Música Hodie | ISSN: 2317-6776 DOI: 10.5216/mh.v22.73227

Teaching piano in colleges and universities based on cross-cultural music education

Ensino de piano em faculdades e universidades com base na educação musical transcultural

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Abstract: The use of non-standard approaches in teaching is becoming more common, which is connected with the development of economic and social processes. The aim of the work is to analyze the aspects of piano teaching in colleges and universities based on cross-cultural music education, as well as to develop a training program and test its effectiveness. In the work a survey method was used, which contributed to the identification of the most significant elements in the learning process. The paper established the elements that are most important for students to learn (psychological support, modern technology, the practice of other countries, creativity). 32 percent of students believe that implementing best practices would make a significant difference in the learning effectiveness. The survey revealed that only 5% of students have more than one month of full-time online learning experience. The findings suggested that 29% of the respondents developed creative thinking skills, and 26% of the respondents gained technical knowledge that contributed to strong improvisation skills. Data on productivity revealed that six out of eight study groups achieved a high level, and only group 3 (college) scored

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19.6%, which is due to the lack of good grades among most students. The practical value lies in the development of distance learning programs that promote piano instruction through a cross-cultural approach.

Keywords: music studies, best practices, online learning, improvisation, skills.

Resumo: O uso de abordagens não padronizadas no ensino está se tornando mais comum, o que está relacionado ao desenvolvimento de processos econômicos e sociais. O objetivo do trabalho é analisar os aspectos do ensino de piano em faculdades e universidades com base na educação musical transcultural, bem como desenvolver um programa de treinamento e testar sua eficácia. No trabalho foi utilizado um método de levantamento, que contribuiu para a identificação dos elementos mais significativos no processo de aprendizagem. O artigo estabeleceu os elementos que são mais importantes para os alunos aprenderem (apoio psicológico, tecnologia moderna, prática de outros países, criatividade). 32% dos alunos acreditam que a implementação das melhores práticas faria uma diferença significativa na eficácia do aprendizado. A pesquisa revelou que apenas 5% dos alunos têm mais de um mês de experiência de aprendizado online em tempo integral. Os resultados sugeriram que 29% dos entrevistados desenvolveram habilidades de pensamento criativo e 26% dos entrevistados adquiriram conhecimento técnico que contribuiu para fortes habilidades de improvisação. Os dados de produtividade revelaram que seis das oito turmas de estudo atingiram um nível alto, e apenas o grupo 3 (faculdade) obteve 19,6%, o que se deve à falta de boas notas entre a maioria dos alunos. O valor prático está no desenvolvimento de programas de ensino à distância que promovam o ensino de piano por meio de uma abordagem transcultural.

Palavras-chave: estudos musicais, melhores práticas, aprendizagem online, improvisação, habilidades.

Submetido em: 28 de junho de 2022
Aceito em: 28 de setembro de 2022

Introduction

Music is a multifunctional language through which ideas, feelings, and emotions are communicated. Music is also an important way of self-expression (RIGBY *et al*., 2020). Playing musical instruments affects not only emotional self-development, but also the development of thinking (NAN *et al*., 2018).

The COVID-19 pandemic has contributed to a revision of teaching methods that affected music education as well, including teaching performing skills. In the era of network technology, online learning, as a new method, refers to networked learning using multimedia information technology between the educator and the student (FU, 2021). These processes facilitated the interaction among people from different cultures, resulting in evolution of intercultural communication. Since the early 19th century, Chinese culture has been influenced by Western culture. With the rapid development of science and technology, culture gradually became valued worldwide, and music education turned into an important factor influencing the preservation of popular culture (SOROKOWSKA *et al*., 2021).

Music education in the East has been described by a movement away from the exclusivity of art (presented as sacred knowledge) toward opening traditional schools to all comers without testing their musical skills (AKUTSU, 2020). The teaching methods under such arrangements have survived to this day in their original form. The influence of these methods can also be seen in contemporary professional music teaching, particularly using the method of Suzuki (PASTOR, 2018). Cross-cultural analysis emerged due to social and cultural change theory. The cross-cultural approach provides a unique opportunity to explore multiple popular cultures (LEUNG, 2018). The introduction of European musical learning systems into Chinese teaching methods, alternating the phase of tension with the phase of relaxation, makes the learning more diverse, positively affecting the students' conscientiousness (GVOZDEVSKAIA, 2021).

The cross-cultural approach to teaching music in China contributes to future teachers' understanding of expertise sharing opportunities to solve existing problems of music education and suggests the prospects for their resolution both globally and locally. With cross-cultural education, Asian musicians enjoy unprecedented popularity in concert halls, music schools and classical music competitions (YOSHIHARA, 2008; TAI *et al*., 2018).

According to Cao (2020), cutting-edge technology motivates students to learn the piano. Online learning is important for building a system of continuing music education that facilitates various teacher-student interactions (FREER and TAN, 2018).

Literature review

The authors analyzed (using cross-cultural methods) music learning in colleges and universities, with the primary goal is to identify innovative methods of teaching piano.

Karkina *et al*. (2021) address the opportunities offered by online music learning. The methodological framework is based on the author's teaching approaches reflecting the professional's mindset to create the most progressive methods of teaching future music instructors. The research findings suggested that the introduction of the developed teaching approach to online music learning through criticism and strengthening of creativity can improve the piano learning and, in particular, contribute to the development of the performing skills.

Gvozdevskaia (2021) analyzed the possibility and feasibility of using European and Eastern methods of cross-cultural music education in online learning to play piano. The paper focused on: development of methods that help to maintain an optimal mental activity among students in the classroom; creating conditions not only for becoming a proficient pianist, but also for disclosure of creativity among students. The author argues that the less

expressed are the students' musical skills, the more versatile should be methods of fast-paced practicing, with algorithms for their alternation, taking into account students' individual capabilities.

Since learning to play the piano is still difficult because of low motivation, Rigby *et al*. (2020) developed a new piano learning tool, with the primary goal to improve the effectiveness of beginners' independent study. This allowed users to accelerate their sheet music reading and comprehension skills without a tutor, while maintaining compatibility with the traditional learning process.

Yang (2021) developed a program to teach students to play the piano, which expanded the repertoire, with repetition of musical fragments, visualization to further reproduce the musical composition, and which also contributed to developing the ability to hear the melody. Upon completion, students' creative thinking skills and musical memory improved.

For the comprehensive development of students' piano playing skills, Zhao and Zheng (2021) developed a multi-level teaching method based on hierarchical learning. This method of teaching has important practical implications for comprehensive increased effectiveness of group learning programs, improving the quality and level of teaching.

Miyazaki *et al*. (2018) got an insight into pitch measuring ways using pitch ratios. Japanese music school students had the highest pitch recognition scores, but only a small proportion of students from Poland, Germany, and the United States had the absolute pitch. The contrasting data between the different student groups created a sociocultural context for shaping the learning process, where East Asian students need to place more emphasis on developing a pitch-based curriculum.

Galbraith and Rodriguez (2018) explored approaches to music education through reliance on various multimedia tools that promote student engagement. Cross-cultural approaches affect understanding of the topic and improvements in teaching tools.

Mars *et al*. (2015) addressed cross-cultural approaches in music education. Students' musical and cultural backgrounds affect changes in the way they learn and teach other students. Adolescents were more inclined to change the way they teach other students than to change the way they learn themselves.

There are many problems in the piano teaching system and methods at colleges and universities in China that need further improvement (lack of progressive teaching methods, lack of student motivation in learning, lack of necessary online programs, etc.). The reviewed writings focus on expanding the repertoire and developing independent study skills.

Problem statement

Playing musical instruments contributes not only to professional skills, but also to the musician's all-round development. As a result of the mass transition to distance learning, various programs and techniques have been developed to improve piano instruction. The piano course is a required art discipline for college and university teachers in China, and the effect of teaching this course determines the teachers' professional skills. Cross-cultural music education is most appropriate and effective way to learn piano. To this end, 212 students participated in the study. The paper analyzes college and university piano instruction based on cross-cultural music education. The authors had the following tasks:

- identification of the most important elements in learning;

- development of teaching methods relying on a cross-cultural approach to music education;

- determining the importance of the cross-cultural learning to play the piano upon completion of such learning;

- estimating the learning productivity in cross-cultural music education.

Methodology

Piano teaching is a complex learning process. 212 students participated in the study to determine the components that make college and university education important. Table 1 shows distribution of respondents.

Table 1 - Percentage of Experiment Participants

Educational institution	Number of respondents			
	No. 1	No. 2	No. 3	No. 4
College	25	27	21	30
University	35	24	27	23

300 persons were expected to participate in the experimental part of the study, because initially the research was to address cross-cultural learning in China and Russia. Due to the COVID-19, the authors had to redesign the study because it was impossible to meet these requirements. Four colleges and four universities in China, where music was taught, were selected for the study. The study required a sufficient number of graduates majoring in piano. NDAs regarding the experiment and voluntary participation of students in such learning format were signed at the introductory session.

The survey method was chosen (PESCHEROV and NOVIKOVA, 2015), because it helps to obtain insufficiently disclosed information (in this case - information on learning to play the piano within a group). The questions were provided online to simplify data processing. Students had to give their answers within 8 hours.

The survey established the most significant elements in the learning process. Initially, the list included more than 20 items, but only four were given the highest preference. Therefore, respondents were asked to choose among the following most important indicators:

- psychological support;
- cutting-edge technology;
- best practices;
- creative approaches.

The next phase determined the students' online learning expertise.

The survey helped to develop a cross-cultural training program, which relied on Feyerabend, Dalcroze, Suzuki, and Manhattanville methods (DEPREZ, 2010; SIT *et al*., 2017).

2020-2021 academic year made it clear what role cross-cultural piano instruction played and whether cross-cultural analysis contributed to professional activities. Fifth-year students were chosen precisely to determine whether the training program affects further employment and professional activities.

The learning productivity was calculated by formula 1.

$$R = \frac{E - M_n}{t} \times 100\% \quad (1)$$

E – average grades for the school year in the group;
M_n – average number of tunes composed within the group;
t – time spent, minutes.

The formula was developed by the authors based on experimental data. For the calculation purposes, the participants of the experiment were divided into 8 groups based on their university affiliation. The scores of 75% to 100% suggested high productivity; from 50% to 75% - sufficient productivity; from 25% to 50% - average productivity; from 1% to 25% - low productivity.

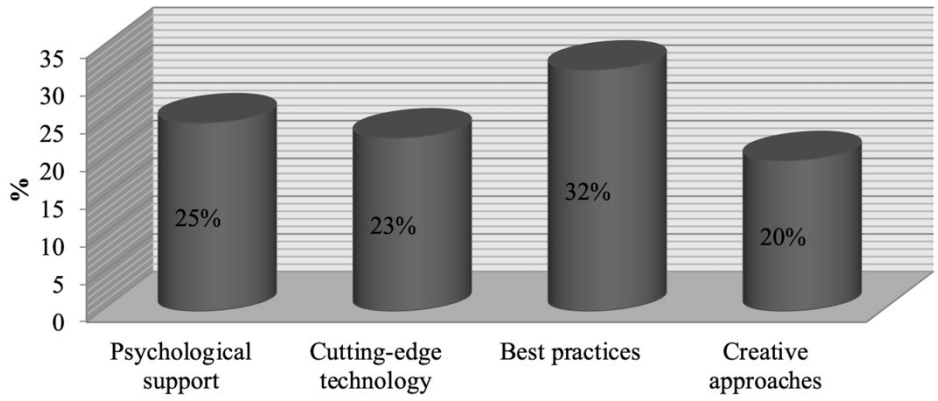
The calculation requires an elaborate approach. Symphony Spreadsheet (2021) was chosen for this purpose. This tool has many features for working with tables, including analyzing, grouping, and processing data based on the formulas entered.

Research requires a serious approach to maintaining ethical standards. To this end, the authors relied on data from COPE (2021). The document requires strict compliance with data processing rules, as well as protection, confidentiality and preservation of the data received from the respondents.

Results

The COVID-19 pandemic has posed a challenge to college and university educators in providing effective instruction. The transition to online learning requires improved approaches that will be available to students remotely. To this end, an analysis was conducted among students to identify the elements that were more relevant to them in the research process (Figure 1).

Figure 1 - The Most Significant Elements for Learners

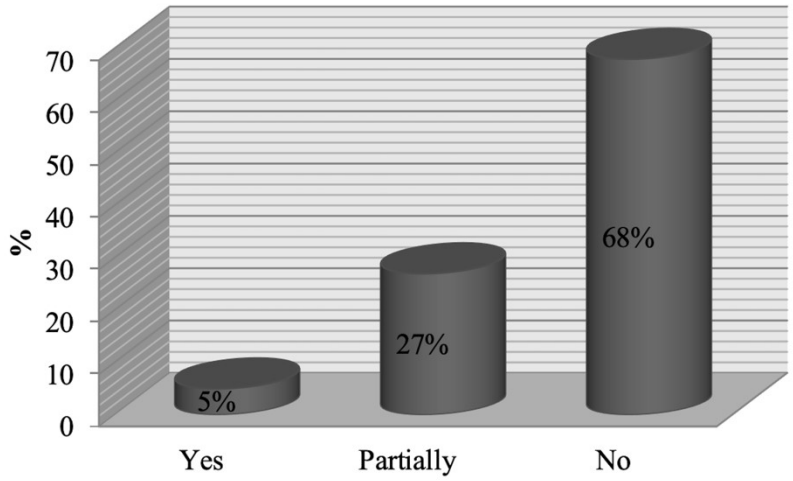


The resulting data shown in Figure 1 have only minor differences from each other. Best practices constitute the most significant element that contributes to effective learning (32%). This indicator is important because it promotes the introduction of new elements into the learning making it more effective. For 25% of students, psychological support is important, since there will be no in-person contact between peers and the instructor in case of online learning. Students are also afraid of not getting the knowledge they need through online learning. For 23% of students, the use of

cutting-edge technology is important because it contributes to a better transfer of knowledge and development of skills. For example, there are many apps developing piano skills. Creative learning motivates students, which is important for 20% of respondents.

Next, the students' expertise in online learning was measured (Figure 2). These data are valuable for developing academic programs.

Figure 2 - Determining the Experience of Previously Used Distance Learning Process Among Students



The presented data suggest that 5% of students have more than 1 month of online learning experience, which is attributed to the pandemic period. 27% of students have taken online courses, so they have an idea of such format. 68% of respondents had no idea about the online learning.

The survey data contributed to the development of online learning curriculum for piano playing. Since 68% of the students had no idea about such format of learning, the authors decided to develop a program based on best learning practices and related case studies. Training took place in Moodle:

I. Since cross-cultural learning addresses best practices, the authors chose the most effective approaches. They found that

John M. Feyerabend's method (DEPREZ, 2010) would benefit the study of music theory. The academic program begins with the study of musical literature and the culture (Chinese culture in this case). The U.S. approach to piano learning involved learning the music separately from the musical notes. Set-up of the learning phases contributed to the development of theoretical knowledge and skills, helping to create melodies.

The third method relied on by the authors for training was developed by Dalcroze, the Swiss musician (SIT *et al*., 2017). Based on it, the learning process was divided into solfège, improvisation, and rhythmics. Learning to play the piano is based on reinforcing the theory with hands-on experience.

II. Improvement of piano playing skills relies on five approaches of 5-minute play to develop a different group of musical notes. To this end, the authors used Suzuki approach (AKUTSU, 2020), which was based on the limited learning of a particular element. Initially this approach was applied to the study of languages, but later it facilitated learning music as well. This is because music is made up of sounds, just like speech, so the brain perceives the same principles for learning different categories.

III. The authors considered improvisation skills to be an important part of the academic program, which promotes cognitive, communication, creative skills and develops the student's thinking. The Manhattanville method (SIT *et al*., 2017) made it possible to set up learning based on skills and continuous experimentation. Classes are structured in such a way that students are given the freedom to improvise and explore different aspects of music directly interacting with the instructor.

The importance of the cross-cultural learning to play the piano upon completion of the training was determined among the participants involved in the experimental part (Table 2).

Table 2. The role of cross-cultural piano instruction for students (upon completion)

Skills learned	Percentage of responses
Creative thinking skills were developed	29%
In addition to piano playing skills, improvisation skills improved as well	26%
Communication skills were developed	18%
The ability to recognize the music type was developed	27%

Based on the data in Table 2, 29% of the students improved their creative thinking skills because playing the piano is good for the brain, memorizing large amounts of information. About 27% of students developed the ability to recognize the type of music, which is directly attributed to the cross-cultural learning. Such teaching approach improved not only piano playing, but also the improvisation skills among 26% of respondents. 18% of students developed communication skills, which is attributed to the integrated approach to learning.

Survey determined whether cross-cultural analysis contributed to the respondents' future professional activities (Figure 3).

Figure 3 - Determining the Possible Impact of Cross-Cultural Training on Professional Activities

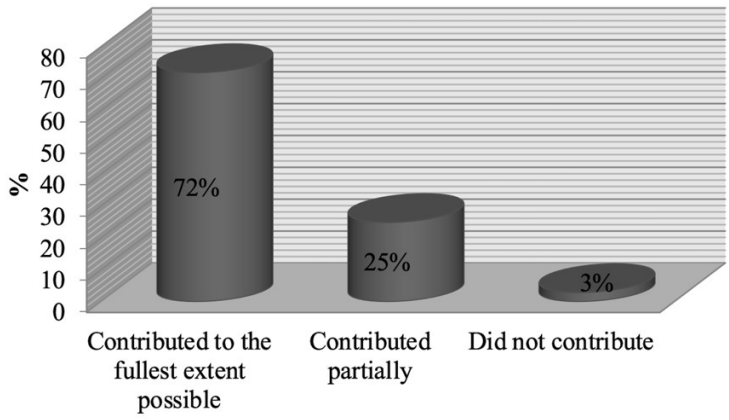


Figure 3 shows that cross-cultural learning developed professional activities, as it contributed not only to music-related employment, but the acquired skills could be used in research and further study at graduate and doctoral programs (72%). 25% of the students continued with jobs not related to piano, but the learning approach helped them adapt to other occupations as well. 3% of students missed a significant number of classes, so data cannot be updated.

Productivity among college and university students was calculated using formula 1. For this purpose, the calculation was made separately for each institution (Table 3).

Table 3. Learning productivity in cross-cultural music education

Group number	Learning productivity
College students	
No. 1	82%
No. 2	89%
No. 3	19.6%
No. 4	75%
University students	
No. 1	91%
No. 2	63%
No. 3	83%
No. 4	79%

The estimated productivity was high among almost all students, except for students in College No. 3 (19.6%), because not all respondents received good grades due to a poor attitude towards academic disciplines (not attending all classes, not completing

assigned tasks). Group 2 members have a productivity of 63%, which is sufficient as compared to other university students. The students met all the requirements, but the composed tunes with more than 50% plagiarism were not credited. A comparative analysis of the cross-cultural learning in college and university showed strong knowledge. Students from College No. 2 (89%) and University No. 1 (91%) got the highest scores.

Discussion

During quarantine and online learning, many piano instruction tools were suggested. Bobbe *et al*. (2021) believe that user needs should be the starting point for an effective and interdisciplinary process of developing a cross-course piano app. After analyzing the piano instructors' opinions through an online survey, the authors came up with possible solutions based on available literature, visualized in the form of scenarios to inspire participants throughout the interview. The research findings suggest that instructors view body movements, teacher-student communication, and independent practice as essential aspects of piano instruction. Further research has led to the so-called acceptance requirements for each scenario, such as providing meaningful communication online, providing enhanced data on the performer's body movements to enhance well-being, and increasing student motivation for independent practical training while allowing or even promoting freedom of creative self-expression and providing assistance rather than judgment. This paper, however, emphasizes various piano teaching techniques used outside of China.

Churikova-Kushnir *et al*. (2021) suggest research and methodological principles for developing online learning courses for future music teachers based on cross-cultural, systemic, effective approaches. The research is based on experience of learning piano online. The study addresses the major components of online course development and design, including theory, practice, independent study and supervision. Online learning methods developed

by the authors, more specifically learning to play piano, improved motivational, musical, instrumental skills approx. by 10% compared to the students who relied on traditional methods. In this paper, however, the parameters affecting the learning process were initially studied to develop the program. They include psychological support, the cutting-edge technology, best practices and creative approaches.

Lim *et al*. (2019) argued that when learning to play the piano, it is not always necessary to maintain an increased distance. However, it is important to consider and adjust the distance between the eyes, notes, and hands. The study took into account the music's complexity and tempo (music domain), arm span (cognitive domain), and accuracy of performance (behavioral domain). S.-H. Park and Y.-H. Park (2020) proved that proper posture is very important when learning to play the piano because it promotes good sound and prevents injury. In piano instruction, it is important to use not only visual information, but also aural information, because there is a profound relationship between posture and sound. The authors compared the effectiveness of the developed Audio-Visual Tensor Fusion Network (AV-TFN) method containing real piano performance videos in various settings with contemporary approaches: VN (Visual Network), AN (Audio Network), AVN (Audio-Visual Network) with concatenation and attention methods. These data suggested that AV-TFN is superior to existing developments and can be used effectively for grouping compositions in piano learning. In this paper, however, the improvement of technical skills is based on the Suzuki principle, with time constraints for learning the tasks.

Ovchinnikova (2021) explored multicultural music learning methods. The authors concluded that an integrated, interdisciplinary approach to learning traditional music of various nations enhances student's cognitive skills, behavior and motivation. Prest (2020) explored music learning approaches among indigenous communities. This approach to learning promotes adaptive knowledge based on the cultural background. Upon completion

of cross-cultural training, students developed creative thinking skills, improvisation skills, communication skills, and the ability to recognize the type of musical compositions.

Bonastre and Timmers (2021) studied approaches to education based on musical expression and learning approaches. The paper suggests that the learning strategy tool is the most relevant aspect for UK students, and various musical and emotional aspects are the most relevant for Spanish students. The explanation of theory based on relevant data contributes to a better aesthetic expression. The choice of the learning approach depends on the student's age. Simulation is more effective for younger students, and use of various techniques is more effective for senior students. The findings reveal differences in the understanding of musical expression.

The reviewed writings placed the greatest emphasis on the cross-cultural approaches to learning piano in order to develop specific skills. Approaches to teaching various groups have also been studied. This paper focuses on developing cross-cultural methods of piano instruction based on previously identified data. The authors concluded that Feyerabend, Dalcroze, Suzuki, and Manhattanville provide the most important approaches.

Conclusions

The paper discussed the methods of cross-cultural piano learning which are used to develop a high-end professional. The study was conducted among 212 students from four colleges and four universities in China. The paper established the elements that are most important for students to learn. The data suggested that best practices (32%) and psychological support (20%) contribute to the respondents' required knowledge and interest in online learning. The survey suggested that 68% of students had no idea about online learning. Based on the resulting data, the authors compiled the most relevant curriculum relying on case studies of other countries (Feyerabend, Dalcroze, Suzuki, Manhattanville).

Upon completion of the cross-cultural learning, students' perceptions of its significance were measured. The findings suggested that 29% of the students developed creative thinking skills, which not only improved piano playing skills, but also developed thinking in other areas. 27% of students developed the ability to recognize types of music compositions, which was made possible through a cross-cultural approach to learning. 72% of the students believed that the training methodology developed by the authors positively affected professional activities and contributed to a quick adaptation.

To explain the resulting data, the authors calculated the learning productivity. The findings suggested that students in college group No. 2 had the highest scores (89%), which depended on the annual grades, the tunes written in the group, and the time spent writing the composition. Group No. 1 had the best performance among university students (91%). The practical significance of the work lies in the possibility of expanding cross-cultural piano instruction for students of different levels of educational institutions. Prospects for the study could be based on a comparative analysis in determining the effectiveness of instruction between students from different countries.

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Research ethics committee approval

The research was conducted ethically in accordance with the World Medical Association Declaration of Helsinki. The research was approved by the local ethics committees of Longyan University.

Conflict of interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Publisher

Federal University of Goiás. School of Music and Performing Arts. Graduate Program in Music. Publication in the Portal of Periodicals UFG.