

Teaching Methods of Intonation Training in Clarinet Performance

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Abstract: At present, the clarinet instrument is in the process of continuous development and progress, and its range is also expanding. The intonation training in clarinet performance is a committed step in clarinet performance technology, and also the basis for achieving music performance and artistic creation. However, there are still many shortcomings in the teaching of intonation training in clarinet performance, which directly leads to the phenomenon that the teaching quality of intonation training is not high and students do not master intonation properly. This paper mainly introduces the problems of intonation training in clarinet performance, and finds that the teaching of intonation training in clarinet performance has problems such as teachers' insufficient ability to master multiple styles, teachers' and students' insufficient attention to intonation training, and inadequate control of mouth shape and breath. In clarinet performance, accurate intonation is an important reason for success. Only 2 teachers attach great importance to the intonation training in clarinet performance, accounting for only 10%. Only 5 students attach great importance to the intonation training in clarinet performance, accounting for 12.5%. It can be seen that both students and teachers attach little importance to it. On the basis of analyzing the teaching problems of intonation training in clarinet performance, this paper puts forward a targeted teaching method of intonation training. Adopting scientific methods to train clarinet intonation can help students master intonation techniques better and reach a higher level.

Keywords: Clarinet Performance, Intonation Training, Fingering Training, Fixed Intonation Practice

1. Introduction

With the continuous development of technology, the clarinet is also developing in a fine direction in terms of technology. The clarinet has a good setting in terms of pitch control in terms of technology, which can avoid the mispronunciation to a certain extent. This is only a pitch adjustment made from the instrument itself, and in the actual performance process, the performer also needs to have sufficient perception of the instrument in order to better avoid the phenomenon of deviation. Especially for indoor performance, clarinet players should practice intonation to reduce the occurrence of off tone events. Kozii Olga's analysis of the content of students' training showed that traditional methods of teaching instruments do not take advantage of the holistic nature of choral conducting courses and the progressive and structured nature of training. He aimed to verify the effectiveness of progressive methods in cultivating students' imagination and intonation skills in choir conducting courses. The teaching conditions for effectively developing imagination and intonation abilities among students using choir conducting courses have been outlined [1]. Ovcharenko Nataliya found that applying innovative technologies to vocal training in higher art colleges and art teaching education to form the skills of future music teachers is a particular concern today. Teachers must master a wide range of intonation teaching techniques and apply them to the practical activities of music teachers. The methodological basis for the formation of technical culture in the vocal training process of future music teachers includes scientific approaches such as culture, technology, ability, and innovation [2]. The above scholars believe that in the process of clarinet playing alone and symphony playing, even a little off tone phenomenon would have a great impact on the performance results.

Improving intonation skills and mastery of the clarinet allows for better performance of the clarinet in all situations and ensures overall harmony in the performance of the piece. Sares Anastasia G. found that music training is usually associated with enhanced auditory discrimination, but the relative roles of pitch and time in music and speech are still unclear. Additionally, it is currently unclear whether pitch

and time processing are related between individuals and how they are influenced by attention. His research aimed to examine the intonation and temporal processing of speech and tone sequences, taking into account intonation training and attention [3]. Bolduc Jonathan discussed the influence of music training on the development of preschool children's inhibitory control, speech processing, gross and fine motor skills. The automatic response inhibition ability of children in the music group was significantly improved. Music training is of great help to the development of executive function and phonological awareness in preschool children [4]. The purpose of Miller David S' research was to explore the influence of range, direction and amplitude on musicians' evaluation of chamber music ensemble intonation, as well as the use of repeated measurement design method and its influence on music education research [5]. In today's rapidly developing economy, people's demands for material things are becoming increasingly high, and they are also paying more and more attention to the joyful experience of the spirit. Music is a form of emotional expression of will. With the development of society, the teaching of intonation training in clarinet performance is also increasingly concerned by society. Many students have chosen clarinet as a funny instrument with humorous rhythm. In the teaching of clarinet, intonation training is the most basic and critical part, which must be strengthened in practice.

2. Problems in the Teaching of Intonation Training in Clarinet

The intonation training of clarinet has always been an important issue in the teaching of clarinet performance. Although the beauty, science and structure of various musical instruments have been constantly improved in the past few years, the structure of clarinet has also become more accurate, which has greatly improved the intonation quality of clarinet [6-7]. However, it is undeniable that in the process of playing the clarinet, no matter how perfect its structure and high its value are, it would have intonation problems to varying degrees, not only because of the instrument itself, but also because of the player's understanding and proficiency [8]. In order to investigate the problems in the teaching of clarinet intonation training, this paper investigates and analyzes 20 clarinet teachers and 40 clarinet students in a music major.

2.1 Ability to Master Diverse Styles

In the current clarinet intonation training and teaching in China, teachers still use classicism and romanticism, which is a compulsory course for every clarinet learner. It should also be noted that with the emergence of a large number of "modernist" works, including the widespread use of gliding, double articulation, mixing, treble and other techniques, the performance ability of the clarinet has been further developed [9-10]. However, the intonation training teaching in the clarinet is still relatively slow to respond to this trend, and the teachers' teaching philosophy has not changed. The teacher's ability to master diverse styles is shown in Table 1:

Table 1. Teacher's ability to master diverse styles

Mastery ability	Teachers	Percentage%
Very strong	2	10
Relatively strong	3	15
Weak	10	50
Very weak	5	25

As shown in Table 1, there are 2 teachers with strong ability to master multiple styles, 3 teachers with strong ability to master multiple styles, 10 teachers with weak ability to master multiple styles, and 5 teachers with very weak ability to master multiple styles.

2.2 Low Attention Level

Because of its calm and elegant sound quality, the clarinet has been favored by people for a long time. Whether in solo or symphony performance, the clarinet can play an excellent musical charm. In the process of learning the clarinet, if people want to better show its unique timbre, people need to use intonation training to strengthen the player's skills, and people can also train the students' perception ability [11-12]. However, in practical life, teachers and students do not attach great importance to intonation training. The importance attached by teachers and students to intonation training is shown in Figure 1:

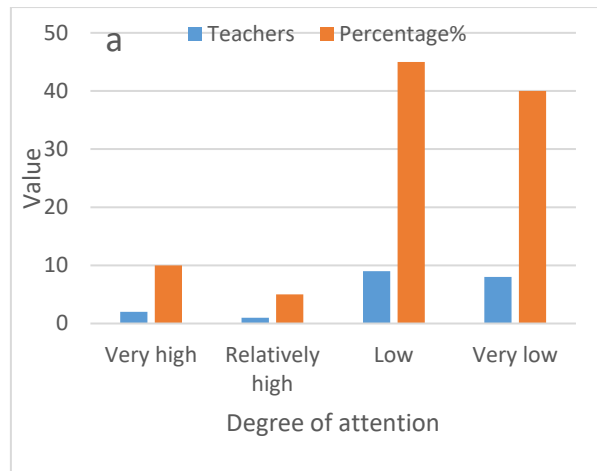


Figure 1 (a) Degree of importance attached by teachers

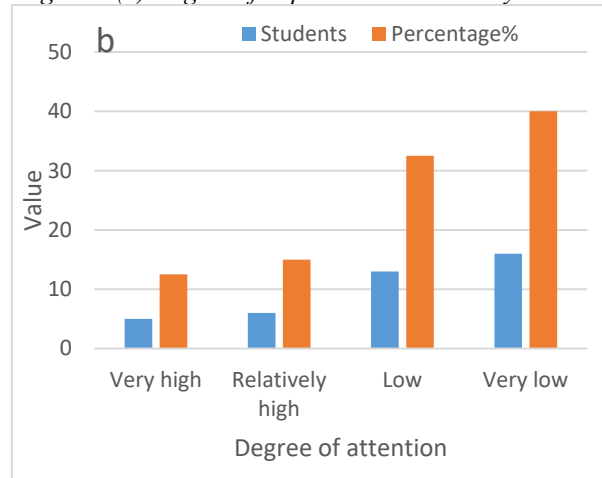


Figure 1 (b) Students' level of attention

Figure 1: Importance level of intonation training

As shown in Figure 1, in Figure 1 (a), only 2 teachers attach great importance to the intonation training in clarinet performance, accounting for only 10%. Eight teachers pay very little attention to the intonation training in clarinet performance, accounting for 40%.

In Figure 1 (b), only 5 middle school students attach great importance to the intonation training in clarinet performance, accounting for 12.5%. Sixteen students pay very low attention to the intonation training in clarinet performance, accounting for 40%.

In the process of clarinet playing, teachers would gradually infiltrate students, so that they can actively pay attention to their own intonation problems in the process of playing, so as to improve their sensitivity to intonation, thus forming the thinking of intonation definition [13-14]. In this way, they can form more stable intonation memory by repeatedly thinking about intonation during training and clarinet appreciation appraisal, thus putting forward higher requirements for their own training [15].

2.3 Mouth Shape and Breath Control

In the performance of clarinet, whether the mouth shape is correct or not is the core of playing. The resonance between the mouth shape playing and the sound, the change of timbre, breathing, and voicing would affect the whole playing process. The main playing skill of the clarinet is to be "tight but not stiff, and loose but not slack". The teacher believes that students and their level of control over their mouth shape and breath are shown in Figure 2:

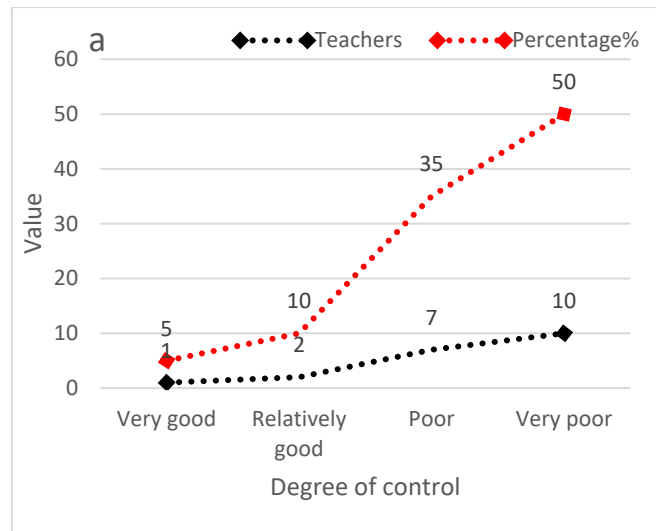


Figure 2 (a) Teacher's perception of students' control over mouth shape and breath

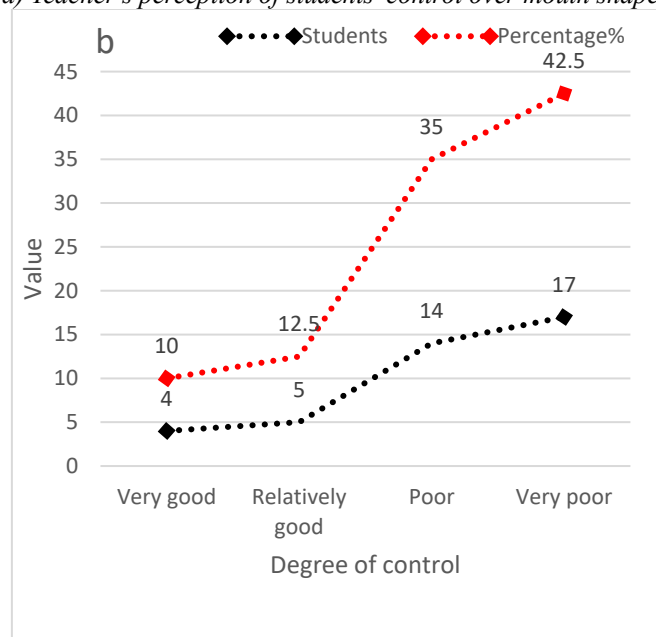


Figure 2 (b) Students' perceived level of control over mouth shape and breath

Figure 2: Control degree of mouth shape and breath

As shown in Figure 2: in Figure 2 (a), only one teacher believes that students have very good control over their mouth shape and breath, accounting for only 5%. Teachers believe that 10 students have very poor control over their mouth shape and breath, accounting for 50%.

In Figure 2 (b), only 4 students believe that they have very good control over their mouth shape and breath, accounting for only 10%. Seventeen students, accounting for 42.5%, believe that they have very poor control over their mouth shape and breath. This type of playing instrument has very strict requirements for mouth shape, and only by playing with the correct mouth shape can good music be played.

2.4 Insufficient Intonation Training

There is a wrong understanding in China's current music education that learning a musical instrument, such as the violin and clarinet, is about becoming an excellent soloist. This wrong understanding has led to the unbalanced development of people in clarinet [16]. In addition, due to objective constraints, Chinese performers lack a learning environment that can cooperate with each other, which further exacerbates the problem of cooperation between them. Therefore, on the one hand, people have cultivated a batch of world-class clarinet, and on the other hand, people's professional

bands have not made breakthrough progress in this regard. Students majoring in music should be improved from various aspects such as ideology and teaching. From the understanding of chamber music ensemble, the training time of chamber music ensemble, and the cultivation of students' hearing ability are improved. Ensemble is a more expressive piece of music than solo. Therefore, how to improve the level of tone in clarinet performance is an important task of the times for every performer [17].

The adequacy of intonation training is shown in Table 2:

Table 2: Teachers and students' perception of the adequacy of intonation training

Adequacy	Teachers	Students
Very sufficient	1	0
Relatively sufficient	2	3
Lacking	6	16
Very lacking	11	21

As shown in Table 2, there are 1 and 0 teachers and students who believe that intonation training is very sufficient. Two and three teachers and students believe that intonation training is sufficient. There are 6 and 16 teachers and students who believe that there is a lack of intonation training. There are 11 and 21 teachers and students who believe that intonation training is very lacking.

As a woodwind instrument, the clarinet has been popular among music lovers since the Renaissance. Until now, it has played an important role in chamber music and symphony. In view of the problems existing in the teaching of intonation training in clarinet, this paper puts forward some solutions and corresponding countermeasures. In fact, the level of pitch is not only related to the performance and rhythm of the instrument, but also closely related to factors such as the performer's own experience, musical cultivation, and hearing.

3. Basic Teaching Content of Intonation Training in Clarinet Performance

3.1 Fingering Training

In clarinet learning, fingering table training is the most basic content. There are standard fingering positions in the fingering table, which requires players to be familiar with and master. Only by memorizing the fingering table in mind, can they find the correct intonation position in playing [18-19]. Although fingering table training is the most basic practice, it would greatly affect the consistency of music in the whole process of clarinet playing. In the training of fingering table, there are some fixed templates. In the specific performance process, some flexible changes can be made according to the arrangement of the music, which requires the music teacher to explain the students in detail, so that students can not only master the fixed fingering, but also have a certain fingering flexibility.

The pitch is also influenced to some extent by the pitch effect of the instrument itself. Usually, through the installation of seamless instrument joints, more accurate pitch effect can be achieved, but it does not fully comply with [20]. Generally speaking, different manufacturing techniques of musical instruments can cause different changes in their pitch. If the performer has no experience in adjusting the pitch, they can invite a professional to adjust and try out the pitch. If there is a discrepancy in the corresponding sound zone, the pitch of the instrument should be adjusted appropriately, and the characteristics of the pitch should be familiar with. When playing, it is also important to consider the player's control over the pitch. In normal times, it is important to make subtle adjustments to the instrument in order to continuously improve one's pitch.

3.2 Basic Training of Intonation

Clarinet long tone training can adjust students' perception of strength and rhythm. In the process of playing long tones, it can not only exercise students' breath, but also deepen students' impression of intonation, and virtually increase their familiarity and grasp of intonation. In basic practice, the practice of the long scale is not only a test for the operator to play, but also a test for the operator. When playing, each long note needs to be blown out in one breath, which requires the performer to control their breathing. Although each instrument has long pitch practice, there are still some special differences in the practice of different instruments. In the Clarinet training, the long tone training can be divided into three stages: basic training, mainly to provide beginners with some simple training operations, so that learners can have a deeper memory of the fingering and accent of the sound; After practicing the

natural scale, continue with the long notes practice, practicing the breath between intervals, subtle changes in mouth shape, and key reactions. In the reinforcement stage, it is to give the performer a stronger sense of pitch difference, mainly through effective joint training of arpeggios and natural scales. In the reinforcement stage, more attention is paid to the processing of ligatures and the requirements for pronunciation effect are also more fluent. The third stage focuses on long notes and scales as the main training content. This stage is based on the first two stages, adding richer playing forms and rhythms, and allowing the performer to achieve a higher level of comprehensive coordination in various aspects such as fingering, breath, tongue, etc.

3.3 Training of Memory Pronunciation

In general, the control of pitch is achieved through the performer's own memory of pitch. Therefore, it is necessary to train the intonation formed in the brain to improve the sensitivity and delicacy of the brain's response, so as to more accurately hear the differences between different intonation effects and help the performer adjust the intonation accurately. For performers, the accuracy of pitch is directly related to their basic mastery and improvement. In the usual training process, it is important to listen to excellent music, constantly enrich the database of intonation in one's memory, improve the quality and richness of intonation, and ultimately improve one's performance level. Only through repetitive stimulation can intonation form a habitual and sensitive response in the brain, which can be naturally manifested in training, rather than playing through continuous memory and search. A truly natural performance does not require deliberate performance, but rather requires the expression of pitch to be transformed into a conditioned reflex, allowing for smooth performance.

4. Other Approaches to Teaching Methods for Intonation Training

4.1 Fixed Intonation Practice Method

During clarinet training, teachers can adopt the method of fixed pitch, so that students can strengthen their sensitivity to pitch when playing long notes, and understand how to find the best pitch by controlling breathing. The fixed intonation practice method can help performers have a more profound impression of intonation during relatively stable practice, thereby forming a fixed impression of intonation in the brain. When encountering pitch problems in the future, teachers can also find a suitable pitch expression by adjusting their breathing and stability, and express the music more smoothly. In the teaching of clarinet performance, the training of tuning is a very important work. The practice method of fixed pitch refers to the practice of pitch during playing. In a certain sense, tone setting training can improve students' ability to distinguish sounds. In practice, by repeatedly training the fingering of clarinet players, each player can be controlled. Through long-term practice, students can develop a physical memory of intonation and develop a mental inertia, so that students can effectively maintain the smoothness and stability of their syllables when playing the clarinet, thus improving the effect of playing.

4.2 Hand Brain Coordination Exercise Method

In addition to working hard on breath and fingering, clarinet intonation training should also pay attention to the use of the brain's recognition ability. Teachers should help students form a subconscious impression of intonation in the cerebral cortex, allowing the brain to consciously form a conditioned reflex area for intonation, thereby coordinating intonation. This training method is usually combined with the basic practice of the clarinet. It is difficult to implement it alone. It needs to practice hard in daily life to cultivate the coordination of hand and brain. In each practice, teachers should guide students to concentrate, and strengthen the stimulation of the brain, so as to cultivate intonation awareness. Clarinet performance puts forward higher requirements for the coordination of the player's body. For example, the player needs to coordinate the shoulder, elbow, wrist and fingers when each finger moves in a different range. At the same time, it must ensure that the hand and brain have a coordinated rhythm. Relatively speaking, the coordination training of body movements is a relatively abstract content, and it is difficult for students to truly experience and comprehend. In the process of practicing body coordination for students, teachers should create a natural and relaxed training range based on the actual situation.

5. Conclusions

Generally, the clarinet is mainly used for chamber music and symphony. Both chamber music and symphony have high requirements for intonation. In the process of clarinet performance, intonation training is an important link, which requires teachers to explore more in the actual teaching process. In the teaching of clarinet, intonation training is a relatively complex course, which can not be achieved overnight if students have a deep understanding of the knowledge and skills. In actual intonation training teaching, whether it is training students' fingering skills, basic skills of intonation, or memory intonation, scientific training methods should be adopted to continuously improve students' intonation level. The basic training of intonation is often boring, but the effect is very good. Only through continuous basic training can stable intonation strength and intonation control be formed. Teachers should also summarize their own teaching methods in the teaching process, find more effective methods that can effectively improve students' intonation, add some interest to the training, and ensure the quality of training. Only in this way can clarinet learning be more effectively promoted.

References

- [1] Kozii Olga, et al. "Experience in developing imaginative and intonational competencies in future music teachers." *Revista Romaneasca Pentru Educatie Multidimensionala* 12.4 (2020): 16-37.
- [2] Ovcharenko Nataliya, et al. "Innovative technologies in vocal training: Technological culture formation of future musical art teachers." *Journal of History Culture and Art Research* 9.3 (2020): 115-126.
- [3] Sares Anastasia G., et al. "Pitch and time processing in speech and tones: The effects of musical training and attention." *Journal of Speech, Language, and Hearing Research* 61.3 (2018): 496-509.
- [4] Bolduc Jonathan, et al. "The impact of music training on inhibition control, phonological processing, and motor skills in kindergarteners: a randomized control trial." *Early Child Development and Care* 191.12 (2021): 1886-1895.
- [5] Miller David S. "The Effect of Register, Direction, and Magnitude on Musicians' Evaluations of Chamber Ensemble Intonation: A Within-Study Comparison for Analysis of Repeated Measures." *Journal of Research in Music Education* 70.3 (2022): 339-360.
- [6] Sehedá, Natalia, et al. "Developing Creative Abilities of Future Musical Art Teachers by Means of Choreography: An Experimental Study." *Journal of History Culture and Art Research* 8.2 (2019): 293-300.
- [7] Riseling, Robert. "The Most Advanced Clarinet Book." *The Clarinet* 49.3 (2022): 64-65.
- [8] Mcdonald, Shannon. "Accommodating Learning Differences in the Clarinet Studio: Private Teacher Experiences and Pedagogical Guide." *The Clarinet* 49.3 (2022): 53-59.
- [9] Chatziioannou, Vasileios, et al. "Investigating clarinet articulation using a physical model and an artificial blowing machine." *Acta Acustica United with Acustica* 105.4 (2019): 682-694.
- [10] Weiss, Anna E., Manfred Nusseck, and Claudia Spahn. "Motion types of ancillary gestures in clarinet playing and their influence on the perception of musical performance." *Journal of new Music research* 47.2 (2018): 129-142.
- [11] Lo, Chi Yhun, et al. "Music training for children with sensorineural hearing loss improves speech-in-noise perception." *Journal of Speech, Language, and Hearing Research* 63.6 (2020): 1990-2015.
- [12] Yusufovna, Ganiyeva Vazira. "Methodology for Conducting Communication Music Lessons in Preschool Educational Institutions." *International Journal of Social Science & Interdisciplinary Research* Issn: 2277-3630 Impact factor: 7.429 11.11 (2022): 471-474.
- [13] Chari, Divya A., et al. "Impact of auditory-motor musical training on melodic pattern recognition in cochlear implant users." *Otology & Neurotology* 41.4 (2020): e422-e431.
- [14] Coyle, Whitney L., and Jack D. Gabriel. "A method for automatic detection of tongued and slurred note transitions in clarinet playing." *The Journal of the Acoustical Society of America* 146.3 (2019): EL238-EL244.
- [15] Reed, Elizabeth A. "Do you Hear What I Hear? Foundations of Intonation for Orchestra Students." *American String Teacher* 72.4 (2022): 47-52.
- [16] Zabanal, John-Rine A. "Effects of short-term practice with a tonic drone accompaniment on middle and high school violin and viola intonation." *String Research Journal* 9.1 (2019): 51-61.
- [17] Giordano, N., and J. W. Thacker. "Navier-Stokes-based model of the clarinet." *The Journal of the Acoustical Society of America* 148.6 (2020): 3827-3835.
- [18] Stockman, Tehya, et al. "Measurements and simulations of aerosol released while singing and playing wind instruments." *ACS Environmental Au* 1.1 (2021): 71-84.
- [19] Franz, Leonardo, et al. "Facial muscle activity patterns in clarinet players: A key to

understanding facial muscle physiology and dysfunction in musicians." Annals of Otolaryngology, Rhinology & Laryngology 129.11 (2020): 1078-1087.

[20] Garzoli, John. "Competing Epistemologies of Tuning, Intonation and Melody in the Performance of Thai Classical Music on Non-Fixed-Pitch Instruments." *SOJOURN: Journal of Social Issues in Southeast Asia* 35.3 (2020): 407-436.