

The Value of Octave Technique in Promoting the Training Skills of Piano Performance

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Abstract. This study aims to enable piano players to better master the training skills of octave technique. In this research, the physical principle of octave technique is introduced, and the mechanical mechanism and acoustic principle of piano in physics are analyzed. Then, the training foundation and training methods of octave technique are explored. The training foundation of octave technique mainly focuses on psychological quality, basic gestures, sitting position, and fingers (wrist and arm). As for the octave training method, it is mainly carried out from the four aspects of shoulder, elbow, wrist, and comprehensive training. Finally, the effects of mechanical structure and training methods on octave technique in physics are discussed. The results show that the players can utilize the mechanical structure of the piano to relieve the pain of fingers caused by playing for a long time without affecting the performance, and the systematic and comprehensive training method can improve the players' mastery of octave technique. The results of this study article have a good guiding significance in octave technique to promote piano training skills.

Keywords: Octave technique; Piano performance; Training foundation; Training methods.

1. Introduction

The performance of music is to translate one's understanding of the music score into vivid and pleasant music, which is actually a second-degree creation process, and also the ultimate purpose of performance. In this process, playing skills play a very important role, which is the basic condition for producing high performance effect, and also the congenital condition for the performance of the essence of music [1]. Therefore, for the players, the training of playing skills is the basis for playing pleasant music, and it is also a process that every player must go through. Without the acquired training of performance skills, players can't concentrate all their attention on performance, nor can they play infectious music works [2].

Octave technology was born in Europe in the 19th century. Due to the historical environment in Europe at that time, a large number of music performing artists appeared. They combined music performance and creation into one, and produced a large number of excellent works to express their feelings, which also promoted the development of octave technology in this special period. Octave technology is a difficult technique for piano players, with special double-tone and strong performance [3]. Different effects will be displayed in different musical works, especially for the climax part of the music, the octave technique can not only enhance the volume of the performance and thicken the sound effect, but also vividly highlight the feelings of the performers, which is a very important performance technique for rendering emotions in musical performance [4]. It is because the octave technology has so many advantages that the composer is constantly combining it with other technologies to express his desire for a higher effect of music performance. When composing music, players are not only required to be fast, but also to have a large distance jump. Or it may mix the hasty speed with the slow lyricism, etc. This kind of difficult performance skill can make the performer play infinite possibilities in the process of performance, but it also brings great challenges to the performer [5, 6]. Many performers are unable to perform the octave, sometimes with uneven strength, poor timbre, and even stiff wrists. The main reason for these phenomena is that the players do not have a correct understanding of octave skills and lack of scientific training methods. Therefore, studying the training methods of octave skills is of great value to the promotion of octave skills. To sum up, to improve the performance skills of piano players, the related research on octave technology is carried out. First, the principle of mechanical structure of piano and acoustics of octave technique are introduced, then the training basis and methods of octave

the sound. Theoretically, when playing octaves, different volumes are obtained at the same down speed of key. The same volume can be achieved only if the finger in the treble area is more forceful than the finger in the bass area and the key is pressed faster. Therefore, considering the volume, the ability of the player's right little finger is more demanding.

2.2 Training Foundation of Octave Technique

The training foundation of octave technique mainly includes three aspects: psychological quality, basic hand posture and sitting posture, and the requirements of fingers (wrist, arm). In this research, the three aspects are explained in detail.

First, psychological quality. For psychological quality, the main problem is to overcome tension. If the octave technique is simply used as a technique for piano performance, the biggest difficulty in the performance is tension. But tension has two sides to the performance. The positive aspect is that maintaining a high degree of tension during the performance can achieve accurate control of timbre. The negative effect is that because the body is stressed for a long time, the muscles will become sore, which greatly reduces the ability of the fingers to play. Therefore, it is necessary to adjust the mentality in time when playing octave.

Second, basic gestures and posture. Gestures are very important for piano learners, especially when practicing octave. In addition to gestures, sitting posture is also very important. Players need to adjust their sitting posture timely according to their own height and body type. According to experience, sitting with their hips close to the front of the stool is a comfortable way. However, in the actual performance, the players do not pay much attention to the sitting posture, and the bad sitting habit will affect the normal performance of the players.

Third, fingers (wrists, arms). Fingers, wrists, and arms are also important in octave technology. In general, the thumb and pinkie are required to provide support and standing status, the joints can't collapse, and the other three fingers should be in their natural state. The reason is that the support of the knuckles is very important for the grasp of timbre. The wrist is made up of a large number of small joints that are the main determinant of wrist flexibility. Therefore, grasping the flexibility of the wrist can avoid wrist and arm tension. The arm aids the wrist and fingers. During the performance of the octave technique, to make the key touch more precise and the sound more elastic, the movement of the arm and shoulder should be coordinated.

2.3 Training Methods for Octave Technique

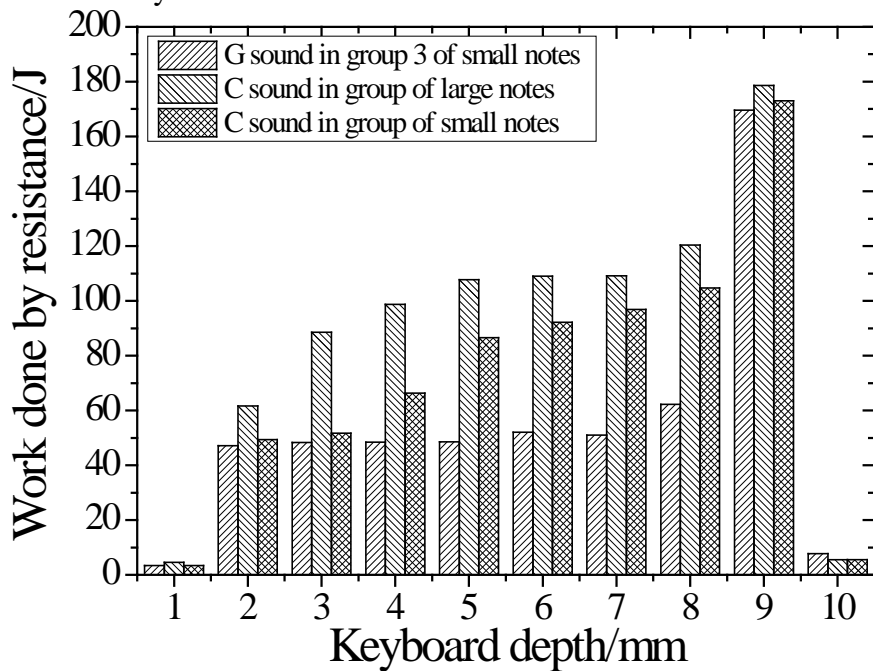
Piano performance is a process from quantitative change to qualitative change, so the whole process of piano performance needs a systematic and scientific connection. Octave technique requires the coordination of the player's palm and wrist. Therefore, it is necessary to perform shoulder, elbow, wrist, and comprehensive training for the player. The octave technique in shoulder requires the shoulder as the main motion joint. The octave technique in elbow takes the elbow as the main motion joint and the driving force to match the overall motion of the joint. For the wrist octave, the wrist is used as the main movement joint of the movement to coordinate with the comprehensive movement of each joint. Comprehensive octave is the synthesis of the first three octave techniques to complete the movement of each joint of the entire upper arm.

3. Results and Discussion

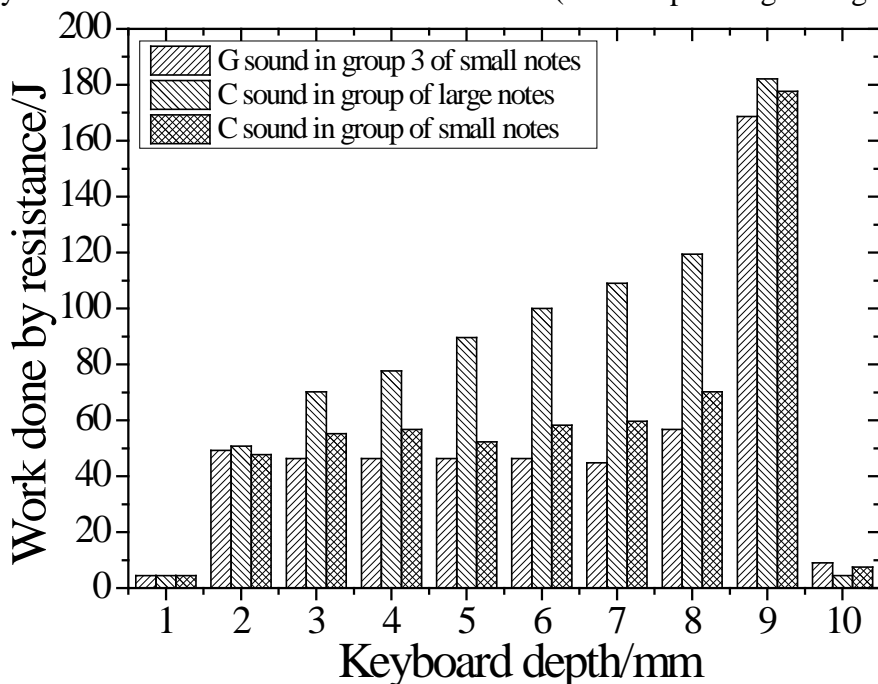
3.1 The Influence of Mechanical Structure of Piano on Octave Technique

Figure 2 is a graph showing changes in key resistance. As can be observed from figure 2(a), when the sound stopper is lifted, the resistance of the keys is small. There is no sound stopper in the treble area of the piano, so the range of sound stopper is from the lowest sound to the G sound in the group 3 of small notes. It can be observed that the G sound in the group 3 of small notes above is basically unaffected by the sound stopper. According to the changes in the figure, it can be observed that the key resistance of G sound in the group 3 of small notes and C sound in group 1 of large notes is not significantly changed due to the lifting of the sound stopper. As can be observed from

figure 2(b), C sound in group 1 of small notes is affected by the sound stopper. With the deepening of the falling displacement of the keys, the work done by the C sound in group 1 of small notes to overcome the sound stopper is slowly increasing. However, there is a difference in the amount of work done by the sound stopper when it is not raised and raised. The work that is done to overcome the resistance is large when the sound stopper is raised, and the work is small when the silencer is not raised. Therefore, depending on the piano design, it can be found that resistance will occur when the keys are touched, but there is a certain change in resistance. That is, when the player steps on the right pedal and the sound stopper is lifted, the force required for playing is relatively small. With the understanding of the design characteristics of the piano, it is possible to instruct some players with limited finger ability to step on the pedal more when playing with octave technique, especially for some long-term performances, which lead to fatigue of the finger muscles. At this time, pedal movement can play two roles. On the one hand, it can relieve the pain of fingers. On the other hand, it can effectively avoid turbid sound.



(a) Key resistance when the silencer is not raised (without pressing the right pedal)



(b) Key resistance when the silencer is raised (pressing the right pedal)

Figure 2. Change of key resistance

3.2 Impact of Training Method on Octave Technique

Figure 3 shows the effect of different training methods on mastering the octave technique. It can be observed from the figure that there is a great difference between the training degree of single octave technology and the training degree of comprehensive octave technology. Obviously, after a period of systematic training, comprehensive octave training makes the player's mastery of octave technology the best.

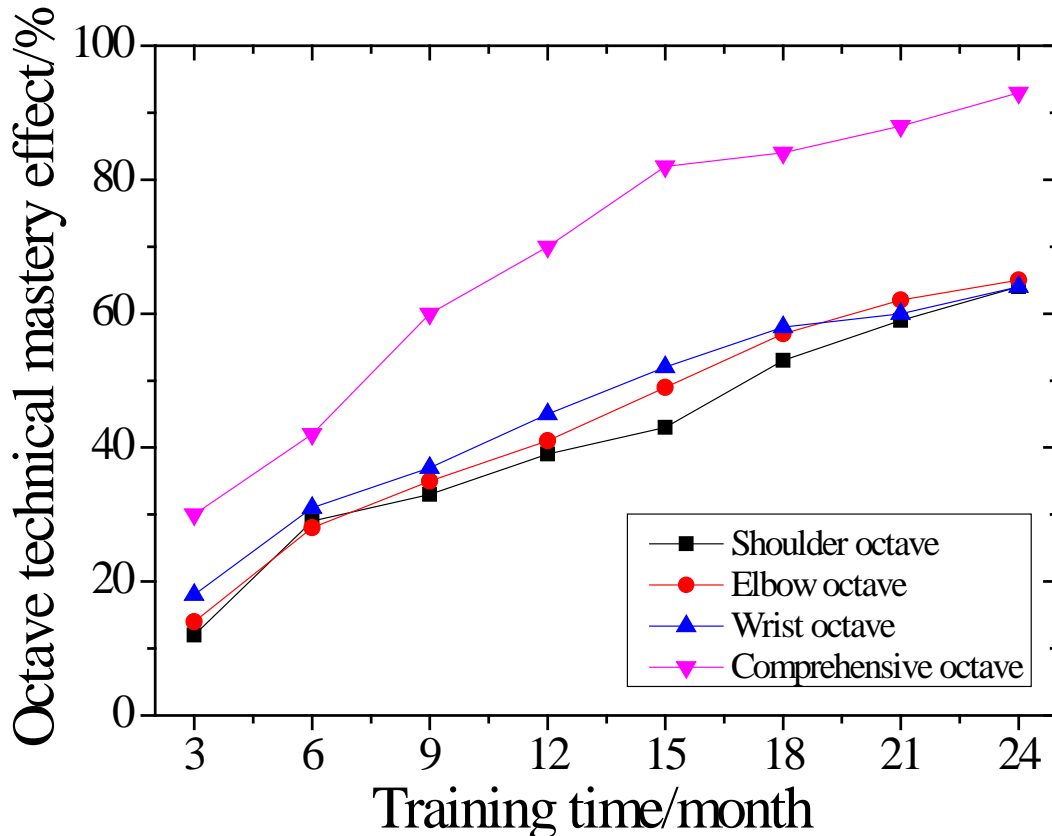


Figure 3. The effect of different training methods on mastering the octave technique

4. Conclusion

To help players better understand octave technology in piano performance skills, in this research, the three aspects of octave technology, including its physical principle, training basis, and training method, is introduced. Besides, the influence of physics principle and basic training on octave technique is discussed. The results show that the mechanical structure of piano can assist players to better use octave technique, and the systematic basic training can help players better master octave technique.

The results of this study are of great significance to the promotion of octave technique in piano performance. However, as the carrier of musical image, octave technology shows different musical aesthetic characteristics in different musical works of different musicians in different periods. Therefore, the octave technology still needs to be explored in terms of grasping the musical image.

References

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