	205	3.85	0.81	1.725	0.085
	Woman	381	3.72	0.91		
Attitude	Man	205	3.85	1.20	4.247	<0.001
	Woman	381	3.39	1.35		
Personal characteristics	Man	205	3.85	0.77	2.355	0.019
	Woman	381	3.68	0.86		

In the analysis of differences in various influencing factors among prospective music teachers of different genders, psychological factors demonstrating significant differences between male and female prospective music teachers, male prospective music teachers have significantly higher overall psychological quality than their female counterparts. Among the secondary indicators, male prospective music teachers scored significantly higher than female prospective music teachers, suggesting that males exhibit greater endurance, willpower, and other personal characteristics related to attitudes and performance. Through these differences, the needs and advantages of different genders can be considered, resulting in more targeted strategies to develop the performance capabilities of prospective music teachers. And there were no significant differences in physiology, preparation, environment, and humanistic factors.

Table 7

Difference Analysis of Musical Performance Influencing Factors of Prospective Music Teachers With Different Educational Background (one-way ANOVA)

Variable	F	P	Variable	F	P
Psychological factors	4.343	0.005	Preparation factors	10.874	<0.001
Emotion	2.445	0.063	Experience preparation	6.483	<0.001
Attitude	4.849	0.002	Technical preparation	8.426	<0.001
Personal characteristics	0.924	0.429	Environmental factors	10.498	<0.001
Physiological	4.924	0.002	Performing environment	8.261	<0.001
Physical conditions	4.58	0.004	Educational environment	6.008	<0.001
Psycho-physiological factors	3.726	0.011	Teacher factors	3.312	0.02
Humanistic factors	3.838	0.01	Student factors	1.8	0.146

The one-way ANOVA analyses conducted on prospective music teachers with varying educational backgrounds unveiled notable distinctions in psychological and physiological, preparation, environmental, and humanistic factors (Table 7). In terms of psychological quality, doctoral prospective music teachers exhibited significantly higher levels compared to other degree levels, while college prospective music teachers had lower levels. Similarly, these differences are also found in physiological factors, preparation factors, environmental factors and humanistic factors.

These analyses reveal differences between prospective music teachers with different educational backgrounds. The results show that higher educational background is positively correlated with higher quality and ability of musical performance.

Table 8

Difference Analysis of Musical Performance Influencing Factors of Prospective Music Teachers With Different Major (one-way ANOVA)

Variable	F	P	Variable	F	P
Psychological factors	12.533	<0.001	Preparation factors	9.315	<0.001
Emotion	11.683	<0.001	Experience preparation	11.858	<0.001
Attitude	0.847	0.496	Technical preparation	5.403	<0.001
Personal characteristics	6.596	<0.001	Environmental factors	13.7	<0.001
Physiological factors	8.218	<0.001	Performing environment	7.754	<0.001
Physical conditions	8.047	<0.001	Educational environment	9.883	<0.001
Psycho-physiological factors	8.154	<0.001	Teacher factors	13.165	<0.001
Humanistic factors	12.333	<0.001	Student factors	9.867	<0.001

In the first dimension of the one-way ANOVA for prospective music teachers with different majors, significant statistical differences were found in overall psychological, physiological, preparation, environmental, and humanistic factors (Table 8).

Regarding psychological factors, prospective music teachers majoring in vocal music demonstrated the strongest psychological attributes, surpassing other majors, followed by choral conducting. This indicates that the prospective music teachers of vocal music majors show stronger psychological ability in musical expression and emotional communication. It is of profound significance to cultivate prospective music teachers' ability of emotion expression and music understanding. In terms of physiological factors, the prospective music teachers of piano major showed better physical characteristics. This may reflect that prospective music teachers in the piano major have higher demands on hand coordination and physical skills, which are essential to meet the practical requirements of musical performance. The analysis of preparation factors showed that the overall preparation of the piano major was better, followed by the vocal music major. This indicate that the piano major emphasizes music theory and technical preparation. In terms of environmental factors, the prospective music teachers of vocal music major showed strong adaptability, followed by the prospective music teachers of piano major. This suggests that vocal music majors are relatively more adaptable and able to use their talents more successfully in a variety of musical environments. In the analysis of humanistic factors, prospective music teachers majoring in choral conducting demonstrated the highest level, followed by other musical instrument majors. This highlights the emphasis the choral conducting major places on humanistic literacy and interpersonal interaction, which are essential for developing the social skills and instructional interactions of music educators.

In the secondary dimension, there are significant differences among the prospective music teachers in different majors. Prospective music teachers of vocal and choral conducting scored higher on emotional and personal characteristics. In terms of physical condition, prospective music teachers majoring in piano demonstrate an advantage, especially in terms of physical coordination. In terms of psycho-physiological factors, prospective music teachers in other musical instrument majors showed a higher level. In terms of experience preparation, prospective music teachers in vocal music majors shown rich experience. In terms of technical preparation, the level of preparation among prospective piano teachers surpasses that of teachers in other majors, followed by teachers in vocal music majors. This underscores the technical emphasis within the piano major. In terms of performance environment, the prospective music teachers of vocal music major showed strong adaptability. Therefore, students should be trained to adapt to different performance environments in music education. In terms of the educational environment, prospective music teachers majoring in piano showed a higher level. This has led to thinking about how to improve the educational environment to ensure that students receive the best possible support. In terms of teacher factors, prospective music teachers of other musical instrument majors have higher expectations for teachers, and

in terms of student factors, choral conducting music teachers have higher requirements for students. This difference reflects the different expectations of teaching and student interaction among different majors, highlighting the need to take into account the specific characteristics of each major when preparing music educators.

The analysis reveals the unique influence of different majors in the musical performance of prospective music teachers. It provides valuable insights into teaching and training in the field of music education, to help us develop and enhance the capacity of future music educators in a more effective and targeted manner.

Discussion

Scientific analysis of the data reveals the current situation of prospective music teachers musical performance, in general, their musical performance is at an medium level. Among the various dimensions, instrumental musical performance ranks the highest, followed by singing performance, while conducting performance shows a relatively lower level. In summary, among prospective music teachers, instrumental musical performance exceeds both singing and conducting performance in terms of their current abilities, this reveals the differences in their musical performance skills across various domains.

The physiological factors, innate physical conditions and intellectual differences of prospective music teachers important affect their musical performance skills (Novosiadla, 2023; Rosset et al., 2022). To test this conclusion, the investigator continuously investigated the bending of the left lower arm of long practicing soloists and band violator, The discovery that the soloist's left lower arm is much more flexible than the band's violator proves that the practice does not make the soloist more flexible, but that the innate physical conditions give the soloist better support and the possibility of becoming a soloist believes that the physiological factors affecting musical performance skills mainly include the health of vocal organs and the impact of poor living conditions on the body (Sokolova, 2023). In this study, the physiological factor was the first largest factor affecting the musical performance of prospective music teachers, and the second dimension of this factor was deeply studied, physical conditions and psycho-physiological factors, when examining sub-dimensions, psycho-physiological factors scored higher compared to physical condition. Therefore, in terms of musical performance skills training, emphasis should be placed on training their concentration, they will seriously study in training, will not be disturbed by external factors, through concentration training can effectively resist external interference, improve the level of playing.

Among educational, musical, social, or psychological factors, psychological factors were most often listed as significant influences on the self-concept and musical achievements of prospective music teachers (Pecen et al., 2018; Rauduvaite & Yao, 2020). In the book of (Rodrigues1ABCEF et al., 2019), 1,803 people were surveyed, 58.7% of the

performers complained about their psychological inadaptation. When many performers perform in front of an audience, due to psychological problems caused by trembling, numbness, cramps, sweating, palpitations, amnesia, and even convulsions and fainting, usually called stage fright (anxiety), the more reason is that I have not been able to make proper adjustment psychologically, as a result, there is no way to show their best state when performing (Kaviani et al., 2014; Kegelaers et al., 2022; Wan & Huon, 2005). This study mainly studied the emotions, attitudes and personal characteristics of three sub-dimensions psychological factors, among the sub-dimensions, emotional factors scored the highest, followed by personal characteristics. The attitude dimension, however, had a relatively lower value. This indicates that prospective music teachers tend to exhibit strong emotional investment and have favourable personal characteristics like mentality and willpower. However, there is a relatively lower level of investment in their attitude toward musical performance. Therefore, prospective music teachers should adjust their emotions according to their own situation, external environment, internal tolerance and physical condition and other variables, pay attention to ups and downs, adjust their performance according to their emotional state, so that the overall musical performance can give play to their musical talent. Furthermore, the prospective music teachers should first correct the attitude of performance, treat each performance correctly and seriously, actively explore the content and emotion of the performance works, and actively invest their energy and feelings in each performance, and constantly improve their own professional performance ability, and strive to achieve a good performance effect in the musical performance.

The external factors influencing the promotion of musical performance mainly include humanistic factors including parents (Leung & McPherson, 2011) family background, teachers and peers, positive, enthusiastic, and enlightening faculty members were found to have positive influences on advancing musical skills (Paananen, 2022). Peer models were found to have positive effects on their performance and observation behavior (Chirico et al., 2015; Qureshi et al., 2023). In this study, the humanistic factor is the third major factor affecting the musical performance of prospective music teachers, the teacher and student dimensions of this factors are deeply studied. In the university environment, the support of the music teacher is crucial to the student's musical performance learning, suggesting that the teacher needs great flexibility to pay attention to the student's feelings while ensuring that he / she is learning the skills necessary to achieve the goal, for teachers, through the analysis of the atmosphere and environment, they can timely understand the students' reaction to teaching, and can be adjusted from the teaching method, teaching form, teaching content at any time, but also to strengthen the communication, cooperation and cooperation between students, to cultivate tacit understanding.

Musical experience improves a wide range of abilities: the detection, identification, and discrimination of acoustic stimuli were processed more accurately and effectively in experienced musicians. Prepared, experienced musicians perform better on quick

speech in noise test than inexperienced non-musicians in general (Rodrigues1ABCEF et al., 2019; Tanja et al., 2021), namely inhibition, planning, cognitive flexibility and working memory (Bugos & DeMarie, 2017) improve social skills (Cirelli et al., 2014; Schellenberg et al., 2015), and impact on intelligence (Kaviani et al., 2014). Preparing for musical performance is a complex task, and the necessary skills are formed after years of development. As the skills progressed, the musicians learned to practice more effectively. Hambrick et al (2014) reported that the average correlation of deliberate practice with musical performance achievement was r=.52 and concluded that prospective studies should consider the effects of other variables that may explain individual differences in music on musical performance achievement (Hambrick et al., 2014). In this study, the preparation factor is the fourth most important factor affecting the musical performance of prospective music teachers, where the preparation of musical experience and the preparation of musical technical were studied, highlight the equal importance of experience preparation and technical preparation in musical performance. Therefore, we should create more opportunities for musical performance at ordinary times, so that the prospective music teachers can have rich musical experience, and find the right methods of training, rehearsal and practice, so as to have strong preparation and better improve the performance.

Access to training facilities, appropriate training exercises and access to appropriate guidance is an important extrinsic factor in promoting performance skills and achieving higher levels of performance over a shorter period of time (Ruthsatz et al., 2008), also emphasized that the environment influences the promotion of musical performance skills, and the inadaptation to the new environment affects the promotion of skills (Maba, 2020). Environmental factors are the objective conditions for the development of individual music skills. Environment not only turns this possibility into reality, but also determines its direction, level, speed and individual differences (Cohrdes et al., 2019), she clearly states that the improvements in musical skills are influenced by environmental factors. The Czech educator Comenius put forward the environmental problem of school education systematically. The school should be in a quiet place, away from the noise and distractions. With the increasingly complex environment of human survival and development, human dependence on the environment is also increasing, and the role of the educational environment as a special environment in individual development is becoming more and more valued. In this study, environmental factors had relatively low influence on musical performance, but it is still necessary to make up and adjust any problems caused by location, facilities, decoration, etc. The optimization of music education environment is of great help to the development of music education.

According to the survey data, there are significant differences in gender, educational background and major of prospective music teachers. The level of female prospective music teachers in singing and instrumental music performance is significantly higher than that of male prospective music teachers, while the level of male prospective music

teachers in conducting performance is significantly higher. These gender differences highlight the different advantages and characteristics of future music educators. In addition, under different educational backgrounds, the overall musical performance level of master's degree prospective music teachers is significantly higher than that of bachelor's degree and college degree prospective music teachers. This implies a positive correlation between academic achievement and musical performance skills, with those holding advanced degrees attaining the highest proficiency. Through the analysis of prospective music teachers in different majors, it was found that majoring in vocal music showed significantly higher performance levels. In conclusion, the musical performance of prospective music teachers is influenced by gender, educational background, and major. These results provide a valuable reference for music teaching and training.

Conclusion

The purpose of this research is to analyze the current situation of prospective music teachers' musical performance and the factors affect musical performance. Through a survey of 586 prospective music teachers, we found that the overall musical performance of prospective music teachers was in the middle level, with instrumental performance being the highest, followed by singing performance, and conducting performance being relatively low.

According to the research results, the performance ability of prospective music teachers is obviously affected by many factors. The study highlights the importance of environmental, psychological, physiological, preparation, and humanistic factors in shaping the musical performance skills of future music educators.

In addition, the study also revealed differences gender, educational background, and major in the musical performance skills of prospective music teachers, with female prospective music teachers showing higher levels in singing and instrumental performance, while male prospective music teachers showing higher levels in conducting performance. There is a positive correlation between educational background and musical performance skills, with higher degrees achieving higher musical performance levels. Prospective music teachers showed a higher level of singing and conducting performance.

This research provides relevant results on the current situation and factors affecting musical performance of prospective music teachers. The significance of this research affects the development of music education and provides a valuable reference for the development of training objectives, teaching methods for cultivating future music education talents.

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Dabartinė situacija ir veiksniai, darantys įtaką būsimųjų muzikos mokytojų muzikiniam pasirodymui

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Santrauka

Šis tyrimas apima visapusišką būsimųjų muzikos mokytojų muzikinio atlikimo gebėjimų analizę ir vertinimą, atskleidžiantį esamą būsimųjų muzikos mokytojų muzikinio atlikimo įgūdžių situaciją bei įvairių veiksnių įtaką muzikiniam pasirodymui. Buvo atlikta apklausa raštu, kurioje dalyvavo 586 būsimieji muzikos mokytojai. Būsimųjų muzikos mokytojų veiklos lygiai buvo įvertinti atliekant aprašomąją statistinę analizę, išryškintos kiekvienos srities stipriosios ir silpnosios pusės. Rezultatai parodė, kad apklaustų būsimųjų muzikos mokytojų muzikiniai gebėjimai skyrėsi priklausomai nuo lyties, išsilavinimo ir specialybės. Tyrime pabrėžiama, kaip svarbu tinkamai įvertinti veiksnius, turinčius įtakos muzikiniam pasirodymui, pvz., fiziologinius, psichologinius, pasiruošimo, aplinkos ir humanistinius, ir kaip šie veiksniai skiriasi. Išvadose pabrėžiama, kad reikia individualizuoto mokymo metodo, kuris atitiktų įvairius būsimųjų muzikos pedagogų poreikius ir pagerintų bendrą muzikinio ugdymo kokybę. Apibendrinant galima teigti, kad šiuo išsamiu tyrimu buvo siekiama suteikti vertingų įžvalgų profesionalaus muzikinio ugdymo srityje. Šio tyrimo metu atlikta įvairių muzikinio atlikimo dimensijų ir veiksnių, darančius įtaką, analizė padės sukurti efektyvesnes muzikinio ugdymo ir mokymo strategijas bei metodus.

Esminiai žodžiai: *būsimieji muzikos mokytojai, muzikinis pasirodymas, dabartinė situacija, veiksniai.*