



The Application of The “Project-Based” Piano Teaching Model at Universities

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<i>Article History</i>	Abstract
Received: 06 June 2023 Revised: 05 Sept 2023 Accepted: 20 Nov 2023 CC License CC-BY-NC-SA 4.0	<p><i>The teaching of basic piano playing skills is a fundamental and compulsory course for higher teacher training in music education. Only by fully embodying the principles of systematicity, progressiveness, practicality, and innovation in piano education can we better meet the requirements of the higher teacher training objectives. This paper combines theories of cognition, psychology, and education with constructivist learning theory to advocate a teaching philosophy centered on a “Project-based” piano teaching model. This study takes the scientific and feasibility of the “Project-based” piano teaching mode as its research objective. Through an in-depth study of its constituent elements, including teaching content, the application process, teaching strategies, and application guarantees, the ultimate aim is to be able to effectively stimulate students' interest in learning the piano, develop their independent learning ability and innovation, and accelerate the learning process of keyboard skills.</i></p> <p>Keywords: <i>Project-based mode, Piano teaching, Teaching Strategies</i></p>

1. Introduction

Definition of The “Project-based” Piano Teaching Model

A project is a highly general, literal semantic expression that is consistent with the content of the research and teaching. In this study, the main reference is to the project of teaching and learning. The projects in the piano teaching model are a series of teaching themes that summarize and condense the knowledge points prevalent in the learning of keyboard skills and penetrate the discipline throughout the theoretical knowledge. It plays a pivotal role in teaching and learning because it specifies the learning objectives and defines the learning tasks. It forms an important part of the basic framework of the entire teaching model. A “Project-based” piano teaching model is one in which students are given theoretical and skill-based learning tasks guided by a variety of piano performance-based topics so that they can take the initiative to think about the tasks, stimulate their interest and initiative, and enhance their ability to perceive and apply knowledge and information. (Chao, 2006) This mode of teaching is quite different from the traditional model. In the traditional teaching model, the usual procedure is for the students to return to the lesson first, then for the teacher to point out the shortcomings in it, and then to explain and demonstrate the new repertoire. The students practice whatever the teacher talks about. Students are always in a state of passive acceptance and can only imitate. This is not in keeping with the essence of the art of piano but is also contrary to the laws of scientific teaching. The introduction of the “Project-based” teaching model not only reflects the interactive and systematic nature of piano teaching in terms of form and content but also fully implements the student-centered philosophy in terms of teaching philosophy. This new teaching mode provides a good idea for piano teaching in the new era of senior teachers, with strong theoretical value and practical significance.

The Use of “Project-based” Teaching Models in University Piano Teaching

Design of The Project

A project provides a highly focused overview of the tasks of a group piano lesson, specifies the teaching objectives, and establishes the general framework for the development of course materials. Therefore, the proper selection of a series of topics is the first prerequisite for “Project-based” piano teaching. In

terms of the two-year, four-semester schedule of piano study in China's higher teacher training music programs, the entire study of performance technique can be divided into five areas, according to a scientific summary by the famous French pianist and conductor Alfred. The first is specific training of the fingers. Includes independence, flexibility, and balance of the fingers. The ability to play trills, ornamental notes, and vibrato fluently. Secondly, finger control training to be able to play diatonic, and polyphonic fluently. The third is the training of thumb turnings and finger threading to be able to play scales and arpeggios fluently. The fourth is finger extension training to be able to play octaves and even higher intervals fluently. Fifth is the training of the wrist technique to be able to play various chords fluently. (Liu, 1998) As can be seen, the whole training is complex. This places certain demands on the teacher's choice of topics. It requires the teacher to follow the principle of starting from the shallow to the deep and progressing step by step from the student's actual ability and to grasp the importance and difficulty of each topic as well as the connections before and after.

Some of the higher teacher training colleges have also made initial attempts to reform the “Project-based” piano teaching model. For example, the Music Department of Shandong Normal University has compiled the textbook “The Ten Step Piano Training Method”, which is divided into three volumes for teaching use: the upper, middle, and lower volumes. It has 8 teaching units and is completed in 4 semesters over 2 academic years. The unit topics are further broken down into teaching topics for each chapter lesson, which all consist of keyboard techniques, skills, and musical expression terminology. The topics to be addressed in each term can be divided into two main categories. The first category is devoted to the technical aspects of playing, including staccato, legato, ornamentation, rotary, vibrato, etc., finger dexterity, evenness and finger changes on the same note, syncopated rhythms, dotted rhythm, lateral movements of the thumb and lateral linking techniques of the wrist. The second category is artistic expression, which includes: rhythmic rhythms in various meters, phrasing, melodic and accompaniment levels, phrasing and breathing, melodic singing, continuity, and fluidity of the piece, tonal contrasts, intensity contrasts, overall expressiveness of the piece, pedals, different compositions, and styles, shifting of accompaniment patterns and matching melodies. A balanced mix of the above topics culminates in a progressive overall teaching framework. (Liu, 2000) Table 1 shows the syllabus of a two-year “Project-based” group piano course at Shandong Normal University.

Table 1

Grade	Grade One	Semester	Semester 1	Class Hours	36
Teaching objectives	Learn to play in the correct posture and master the playing of single notes, double notes, and chords, mainly including staccato and legato. An initial mastery of the basic accompaniment patterns and the use of simple harmonic basics to arrange accompaniment for simple major songs.				
Teaching topic 1	Basic playing techniques and methods				2 class hours
Teaching topic 2	Five-finger position single and double staccato in major				4 class hours
Teaching topic 3	Five-finger position single and double staccato in major				4 class hours
Teaching topic 4	The playing of tonic chord and transposed chords in major				2 class hours
Teaching topic 5	The playing of short arpeggios in the position of Five-fingers in major with left and right hands				4 class hours
Teaching topic 6	Connection and application of the tonic chord and subordinate chord				4 class hours
Teaching topic 7	Connection and application of the tonic chord and dominant chord				4 class hours
Teaching topic 8	Fingering exercises in the positive triad connection				4 class hours
Teaching topic 9	The accompaniment of the positive triad and its use				8 class hours

Grade	Grade One	Semester	Semester 2	Class Hours	36
Teaching objectives	Master and consolidate the correct way of playing, the use of the arm and wrist. The ability to play major scales up to two octaves, three ascending and three descending, arpeggios, and major chord inversions. Learn to play simple polyphonic pieces, handle phrases, and arrange accompaniment for simple songs in minor keys using the minor triad.				
Teaching topic 1	Thumb training in the major scale				4 class hours
Teaching topic 2	Five-finger position exercises in minor				4 class hours
Teaching topic 3	Tonic chord and transposed chord practice in minor				4 class hours
Teaching topic 4	The short arpeggio-style playing of the tonic chord in the minor				4 class hours
Teaching topic 5	Connection and application of the tonic chord and subordinate chord in minors				4 class hours
Teaching topic 6	The connection of positive triad in minor				4 class hours
Teaching topic 7	The accompaniment patterns and application of the positive triad in minor				4 class hours
Teaching topic 8	Exercises for simple polyphonic works				4 class hours
Teaching topic 9	Minor scales and arpeggios exercises				4 class hours

Grade	Grade Two	Semester	Semester 1	Class Hours	36
Teaching objectives	Build on the learning of the first year to further improve finger dexterity, strength, speed, and evenness. Learn how to move the wrist when playing legato and learn how to play double notes and chords in legato. Learn to play a range of ornamental tones such as turn and vibrato. The ability to understand and express music, and to use alternating major and minor to accompany songs.				
Teaching topic 1	Types of fingering for arpeggios in the major scale				4 class hours
Teaching topic 2	Types of fingering for arpeggios in the major scale				4 class hours
Teaching topic 3	Minor scale arpeggio fingering and wrist technique				4 class hours
Teaching topic 4	Minor scale arpeggio fingering and wrist technique				4 class hours
Teaching topic 5	Vibrato training				4 class hours
Teaching topic 6	Turn training				4 class hours
Teaching topic 7	Training in chromatic scales				4 class hours
Teaching topic 8	Grasp of playing technique and musical expression				4 class hours
Teaching topic 9	The use of alternate major and minor accompaniment				4 class hours

Grade	Grade Two	Semester	Semester 2	Class Hours	36
Teaching objectives	To enhance the fluency and coherence of finger playing. To be able to play scales and arpeggios in three ascending and three descending modes within four octaves, and to achieve a certain speed. Improve finger coordination with the arm and wrist in playing and further develop the learning of polyphony. Be able to arrange songs using secondary triads.				
Teaching topic 1	Rapid thumb rotation and the use of scale arpeggios			4 class hours	
Teaching topic 2	Exercises for polyphonic works			4 class hours	
Teaching topic 3	Octave playing exercises			4 class hours	
Teaching topic 4	The use of the supertonic chord			4 class hours	
Teaching topic 5	The use of the mediant chord			4 class hours	
Teaching topic 6	The use of the submediant chord			4 class hours	
Teaching topic 7	The use of the altered chord			4 class hours	
Teaching topic 8	Application of modulate			4 class hours	
Teaching topic 9	The use of near-relative modulate			4 class hours	

The findings of this study (Cao, 2006)

Process of Applying The “Project-based” Piano Teaching Model

Piano teaching, as a specific skill training process, is also a concrete expression of a cognitive development process. According to modern cognitive psychology, cognitive processes are the input, processing, reproduction, and application of knowledge and information from the outside world to the brain. (Wadsworth, 1989) The structural components of “Project-based” piano teaching are also subject to a process of cognitive development, which is driven by subject matter tasks that allow the students to acquire the relevant subject matter skills and convert them into their knowledge and abilities in the process of completing the tasks. They can be broadly divided into five teaching phases:

a. Presentation and inspiration of the project. It means that the teacher motivates the students by showing them what they are going to learn, how they are going to learn it, and what they are going to achieve. (Chao, 2006) In the case of the fingering training in the connection of the triads, for example, the teacher first needs to clarify the relationship and meaning of this interconnection, and then play the connection on the piano, asking the students to memorize the fingering of the individual chords and at the same time focusing on observing the patterns and characteristics and trying to play them. It differs from traditional teaching in that more emphasis is placed on inspiration and guidance than on the teacher's total commitment.

b. Technical task of the project. After the teacher has explained the main points to the students in a planned and structured way, he or she has to help the students with repeated reinforcement in a spiral structure to achieve a breakthrough from quantitative to qualitative change. Given the complexity of the technical system of the piano, it is important that the teacher pays attention to the back-and-forth and gradually allows the students to grasp the main points themselves.

c. Extension of the project. The mastery of skillful piano playing techniques is only one of the aims of piano teaching, as is the development of students' musical qualities and their aesthetic abilities. The teacher is therefore required to make appropriate extensions to the subject matter itself. For example, after learning a certain technique, the teacher can select some suitable folk songs for the students to play, which consolidates the technique itself and at the same time gives the students the joy of success.

d. The practical application of the project. The piano playing technique is only one component of overall piano ability. It is not enough to rely solely on technical training to develop comprehensive keyboard playing skills and subsequently gain musical and aesthetic literacy. This is where one of the

misconceptions about piano teaching in higher education today lies. So teachers should take the initiative to guide students to apply the knowledge and abilities they have learned. For example, in the face of some of the more typical arpeggios, teachers can appropriately introduce some knowledge of piano accompaniment and choose some representative pieces to guide students to apply what they have learned.

e. Assessment of the project. After completing a topic task, an assessment needs to be conducted in a diverse format. It contains teacher assessment, student self-assessment, and student mutual assessment, which enables students to recognize problems and shortcomings, while at the same time gaining confidence in their future learning.

Teaching Strategies for the "Project-based" Piano Teaching Model

Teaching strategies are a range of specific problem-solving behaviors used by teachers to achieve teaching objectives or teaching intentions. (Feng, 2008) As teaching strategies are directly related to the whole process of teaching and the final result of education, they are central to the "Project-based" piano teaching model in teaching practice. At the same time, the implementation of teaching strategies cannot be achieved without an analysis of students' learning styles, and only with a clear understanding of how students learn best in the form of music can scientific and effective teaching strategies be implemented. It has been found that students learn best when they are interested in the content; when they are infected by the context; when they discover the true value of the questions posed by the teacher; when they participate freely and independently in exploration; when they are presented with opportunities for expression; when they encounter creative activities; when they are encouraged by praise and applause from their peers; when they are motivated to climb higher and so on. Therefore, teaching strategies can be adapted to it in teaching. (Cao, 2008)

Use of Context to Stimulate Students' Interest

Contextual education is based on Marx's philosophical principle of holistic development through the harmonious interaction of human activity and the environment. "Contextual education is a wide space for networked teacher-student interaction that is both emotional and fun. It is the environment in which students acquire knowledge, form their abilities, and develop their mental qualities. In this beneficial environment, the teacher is well placed to induce motivation in the students' thinking and to mobilize the knowledge, experience, feelings, and interests that have gradually developed within them. (Lin, 2017) Music is the emotional art of shaping images with flowing sound. The teaching of the "Project-based" piano begins by presenting the students with the music topic technique in a way that creates an environment and atmosphere in which they can hear, see, feel, and touch the effect that the topic technique has on the musical performance, thus creating a strong interest in the study of the topic. There are, of course, different perspectives and a variety of ways to set the context for "Project-based" teaching, and specific ways of introducing it can start with the following.

a. Acoustic situation. For example, the teacher has to teach the students about the subject of polyphonic music for piano. Rather than directly expounding the knowledge to the students, the teacher will ask them to enjoy a Chinese polyphony piece He Luting's piano sketch "Piccolo for Shepherd Boy". The teacher first asks the students to taste for themselves the beauty of the organic fusion of polyphonic musical forms and to express their understanding and feelings. This is followed by a standardized and rigorous intellectual explanation based on the students' understanding. This way of introducing learning points through the creation of a musical context allows students to get into the learning process more quickly and enhances their understanding and feeling of the work.

b. Operating situation. Since it is comprehensive skill development, the part of playing training is essential. For example, when teaching how to play skipping notes, teachers can prepare a cup of hot boiling water before the lesson. During the lesson, let the students experience, what it feels like to touch their hands to hot boiling water. This can be done by having a student come up on stage for a practical exercise and then explaining how the skipping sound is felt through the bouncing action of the student's hand when it touches the hot boiling water. This manipulative situation allows students to understand how to play and is also a good way to induce interest in learning.

c. Language situation. There is no difference in essence between music and language; they are both mediums through which human beings express their emotions, only in different forms. Therefore, beautiful words expressed at the right time can have an unexpected effect. (Lin, 2017) For instance, when explaining the acoustics of the gentle touch of a column chord, the teacher can start by playing a piece of music from Bourgmuller's Pastoral. When the students are immersed in the melody, the teacher then uses elegant phrases and appropriate soft words to describe the scenery of the grassland. At this

point, the students' minds seem to be paved with a beautiful scroll that slowly opens up, giving them both visual and auditory enjoyment. The teacher is then able to fully resonate with the students and impress them in their minds when explaining the role of the column chord.

Using Teaching Collaboration to Create a Positive Learning Environment

One of the most important characteristics of music is collaboration. Without collaboration, the creation and existence of music would be meaningless. The importance of collaboration in the teaching of piano music education is therefore self-evident. (Cao, 2006) This kind of collaboration requires the teacher to deal well with two aspects of the relationship: the collaboration between teacher and student on the one hand, and the collaboration between students on the other. By working together, students can continually “discover” others and at the same time constantly re-examine themselves. This will not only create a united and supportive learning atmosphere and give full play to the students' main role but will also increase their overall enthusiasm for participation so that each collaborative member can work together on their own to achieve their learning goals. The “Project-based” piano teaching model embodies this interactive model. For example, students work in small groups to discuss the project and then corroborate their findings with the teacher. They then exchange different voices in practice to experience whether the conclusions are correct or not. This approach fundamentally changes the relationship between teachers and students and is more in line with the current state of teaching and learning. It achieves the goal of making students think independently and dare to express themselves. In the process of building on each other, a good learning atmosphere is created.

Using Experiential Teaching to Develop Students' Sense of Enjoyment

Experience is achieved in the process. The process of teaching piano in which students are exposed to the work, learn it, and improve their skills through listening, playing, performance and rhythmic teaching activities is the process of emotional experience. This process creates a sense of pleasure in the student. Pleasure is the psychological manifestation of positive emotions, and as long as students have a sense of pleasure, they will be interested and happy to learn. (Feng, 2008)

a. Get students “moving”. The classroom should reinforce the main role of students, give full play to their initiative and provide all opportunities for them to participate. On the one hand, students can experience the joy of using their brains. Teachers can design the teaching content of a topic as a set of interconnected and inspiring questions. Starting with a problem, students are guided through activities to open their minds, analyze the problem in depth, understand it, and finally solve it. In this way, the learning objectives are achieved. The other aspect is to let students experience the joy of doing things. For example, after the teacher has presented the objectives of the topic, most students have the desire to do something with their hands. Wherever possible, teachers try to give students hands-on experience, whether they get it right or not, and also allow students to play independently on stage to demonstrate. It is also advisable for teachers to involve students in demonstrations on stage with the teacher for difficult points that are difficult to solve immediately, to stimulate students' learning potential.

b. Make the classroom “beautiful”. This “beauty” is first and foremost expressed in the quality of the teacher himself. The teacher must put his or her love for piano education and the students into the classroom teaching and devote himself or herself to teaching activities with passion. The teacher can dress appropriately, behave generously, and think quickly. The good qualities possessed by the teacher will be a source of beauty to the students and thus a sense of spiritual pleasure. (Lin, 2018) Secondly, teachers should fully demonstrate the melodic, rhythmic, and rhythmic beauty of the art of piano itself. In teaching, the teacher should purposefully and consciously carry out theoretical analysis and research of the musical work, gradually guiding the students to have a good experience and feel of the melody, key, rhythm, harmony, style, and other musical elements in the work. The teacher should consciously present these elements of beauty in front of the students and guide them to appreciate the work, feel the work, enjoy the beauty of the work, and bring spiritual pleasure. Again, the “beauty” of this classroom is also expressed in the teacher's efforts to create a harmonious teaching atmosphere. Through their words and actions, teachers constantly enhance communication between teachers and students, and maintain communication with students in terms of learning, mind, and emotion, forming a harmonious teacher-student relationship. In the teaching process guide and inspire students, so that teachers teach ideas and students learn ideas “resonate with the same frequency” to achieve the harmonious unity of teaching and learning.

Fostering Creative Thinking to Enrich Students' Imagination

Imagination is the basis of creativity, and only through good imagination can we be good at creating. Therefore, focusing on the cultivation of students' imagination has become an important element and

goal of advanced educational thinking in the world. (Cao, 2006) Creative problem-solving is a combination of focused and creative thinking and is more closely related to the individual's ability to think creatively. In teaching, teachers should aim to make students experiment and express themselves more often. Encourage their independent and creative habits of mind and give them a wide scope for imagination. Strive to cultivate them into well-rounded creative talents who dare to explore, innovate and think well. At the same time, knowledge is not innate but is gradually developed and created by people in long-term social practice. From the perspective of the development of creative skills alone, a wealth of practical activities gives students more opportunities to solve problems and is beneficial to the development of a creative personality. A large number of practical activities also provide rich materials for innovative thinking. Therefore, when teaching, teachers should provide students with plenty of practical opportunities to consolidate their knowledge and acquire it through practice, to effectively improve their creative and practical skills. For example, public performances can be used in the classroom to showcase students' imagination of music as well as to develop their performance talents. Students are encouraged to think and imagine boldly about different genres and styles of music. Teachers can use a variety of performance formats such as rounds, relays, and groupings to enhance their performance skills and psychological qualities. At the same time, other musical fundamentals such as music theory, harmony, and accompaniment are organically integrated into the whole "Project-based" teaching model. Break the traditional notion of students being subservient to the teacher and arrange opportunities for students to engage in creative activities. For example, when teaching a new lesson, students are asked to listen to the melody of the piece and then improvise according to the melody; or given a rhythmic pattern, students are asked to create a melody according to the rhythmic pattern before making an overall arrangement. Through these creative activities, students effectively develop an interest in learning piano.

Application Guarantee of the "Project-based" Piano Teaching Mode

Development of Teaching Concepts

Concepts are the precursors of action and lead the way to action. In the specific case of the "Project-based" teaching model, teachers need to be genuinely aware of the need and significance of using this teaching model. For a long time, piano teaching in universities has followed the traditional teaching mode of students returning to class and teachers demonstrating and correcting. Although excellent musical talents have been trained, with the development of the economy and the progress of the times, higher requirements have been put forward for piano talents, and the talents trained under the original teaching system are no longer able to meet the needs of reality. It is therefore through the use of new teaching models that the shortcomings of teaching can be more effectively improved. The "Project-based" teaching model discussed in this paper, for example, has positive value in terms of stimulating students' interest and initiative and improving their overall quality and competence. Therefore, it is important to make positive changes to adapt the talents cultivated to the needs of the times and society and to help students realize their values.

The Changing Role of The Teacher

In traditional Chinese culture, the "dignity of the teacher" has become a deep-rooted understanding, and every teacher is influenced by this concept in one way or another. Although teachers are equipped with the appropriate qualities and abilities to fully guarantee the smooth running of teaching and learning, the modern view of education is that learning is a process of active construction by the learner and that only by respecting the subjectivity of students and stimulating their interest and initiative in learning can we obtain twice the result with half the effort. In the "Project-based" piano teaching model, the teacher must change his or her role from that of a superior teaching authority to that of a collaborator and helper of the student's learning. Only by seeing the teaching process as a process of enrichment and enhancement can the advantages of this model be maximized.

Refinement of Teaching Evaluation

Teaching evaluation is the measurement of the effectiveness of teaching activities, through the measurement and analysis of the teaching mode and the factors in the teaching process and evaluation, to achieve the optimization of teaching methods and means, and ultimately improve the overall quality of teaching. (Chao, 2006) Teaching evaluation is therefore a key part of the whole teaching process and has a special diagnostic, orientation, and motivational role in ensuring the effectiveness of the use of the "Project-based" model. However, in actual classroom teaching, teaching evaluation has not been given sufficient attention. A piano lesson, after the teacher has finished speaking is a completed teaching task, and the merits of the teaching effect are rarely asked for, so the link should be improved as soon as possible.

The first is to focus on the timeliness of the assessment. Whether it is a large series of projects or a small unit project, teachers should make timely assessments so that students can know the effect of their learning as soon as possible and then make targeted adjustments and improvements. The second is to focus on the diversity of assessment. The quantitative system has always been one of the evaluation methods of the traditional teaching model, but a simple score can hardly reflect the true level of students. At the same time, with the application of the "Project-based" teaching model, the whole learning process is refined, and the overall performance of the students is not objectively and effectively presented by a simple score. Therefore, in addition to quantitative assessment, more new forms of assessment should be introduced, such as portfolio assessment and practical assessment, so that every student's performance is evaluated in a comprehensive, timely, and objective manner.

4. Conclusion

The "Project-based" piano teaching model begins by abstracting the essence of the skill training process and forming a theoretical concept of the subject. The intrinsic logic of the subject matter is then used as a guide to fully engage the students' spirit of intellectual inquiry. In contrast to the traditional teaching mode, which is characterized by passive acceptance of knowledge through imitation, it has been transformed into an active and enterprising state of knowledge acquisition through analysis and understanding. It tests the theory through skills teaching and uses the theory of the subject to guide the teaching of piano skills in a coherent, hierarchical, and structured way so that the teaching content is distinctly systematic. It enables students to acquire knowledge while at the same time focusing on the development of their abilities and the improvement of their comprehensive musical literacy, allowing them to use their hands and brains in the process of thinking and operating, inspiring creative thinking skills. The teacher is not only the transmitter of knowledge during the teaching process but also the designer of the subject and the guide of the task, while the student is the subject of knowledge. Of course, no teaching method is foolproof, but effective teaching models based on scientific theories exist. Their expansion and research will require the persistent efforts of piano educators, guided by scientific educational theories, to improve and innovate.

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