

# Research on the application efficacy of “pharyngeal voice training” in singing training

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**Abstract:** “Pharyngeal voice training” is a very traditional voice training method. Compared with ordinary voice training, pharyngeal tone attaches great importance to singing training, which can not only achieve comprehensive training of vocal organs, but also have health care effects on voice. Integrating the content and methods of pharyngeal training into singing training can mobilize students’ enthusiasm for learning professional knowledge, shape correct singing concepts, improve singing level, and achieve better singing teaching results.

**Keywords:** singing training; pharynx training; method summary; application efficacy

## 1. Introduction

Pharyngeal sounds are essentially a special way of vocalization between true vocalization and falsetto. As early as the 1930s, Dr. Lin Junqing systematically studied the pharyngeal voice training method based on multidisciplinary theoretical knowledge and continued to practice it effectively, and achieved good teaching results. Pharyngeal voice training has shown good efficacy in developing and health care artistic voice, but due to the influence of various factors, pharyngeal voice itself seems to be covered with a layer of mystery, so far it has been controlled by a few people. Although the pharynx is not the whole of singing, nor can it be formed by itself, but it is certain that the pharynx is a very good way to train the vocal function [1].

In the 1950s, Lin Junqing, a Chinese vocal music educator, learned the pharynx training method from Ponavita. After several years of exploration and research, he published the eight steps of pharynx training and cultivated many excellent singers. In recent decades, some scholars have studied the pharynx training method in depth. Pharyngeal is a kind of characteristic sound between true voice and falsetto developed based on the “bubble sound” generated by the vocal cords. of bright colors. It requires the pharynx itself to be systematically trained to form a “pitch pipe”, and to cooperate with a good breathing process, the air flow seems to transmit the pitch through the “pitch pipe” like a whistle, and is reflected to the head cavity against the nasopharyngeal cavity, and is It felt like a sharp and loud voice coming from between the eyebrows and the top of the head.

Shang Jiayang talked about the pharynx in his book “The History of Vocal Music in Europe”[2]. The 20th century vocalist Kesari’s “sound column” theory is the “pharynx” practice method specially researched by Lin Junqing. Mr. Lin linked this unique vocal method with his own singing teaching experience and put forward the corresponding theoretical theory of “Eight Steps of Pharyngeal Vocal Training”. Due to historical reasons, it has been controversial, and some scholars have low acceptance. In most cases, the tenor uses the pharynx to adjust the specific position of the sound to make a high pitch. Whether it is “mask singing”, or “close”, “backward” and other methods for tenors to achieve high-pitched effects, the pharynx adjustment is used. Voices differ only in the way they are called. Based on the above analysis, the author believes that pharynx sounds are produced along with the development of vocal singing technology.

## 2. Contents of the preliminary work of pharyngeal training

In the process of pharyngeal vocalization, all the organs of the body should be mobilized scientifically. In essence, this process is the process of effective coordination and application of the body’s breathing and resonance system, so that the singer gradually enters the ideal state. In the early stage of vocalization practice, it is necessary to strengthen the mutual cooperation between the following muscle strengths [3]:

(1) Open the mouth slightly, lift the two muscles around the mouth, and keep the corners of the mouth upturned to form an inverted triangle;

(2) The nostrils can be kept open by inhaling slightly, and the muscles on both sides of the root of the nose can be lifted up. Hand assistance can be used, and the expression looks like a sob;

(3) Lift the muscles on both sides of the “little tongue” (can be found on Baidu, the palate is commonly known as the small tongue), and the pharyngeal wall can then form an inverted triangle. In this state, the larynx of the body will automatically face downward, and the laryngopharyngeal cavity will automatically expand;

(4) Elevate the muscles on both sides of the cheekbones to maintain a smile on the face; on both sides of the cervical vertebrae, there are two muscle forces in the position of the back of the neck near the pharyngeal wall, which affect the effect of treble. Singing “stalking the neck” in daily life is to raise the muscles on both sides, and it is necessary to maintain this when singing high notes.

### **3. The method of pharynx training in singing training**

#### **3.1 Silent training**

##### **3.1.1 Open mouth practice**

During singing training, the specific method of opening the mouth during pharyngeal vocalization can be explained as follows: First of all, ask the practitioner to keep his chest up, his back straight, his eyes straight ahead, and his head slightly level. The ground is vertical. Secondly, keep the chin fixed, and slowly open the mouth upward. The above process must be done very easily and smoothly, and gradually open the jaw to the maximum state, along with the process of opening the jaw, and keep the back of the neck to produce a kind of fold. The whole thyroid bone maintains an open feeling, the small tongue of the larynx is lifted up, the strength of the entire pharyngeal muscle is tightened, and the tongue is slowly retracted into the mouth, and the sound is maintained with tension. The above process must be done easily and naturally. All in one go, then close the jaw, and return to the original position to look forward [4].

In the process of opening the mouth, the practitioner must practice the above method and process repeatedly for a long time until it is completely mastered and can be applied skillfully. However, it is not possible to perform auxiliary exercises in the form of pulling the chin downward during specific exercises. It is necessary to carry out two-way movement, separate the upper and lower teeth in reverse, and open the jaw upward in an accurate and reasonable way without affecting the muscles of the chin, and the laryngeal muscles can also be maintained. Completely relaxed state. During the mouth opening practice, both eyes must look upwards with the opening of the jaws, with the feeling of looking up at the sky and maintaining a smile on the face, which significantly expands the space of the oral cavity.

##### **3.1.2 Shaking the chin**

This is the second practice stage for beginners who participate in pharyngeal vocalization training activities. Participating in corresponding training activities can help them develop a good habit of effectively relaxing the jaw and neck muscles as soon as possible. In his teaching practice, vocal music teacher William Wienard often supervises students to repeatedly practice chin shaking. The practice method of shaking the chin during pharyngeal vocalization can be summarized as follows: First, the practitioner subjectively maintains the chin in a still state; secondly, slowly open the mouth and open the jaw upward, and then relax naturally and easily downward chin and maintain this state; finally, fix an axis, such as shaking the head evenly from side to side with the cervical vertebra as the axis, the practitioner's chin will also shake from side to side along with the above process [5].

##### **3.1.3 Throwing the tongue**

The training method of tongue throwing can be summarized as follows: First, open the mouth as wide as possible through the mouth opening training mentioned above, and at the same time raise the pharyngeal wall, actively stick out the tongue during the process, and confirm that the tongue has been stuck out. After the outside of the mouth, fix an axis, use the cervical spine as the axis and shake the head evenly from left to right. During the above process, the tongue must be naturally and relaxed with the shaking process of the head.

### **3.1.4 The use of Benoli's breath**

This is one of the important contents in the practice of pharyngeal sound training. The main reason is that breath is the power output for the body to achieve vocalization, and steady, strong and powerful breath support is the key to success. The process of breath practice is not very complicated. The practice method is as follows:

First of all, keep the chin fixed, open the upper mouth, especially pay attention to the upper lip and expose the upper teeth, and at the same time raise the cheekbones to raise the eyebrows and stare, and suck the back of the head. This is a state where the lower mouth is completely relaxed, the upper mouth is actively opened, and the tip of the tongue is against the lower teeth. Inhale while doing the above opening movements, and keep the breath state not to relax, and place a "Bah" on the hard palate. Quickly tighten the abdomen, using the movement of the abdomen to make the back have a push-back force. A short, powerful blast pronounces "Bah" as the force builds up to the back of the neck.

During the above process, the practitioner will feel that his abdomen will float up and down with the change of breath, try to keep the chest in an open state, keep the feet open and stand firmly during the whole practice process, and inhale the air to the dantian area, and then push the exhaled breath inward from the lower abdomen, and repeat the "inhale" and "exhale" actions in a cycle [6]

## **3.2 Pronunciation training**

### **3.2.1 Bubble sound**

The training process of bubble sound is as follows: First, when practicing, fully open the body, open the chest cavity, fully open the throat and facial muscles, expand the larynx, make the larynx, Adam's apple and soft palate in the opposite direction, lift the hyoid bone, loosen the lower abdomen, Inhale the breath to the dantian position. At the same time, when the vocal cords are closed, the front ends of the vocal cords are touching together, and the back ends are separated. When the bubble sound is used, the back ends of the vocal cords are easy to close. (Note: The bubble sound of exhalation is leaking, because the front end of the vocal cords is used. When the back end of the vocal cords like scissors is closed, the vocal cords are also closed, and singing against the pharyngeal wall is like the back end of the vocal cords. There is a small hole at the point where the back end of the vocal cords is blown, and the sound produced at this time is the sound required for singing. It can be attached to the posterior pharyngeal wall. The sound source point is behind the bubble sound. The strength of the pharyngeal wall. Open the chest cavity to push the breath to the vocal cords, and passively emit a long string of bubble sounds. Second, practice long-tone exercises, specifically to continuously prolong a single pitch. When you can feel your own slow adaptation, slide up and down repeatedly. Pitch, maintain the tension of the vocal cords, the sound should be grainy, the larynx should be forced forward and downward, and the soft palate should be raised, so as to widen the vocal range as much as possible. Here, the speaker can be instructed to practice by imitating the sound of an ambulance or an air raid siren. [7]. Finally, scale training can be carried out based on the results of previous research. The high-pitched bubble sound should be open in the throat, not tight, and it must be kept at a high position and the muscles should be pulled behind the head. If all the bubbles act on the true vocal cords, it can only reach F at most Or raise F, and then use the pure voice to have no bubbles, and the false vocal cords are the protrusions above the real vocal cords). When the false vocal cords are attached to the real vocal cords, the sound is falsetto, but the sound source body at this time is still the real vocal cords. Like a guitar capo. The capo is used to shorten the upper strings, and the capo only plays the role of shortening the strings. If the capo is not used for performance, the false vocal cords only play the role of the capo.

The fundamental of improving vocal ability is to find the correct force for scientific vocalization. This exercise is beneficial to experience the smooth feeling of scientific singing and the correct force method. If the learner can master the above-mentioned practice methods well, and really do it step by step, then the individual's vocal range will be widened more and more, and then the actual singing ability will be significantly improved.

### **3.2.2 Humming sound**

Humming is a classic head cavity resonance method. During specific training, the sound should be kept as relaxed as possible, so as to ensure that it can be hummed smoothly from the nasal cavity. There are currently two views on the resonance focus of this method. One is Think that the focus of resonance is between the eyebrows, and the other thinks that the bridge of the nose is the focus. For the humming sound training method, the pharyngeal school selectively draws on it, but there are differences between

it and the conventional humming sound training method. Bubble sound is a humming method commonly used in the pharyngeal school. This training method can significantly expand the vocal range of the singer. When the students' own conditions are greatly improved, they can easily hum and sing high c. Super high pitch above. The learning difficulty of humming and pharyngeal sounds is not high: practitioners should always feel that the sound is emitted from a point below the posterior wall of the pharynx, and maintain that the bubble sound can follow the pharyngeal wall to ensure that the pitch slides up and down effectively and reasonably [8].

### **3.2.3 Pharyngeal training**

Because the pharynx timbre is quite different from the soft and beautiful timbre produced by the traditional voice training method. Crisp, thick and sharp are the main characteristics of the pharynx, which are comparable to the timbre of people's daily shouting, so it is widely used. It's called shouting. The specific process is as follows: open the mouth, relax the tongue, open the jaws and breathing passages, keep the chin still, raise the head to stick out the tongue, raise the eyebrows and stare, and then moderately increase the anatomical position of the back root of the tongue, the tongue is sent out with the force of the back of the tongue, and then find the feeling of tension in the posterior pharyngeal wall, and then induce the simultaneous tension of the diaphragm and dantian through the action of laughing, and then promote the sound of breath. During the above sound production, the tongue should be stuck out, and the tongue, chin should be kept in contact with each other. The laryngeal muscles are in a relaxed state.

## **3.3 Body movement training**

### **3.3.1 Lying down with legs**

That is, to train the pharyngeal vocalization process by straightening the legs in the form of lying flat on the body. During the specific training, the practitioner will place the body flat on the ground, straighten the legs and stick it to the wall, and then can make a sound or practice singing. In the above process, the waist should always be exerted so as to satisfy the singing requirements. In the process of the requirements for strength, the above exercise method can effectively relax our chest, and can also relieve abnormal conditions such as pressure and roar during previous training, and quickly find the support point of breath.

### **3.3.2 Lunge**

That is, the effect of practicing pharyngeal vocalization is achieved by means of the body in the form of a bow. When learning this exercise method, the body posture is like in gymnastics, the left leg (right leg) takes a big step forward and maintains a bend, the right leg (left leg) is straightened towards the back, the upper body is maintained upright, both hands Rest above the knee of the left (right) leg [9]. You can also place both hands next to the psoas muscle, and make an "a" or "e" sound at the moment of doing the exercise. When doing the above exercise, the body should passively perform the corresponding movement action, and it should achieve instant force, in the Inhale from the lower abdomen before vocalizing, and exert force through the lower abdomen.

### **3.3.3 Swing arm method**

That is, by swinging the two arms up and down to achieve the ideal effect of pharynx practice. During the practice of pharyngeal vocalization using the swinging arm method, the practitioner must maintain a posture of holding his head up and his chest up, keeping the support point of the breath around the abdomen, and then shaking the two arms. When they reach the chin position, the pharyngeal wall is lifted up in an instant to emit an "O" [10]. In the process of training with the modified method, instruct the practitioner to use the abdominal force to make the breath sink, not the chest. On the one hand, this training method can improve the proficiency of using the pharyngeal wall muscles during singing training, and on the other hand, it can also enhance the explosive power of singing.

## **4. The specific application of pharynx training in singing training**

(1) The "pharyngeal sound" is combined with the traditional sound training method.

Combine the "pharyngeal sound" with the traditional sound practice method, add appropriate resonance, and guide students to produce the timbre within the teaching design goals. For example, when students sing Whitney's "I Will Always Love You", they can induce resonance in the oral cavity

and laryngopharyngeal cavity based on the standardized training of “pharynx”, and then make the timbre thicker [12]. For example, in the high-pitched part, teachers can skillfully use the “virtual” and “real” of the timbre to guide students to sing. And the mixed sound formed by the resonance of the oral cavity and the laryngopharyngeal cavity is also added, and an unexpected singing effect can be obtained at this time. Only in this way can the “pharyngeal sound” be relaxed and relaxed during the singing process, and then the polishing effect of the “pharyngeal sound” can be maximized in the singing activities [13]. And how to effectively integrate the “pharynx” into the normal voice practice process is a problem that teachers should focus on analyzing in singing teaching. It is possible to try to incorporate the “pharynx” in the vowel conversion exercises in the traditional voice practice.

### (2) Bubble sound can repair vocal cord damage caused by poor vocal cord closure

Using bubble sound to repair the problem of vocal cord damage caused by poor vocal cord closure, assist the speaker to accurately determine the specific position of his vocal cords, and then through systematic and long-term exercises on the vocal cords, it can significantly improve its sensitivity, improve tension, and The use of this method does not require the use of a lot of breath, thereby helping students to gradually master the correct method of using breath.

The “air sound” mentioned in this article is essentially to make the air flow into the vocal cords that are not completely vibrated, and then the vocal cords are completely vibrated under the action of the air flow, and finally the sound is produced successfully [13]. But in essence, the above-mentioned form of vocalization is contrary to the principle of natural occurrence, but the undeniable fact is based on the principle of sound. It makes the students form a kind of error in hearing, so that they breed the feeling of being in a world of nothingness, even an illusory world, and this enjoyment is unlimited.

### (3) Limit tone

In the past, a lot of practice has confirmed that in the process of vocal music teaching, the application of pharyngeal singing skills determines the improvement of the singer’s own timbre and range. The “dolphin sound” that we often refer to in singing training is this limit sound. Here, the author mentioned that Zhang Wei sang the song “Three Days and Three Nights” in “The Voice of China”[14]. His vocal cord tensioning ability during the treble process was at a high level, and the timbre of the singing was extremely penetrating and timbre. It is very bright and heavy, and the above tone is the level that the “pharynx” technique itself pursues and can reach. It is not difficult to obtain the effect of the above limit sound, and the singer only needs to strictly follow the requirements of “pharynx”.

## 5. Conclusion

The “pharynx” training is an effective method to improve the vocal training system. Using the “pharynx” method in singing training can not only break through the previous problems in timbre, breath and range, but also correct the wrong vocalization method and other problems. It also showed good efficacy in the treatment of voice lesions.

In recent years, the national art department has attached great importance to the development of art education, and various teaching theories have been used in the field of vocal music teaching. It can lead the research on the teaching theory of “pharyngeal sound” and create a good foundation for the research on the teaching theory of vocal music.

## Acknowledgments

The 13th Five-Year Plan of Education Science of Guangdong Province in 2019 Special Research Project of Philosophy and Social Sciences in Colleges and Universities (2019GXJK179)

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