A Study on "高腔 (Gao Qiang)" Vocal Technique by Selected Northern Shaanxi Folk Songs

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Abstract
Northern Shaanxi folk songs have a long history rooted in the Loess Plateau. It was started in the Zhou Dynasty (1046 B.C.–256 B.C.). The development and inheritance of folk songs in northern Shaanxi mainly come from life, and art comes from life. Northern Shaanxi folk songs vividly reflect life's joys and sorrows, giving birth to many touching stories on the vast Loess Plateau (Zhang, 2021). Northern Shaanxi folk songs are full of empty and sad melodies, which contain the contradiction between depression and boldness, the entanglement between suffering and happiness, and the dilemma between fate and struggle (Su, 2020). In short, they can all find emotional support in folk songs. In recent years, the development of northern Shaanxi folk songs has shown a prosperous scene; not only new songs have appeared one after another, but some old songs have also been recovered and are deeply loved by the people. The northern Shaanxi folk songs, rich in rhythm and power, align with modern people's aesthetics, so they have developed relatively quickly (Qin, 2014). The northern Shaanxi folk songs have beautiful melodies and unique vocal techniques, especially the "高腔 (Gao Qiang)" technique, which has aroused people's intense curiosity. The researchers used practice-led research as the methodology to summarize them for singing northern Shaanxi folk songs, which had a certain reference significance for people singing northern Shaanxi folk songs, especially for people specializing in vocal, aim to solve the technical difficulties of singing folk songs in northern Shaanxi.

Keywords: Selected Northern Shaanxi Folk Songs, "高腔 (Gao Qiang)" Vocal technique

Introduction
The researcher participated in a project called "Northern Shaanxi Folk Song Talent Cultivation" project funded by the "China National Arts Fund" had be held at Yan'an University in 2022. This project lasted 36 days, participants in this project included university vocal teachers from all over the China, as well as well-known local singers, through the study in the project team, it enabled the researcher to gain a lot of knowledge and systematically study of northern Shaanxi folk songs, including the history, the development process, the vocal techniques, and the dialect of northern Shaanxi. What impressed the researcher the most was the "高腔 (Gao Qiang)" vocal technique, the "高腔 (Gao Qiang)" is refers to the
A melody that appears in the northern Shaanxi folk songs with a large interval span (usually four degrees and above), sung with a combination of real and falsetto voices or falsetto voices, which is characterized by free rhythm, long and high-pitched, wide range, and many tunes with free prolonged tones, thus singing freely and spaciously (Zhang, 2021). The "高腔 (Gao Qiang)" vocal technique is very difficult to master, even seasoned singer and university vocal teachers are afraid of this vocal technique, but the local singers were able to sing with relative ease. The study found no research on the "高腔 (Gao Qiang)" vocal technique data inquiry. The melody in northern Shaanxi folk songs is superimposed in double fourth degrees or even in third and fourth degrees, and the sound range is extremely wide, when singing northern Shaanxi folk songs, local singers mostly use their real voices to sing, and the real voice can reflect the sincere and simple style of northern Shaanxi folk songs. But from a teaching perspective, the technique of combining real and false voices should be used more often when singing the songs, it is very difficult to use the real voice completely, and the expressiveness is relatively weakened, so a singing method of combining real and false voices is adopted (Zhang, 2006). Based on this point of thinking, it would be significance to do some research for "高腔 (Gao Qiang)" vocal technique, that is to say, it can help people who learn northern Shaanxi folk songs to provide some vocal technical reference, and can also enrich the theory of northern Shaanxi folk songs.

The research process of "高腔 (Gao Qiang)" vocal technology is long-term and has a certain degree of difficulty. First, through the collection and analysis of northern Shaanxi folk songs, and through audio, video, and on-site observation, the key techniques of singing "高腔 (Gao Qiang)" vocals are recorded and discussed. After in-depth discussion with the local singers and other university teachers, the local singers gave this study a lot of guidance on pronunciation techniques and singing points, especially on the issue of converting "高腔 (Gao Qiang)" voices into real and false voices, because northern Shaanxi is located in the depths of the mountains, when singing in the field to make the voice high, far away, it is necessary to resort to falsetto. The other university teachers gave a lot of help on the technical level of vocal, such as breath support when singing "高腔 (Gao Qiang)", timbre control, etc. Under the guiding suggestions, which enabled this research to proceed smoothly. The results obtained from the discussion, the technical points of singing "高腔 (Gao Qiang)" are finally sorted out, making this research a new breakthrough.

Because the "高腔 (Gao Qiang)" vocal technique is the soul of northern Shaanxi folk song, it fully shows the northern Shaanxi people's bold and simple character. It can be said that in order to sing northern Shaanxi folk songs well, the technique of the "高腔 (Gao Qiang)" vocal music must be mastered. Studying the "高腔 (Gao Qiang)" vocal technique of northern Shaanxi folk songs is of great significance. It can not only solve the related problems in the singing of northern Shaanxi folk songs, it is of certain significance to northern Shaanxi folk song lovers, professional singers, vocal music learners, practitioners of Chinese national vocal music, and other people who are engaged in singing. Also provide great reference significance for the high-pitched singing techniques in Chinese national vocal singing and teaching.
Methodology

Practice-led research focuses on the nature of practice and leads to new knowledge with operational implications for practice (Smith & Dean, 2009). This research method focuses on expanding knowledge in practice also continuing practice in knowledge. Candy thinks practice-led research is about practice leading to research insights (Smith & Dean, 2009 p.5). This type of research includes practice as an integral part of its methodology and usually falls within the general field of action research. Practical-led research method is a very suitable research method for music performance. This study can take practice and performance as an experimental process and method to gradually improve the research topic. For this study, through practice to find out the vocal techniques of northern Shaanxi folk songs such as "高腔 (Gao Qiang)" vocal technique, and sum up the singing experience and methods. The theory and practice here mainly refers to the induction and summary of "高腔 (Gao Qiang)" vocal technique. Dialectical practices and contextual practices are two important links in practice-led research methods. They are closely related and different from each other, they put forward higher requirements for learners. Taking this study as an example, in simple terms, singer must both have vocal technique ability and good stage performance ability while singing the northern Shaanxi folk songs.

Literature Review

Summary of Vocal Techniques in Northern Shaanxi Folk Songs

Through the study, it was found that there are five aspects of vocal technique in northern Shaanxi folk songs, they are "高腔 (Gao Qiang)," "平腔 (Ping Qiang)" glissando, trill and staccato. There is no documentary study of the "高腔 (Gao Qiang)" vocal technique of northern Shaanxi folk songs, and only videos of the singing can be found. Therefore, this part mainly introduces the other vocal techniques of northern Shaanxi folk songs, and the "高腔 (Gao Qiang)" technique can only be summarised by a brief summary.

"平腔 (Ping Qiang)" means singing with a real voice or a combination of real and false voices with the real voice being the main part. "平腔 (Ping Qiang)" method sounds high-pitched and bright, the melody is ups and downs, and it is bright and smooth, northern Shaanxi folk songs are mainly sung in "平腔 (Ping Qiang)" as the main form of singing and according to the changes in the sound area of the song, can also adjust the proportion of real and false voices appropriately (Liu, 2011). "平腔 (Ping Qiang)" singing is the way of Straight singing, which is one of the singing techniques of folk songs in northern Shaanxi. When singing, singer can try the following coordinate method. First, tighten the vocal cords to keep them from shaking or trembling, and balance the strength to contrast with the vibrato, and then use the breath to make a crescendo to maintain the shape of the mouth and the position of the voice (Liu, 2011). In the singing of northern Shaanxi folk songs, if the use of "平腔 (Ping Qiang)" is used, the real voice should be the main core support, and some need to combine real and falsetto. In the actual singing process, it is also necessary to understand the actual singing needs and integrate the true voice and the false voice effectively (Liu, 2022). At present, the singing style of folk songs in northern Shaanxi is mainly "平腔 (Ping Qiang)". Entirely in real voice singing the northern Shaanxi folk songs in the style of a class, there are
two types of songs, slowly; melody, relatively less volatile, tactfully, gentle. The next type of song is fast; the range is not wide; the forceful melody line is straight.

Glissando vocal technique has always occupied an important position in many singing styles of northern Shaanxi folk songs. This glissando singing style arose because of the frequent downward inflections that are a feature of the northern Shaanxi dialect. The basic characteristic of most northern Shaanxi folk songs is the direct freedom and freedom in music. Because of the unique intonation and way of speech of people in northern Shaanxi, after a long time of development, the intonation gradually changed into glissando. Glissando sings the following line in the northern Shaanxi folk songs: which is related to the northern Shaanxi people's tone of voice (Wang, 2002). There are two kinds of glissando in northern Shaanxi folk songs: big glissando (Example 1) and small glissando (small glissando is a minor third or less, while big glissando is a major third or more). The big glissando singing style reproduces the rich expressive power with exaggerated singing style to achieve a strong mind-blowing effect.

![Example 1 Big Glissando](image1)

Example 1 Big Glissando

Most of the northern Shaanxi folk song singing without big trill but many small trill distinctive appears in the song. These small trill softened the savagery of the northern Shaanxi folk songs and rigid song sounds vivid and full of passion (Wang, 2022).

There are many ways to sing folk songs in northern Shaanxi, among which the staccato singing can better highlight the characteristics of folk songs in northern Shaanxi. The main advantage of the staccato, It is characterised by a short, sonorous, and powerful pronunciation, and each note is actually present. The enunciation is also very clear. The characteristics of staccato singing are mainly the requirements of the voice; the voice should not only be elastic but also short and powerful. Staccato to sing short, pause, and it generally an ornamental, colorific phrase while singing; one should pay attention to the extension of its characteristics to sing lively, natural, and full of life (Liu, 2022). When singing the staccato vocal technique, you should intentionally sing every note truly and clearly, and sing every word also. Some of the staccato should be heavy first and then light, the first word heavier, followed by the word gently pop up, to sing elasticity, clever and real (Dong, 2008).

Specialist in the field of "高腔(Gao Qiang)" Vocal Technique, such as 王向荣 (Wang Xiangrong), 王二妮 (Wang Erni), 杜朋朋 (Du Pengpeng). 王向荣 (Wang Xiangrong) is an important representative of northern Shaanxi folk song singers, his performance is simple and wonderful, his singing technique is high, and he has a deep study of northern Shaanxi folk songs (Lv, 2007).

(link to the performance) https://www.youtube.com/watch?v=sgnLpHcwD7s

王向荣-天下黄河九十九道湾 (Tian Xia Huang He Jiu Shi Jiu Dao Wan).

The video shows his "高腔(Gao Qiang)" vocal technique, he studied folk songs for more than 40 years. He understood various styles of folk songs in northern Shaanxi and personally
visited representative figures of various schools. He had a certain understanding of the history of folk songs in northern Shaanxi. He had the experience of performing all over the country and absorbed the folk songs experience from all over the China. 王向荣 (Wang Xiangrong) said: "Northern Shaanxi people and their folk songs can only be simple and natural. In my opinion, whatever is natural is scientific; If you feel right, you will find the right way. Sing comfortable, others listen to comfortable. Therefore, I sing the northern Shaanxi folk song never packaging, the northern Shaanxi folk song is a specific geographical landform of the formation of a specific local music, the songs through a strong breath of the Yellow River and yellow land breath, this is the taste of northern Shaanxi folk song." Singing folk songs also has an affinity. Folk songs are the songs of the people, the songs of the people. When you sing folk songs, you should not think of yourself as a singer, but as a farmer, a member of the common people (Lv, 2007).

For this study, before this, the research had been done mainly in these aspects: A lot of literature reading and consulting for the study of northern Shaanxi folk songs has a preliminary rudiment; Second, combined with the experience accumulated in previous teaching, through field investigation and learning, researcher have a further conception and research ideas for the study of northern Shaanxi folk songs. Through the practise research and performance practise of northern Shaanxi folk song singing in the past years, through research have found some vocal techniques and a performance summary of northern Shaanxi folk songs.

Results and Discussion

After research, it was found that there are two forms of "高腔(Gao Qiang)" vocal techniques, one is the Traditional Singing, another is the New Singing. The Traditional Singing also called original ecological singing method, this is how traditional singers sing northern Shaanxi folk songs, the term "refers to an original style that is widely used by the public and has not been professionally trained or packaged." The New Singing refers to The younger generation of Shaanxi folk singers from the north, whose style of singing comes from a specific kind of training, the two "高腔(Gao Qiang)" vocal techniques are differences.
As shown in the figure above, they are different in four aspects. First, singing language, basically the traditional singers sing in pure dialects, and basically do not sing in Mandarin. But the younger northern Shaanxi folk singers, they singing language is mainly Mandarin and supplemented by dialects. Second, the timbre of singing is different. The timbre of the traditional generation singers basically uses their own voice, that is the real voice. Then for the younger singer, they have a certain way to sing "高腔 (Gao Qiang)", they mainly combine real and false voices. Three, the voice resonance is different, the Traditional Singing need less voice resonance, and basically rely on their own voice to sing. But in New Singing, the of them is fuller, crisper and penetrating more. The last difference with them is the voice line, the Traditional Singing of singers have more thinner voice line while the New Singing singer have broad tones. Some, because it combines some scientific vocal technique and pays. How are these two "高腔 (Gao Qiang)" techniques used in specific songs? Four songs were selected for this study, one is the Traditional Singing, that is "摇三摆 (Yao San Bai)", the two are New singing, "小桃红 (Xiao Taohong)" and "上一道道坡下一道道梁 (Up a beam and down a slope)", the fourth song is "兰花花 (Lan Hua Hua)", which combination of the Traditional Singing and the New Singing methods.

"摇三摆 (Yao San Bai)"
This folk song is known as one of the representative works of northern Shaanxi folk songs with its catchy melody and high-pitched, humorous and interesting rhythm. The "摇三摆 (Yao San Bai)" describes the way a girl walks. The word "摇三摆 (Yao San Bai)" runs throughout the song, with the purpose of deepening the distinctive portrayal of the female image. The lyrics
express the idea that a girl's "一摇三摆 (Yi Yao San Bai) " when walking makes men very attracted to her. In order to see the girl's face, the man couldn't help but follow the woman home. Then the woman went home and did not go out. The man could only leave temporarily, and then came to see the girl the next day. As a result, he met the girl's mother. The mother and son thought the man was a bad guy and hit him with a pot lid. The man was so frightened that he ran away and came back the next day. As a result, he met the girl's father and was hit twice with "烟袋 (Yan Dai)", the scene was very humorous. The song was completed in such a relaxed and humorous atmosphere.

The man's occupation is that of a "脚夫 (Jiao Fu)", which was a special occupation for the poor people in the barren land of northern Shaanxi in the past. Forced to make a living, they went to the "河套 (He Tao)" area of Inner Mongolia to look for work, travel, and do business, they drove horses and in the open air all year round, and have bitter stories as thick as loess.

The vocal techniques of this song have two aspect, their are "高腔 (Gao Qiang)" and special vocal technique tongue vibrato. The voice should also sound "straightened," and when singing, avoid sounding like the trills in Bel canto singing. Thus, this step is essentially finished once the singing becomes more comfortable. Next, sing the entire song in a cohesive tone and repeat the practice sessions. After that, practice frequently and repeat the first two steps to improve the vocal technique for singing "高腔 (Gao Qiang)". This vocal technique should be used when singing the word "得儿 (De'er)", the lyrics of this song are very distinctive, bringing out the humorous and interesting side of the northern Shaanxi dialect.

Example 3 "摇三摆 (Yao San Bai)"

"小桃红 (Xiao Taohong)"

This song is a northern Shaanxi folk song with a person's name as its title. There are three lyrics in this song, which express a girl's longing for her sweetheart in chronological order. In the northern Shaanxi area of the old society, men and women can not love freely, and there was a traditional feudal mentality that favored boys over girls. "小桃红 (Xiao Taohong)" parents love money, want the "小桃红 (Xiao Taohong)" to marry the rich, but the "小桃红 (Xiao Taohong)" has a favorite people in the heart, this song expresses the girl's desire for free love, the hatred of the feudal thought.

The vocal techniques of this song are "高腔 (Gao Qiang)" and "平腔 (Ping Qiang)", the sound range is wide, the range is b-d3, more than two octaves across, relatively difficult to sing, real to falsetto conversion techniques appear frequently, this is also a major feature of "高腔 (Gao Qiang)" vocal technology. There are three places in this song where "高腔 (Gao Qiang)" vocal techniques appear, such as one example below:
Example 4 "小桃红(Xiao Taohong)"

We should focus on the straight line features of the northern Shaanxi folk song when singing this section. This vocal technique is not the same as the "Traditional Singing" technique. Besides, the pronounce of the song is an important reflection of the style of the song, northern Shaanxi dialect especially the two-syllable words, such as "弯弯", "蹦蹦", etc. These words are typical features of northern Shaanxi dialect, pay attention to the"儿化(Er Hua)" pronunciation of the second character. Then when singing this song, the singer need to use the technique of crying. the purpose is to show the heroine"小桃红(Xiao Taohong)" helpless feelings, missing feelings, can only look at the moon at night secretly cry.

"上一道道坡下一道道梁(Up a beam and down a slope)

It is a "信天游(Xin Tian You)" song from northern Shaanxi. It tells the story of young men and women's beautiful yearning for love, it describes the life of the hardworking people living in this rough and barren land. Since northern Shaanxi is located on the Loess Plateau, "坡(Po)" and "梁(Liang)" are special topography in this area (the specific shapes are as shown below picture).

Picture 1 "坡(Po)"
In China, there is a saying of "横坡竖梁(Heng Po Shu Liang)". In this song, "坡(Po)" and "梁(Liang)" describe a long distance. This song expresses the feeling of missing the sweetheart, looking at these "坡(Po)" and "梁(Liang)" as if you see the sweetheart. Singing this song, to give people a long, vast feeling, as if standing on the "坡(Po)" and "梁(Liang)" to convey their own voice to the distant sweetheart there. This song is a typical northern Shaanxi folk song with a strong "高腔(Gao Qiang)" style. In addition to the correct use of "高腔(Gao Qiang)" vocal techniques, some special training is also required to reflect the far-reaching sound. The special training here refers to the training of some Shouting cavity, and the training should have a certain sense of picture, like the feeling of transferring the sound from the top of the mountain to the bottom of the mountain, from the shore of the lake to the other side, and it will be easier to find the feeling of distant and vast sound with this imagination.

"兰花花(Lan Huahua)"
It is not an exaggeration to say that this song is the calling card of northern Shaanxi folk songs, this song is very well-known in China. This song is based on a true story. "兰花花(Lan Huahua)" was born in Yan'an City in 1919. Her original name was "姬延玲(Ji Yanling)". Because she was very beautiful, she was named "兰花花(Lan Huahua)". When she grew up, she fell in love with a Red Army soldier. Before the wedding day, the soldier was assigned to the front line to participate in the war. "兰花花(Lan Huahua)"'s parents took it upon themselves to marry her off to someone else. But not long after, her husband died and her parents married her to another rich man. In the old society, women in northern Shaanxi had to obey their parents' arrangements for marriage. "兰花花(Lan Huahua)" hated this feudal thought, and she died in depression. After the soldier came back from the war, he heard about "兰花花(Lan Huahua)"'s experience and wrote this song. The original song has very few melodies and sentences, so in order to better perform the song, this research is selected as
an adapted version. There are a total of 7 paragraphs in this version song. The first, sixth and seventh sections belong to Traditional Singing and use the northern Shaanxi dialect, and the other parts are New Singing.

This song expresses the image of a woman who bravely fights against the forces of the old society and has the right to pursue freedom and independence. This song is dynamic in terms of emotional expression, the song have three paragraphs, the third paragraph is the reproduction of the first paragraph, the second paragraph expresses the "兰花花(Lan Huahua)"s strong resistance to the fate of the brave. In this song, the combination of Traditional Singing and New Singing are "高腔(Gao Qiang)" vocal techniques used, so that this song is very characteristic. Usually practice to pay attention to the training of the big leap interval, in singing"高腔(Gao Qiang)" , the main technical difficulty is the problem of real falsetto conversion, practice attention is the training of leap and real falsetto fusion training. Because the number of "高腔(Gao Qiang)" appears more, but also pay attention to repeated practice, to ensure that the quality of singing each time can not be reduced.

To sum up, the northern Shaanxi folk songs not only have beautiful melodies but also have unique vocal techniques, especially its "高腔(Gao Qiang)" vocal technique. This is an inspiration for high-pitched teaching in vocal teaching, to expand new research areas of new vocal techniques. In particular, the characteristics of the conversion of true and false voices in the "高腔(Gao Qiang)" vocal technique of northern Shaanxi folk songs should also be an inspiration for singing other types of songs. Then, mastering the straight sound lines of northern Shaanxi folk songs can be a good reference for singing folk songs in northwest China.

Conclusion
Through research, it is found that the vocal technique of northern Shaanxi folk songs is not a single, but a variety of vocal techniques. This study focuses on its most special"高腔(Gao Qiang)"vocal technique, because it is the most distinctive and the most difficult. The reason for this phenomenon is that it is difficult to master the "高腔(Gao Qiang)" part of the northern Shaanxi folk songs, and there will be some psychological fear in teaching and performing. Common issues on this technique include voice breaking, and unpleasant sound while approaching"高腔(Gao Qiang)". But whether in teaching or performance with the northern Shaanxi folk songs, also be involved the"高腔(Gao Qiang)", Without "高腔(Gao Qiang)" , the artistic charm of northern Shaanxi folk songs will be greatly reduced. Researchers have come up with the method of singing this technique after long-term research, but this is still not enough, and further research is needed in the future, and hope this study can provide some enlightenment for learners.
Reference


