

A Study of Vocal Training with Performance

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1. Introduction

Now that the fever of Korean Wave led by K-Pop is getting hot, dance music occupies a very big proposition of the national popular music market. For this reason, singers are required to improve not only singing abilities but also performance skills and this isn't only limited to dance singers. Recently, even singers who singing ballad-tempo songs, show performances by moving their bodies on stage. Therefore, this paper aims to suggest an effective practice method to precede live performances of singers by conducting phased experiments about vocal training with performance and measuring and analyzing degrees of improvement of subjects.

2. Dance singer's training

It is a usual practice that even dance singers receive vocal training with performance before singing in public. The principle is the creation of a voice when air from the lung causes vibration of vocal cords by pressure. If a person sings running, the pressure of air frequently changes and it gives a stimulus to vocal chords due to the severe change of pressure. Therefore, it is not efficient to receive vocal training walking or running without regular training processes, and this might damage the inside of the neck in severe cases. Therefore, vocal training should precede an actual rehearsal for singing with choreography. Vocal training needs the processes of stretching, breathing, vocalization and singing, and after that, singers have a rehearsal to learn how to control a microphone and handle eyes on stage. For a more stable live performance, in this training process, dance singers do exercise like running or standing jump and practice singing, at the same time, on the premise that they received sufficient singing training.

3. Vocal Training with Performance Including Choreography of Running and Jumping Motions

Choreography includes various movements. Singers perform various movements on stage and practice singing walking or running to show more perfect live performances. Based on this fact, this study analyzed degrees of improvement in vocal training with performance by conducting phased experiments using choreography to do on stage rather than simple repeated movements like running or walking.

As an experimental song, 'PPA-PPA-PPA' by *Crayon Pop* which includes jumping motions, was selected out of the songs released in 2013, in consideration of the difficulty of choreography which the subjects could follow.

As subjects, physically healthy 15 students were chosen, regardless of gender. Their average age was 18 years old and their average singing career was 43 months. The experiment was conducted in a soundproof space. The records of videos and sound sources extracted from the phased experiments were compared and analyzed using the spectrum analyzer.

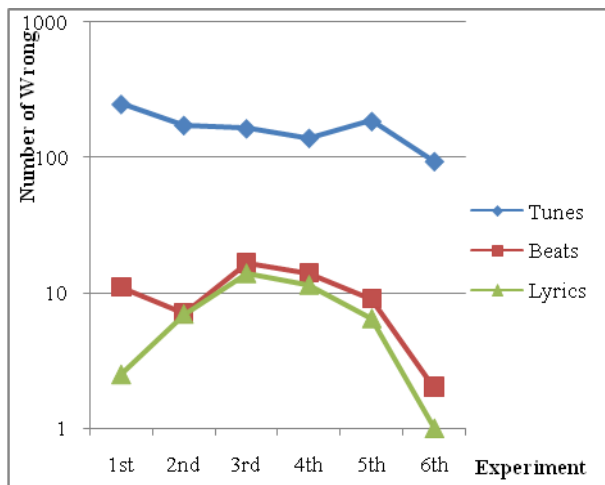
1st week	Subjects mastered a song for a day. Subjects sang a song without choreography. Subjects sang a song in full.
2nd Week	Subjects received vocal training without choreography for 30 minutes a day for a week three times. Subjects sang a song in full without choreography.
3rd to 6th Week	Subjects received vocal training with choreography for 30 minutes a day for a week three times. Subjects sang a song in full with choreography.

[Table 1] Experiment Process of Vocal Training with Jumping Performance

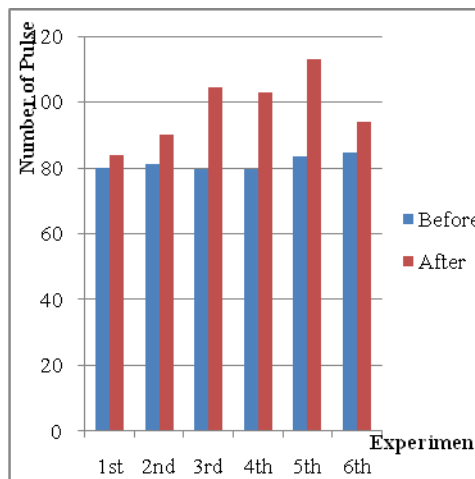
Prior to the experiments, a survey was conducted to see warming-up methods of the subjects before practice. As a result, they had different warming-up methods. In order to set the same conditions of the subjects for practice, all of them were asked to do the same stretching, breathing exercise and vocal exercise, and pulse rates were measured before and after the experiments to analyze the changes in physical exercise conditions.

4. Experiment Results and Analysis

The subjects' proficiencies were analyzed by comparing the rights and wrongs of tunes, beats and lyrics with the recorded sound sources and original songs. Also, the changes in physical exercise conditions of the subjects were analyzed by comparing the pulse rates measured before and after the experiments.



<Chart 1> Number of Changes in Tunes, Beats, Lyrics



<Chart 2> Number of Changes in Pulse

Compared to the first experiment, wrong tunes highly reduced in the second experiment, and in the third and fourth experiment, the reduction showed a slight difference with the result of the second experiment. Then in the fifth experiment, the number of wrong tunes remarkably increased. Lastly, in the sixth experiment, they greatly declined again.

Wrong beats slightly reduced in the second experiment, compared to the first experiment, and in the third experiment with choreography, the number of wrong beats doubled, compared to the second experiment. Then they displayed a steep decrease in the fourth, fifth and sixth experiment.

The number of wrong lyrics slightly reduced in the second experiment, compared to the first experiment, and in the third experiment, they greatly increased. However, in the fourth experiment, they slightly decreased again, and in the fifth experiment, they reduced by two times and even in the sixth experiment, they showed a great decline.

Though there were slight differences in pulse rates before the experiments, they were in a normal range. Also, there were slight differences in pulse rates before and after the first and second experiment, and starting the third experiment with choreography, there were big differences in pulse rates before and after the experiments. The fourth experiment showed a result similar to the third experiment, and the fifth experiment showed the biggest differences in pulse rates. In the sixth experiment that the accuracy of tunes, beats, lyrics and choreography highly improved, the differences in pulse rates before and after the experiment were similar to the result of the second experiment.

5. Conclusion

Why the number of wrong tunes increased in the fifth experiment, though they continued to decline from the first experiment to the fourth experiment, is the subjects' tunes became little unstable while their choreography improved, and they performed bigger and more accurate movements. But judging from that they highly reduced in the sixth experiment, it is likely that the subjects' performance and singing abilities improved more after the fifth experiment. In the first and second experiment that didn't require movements, the stability of beats and lyrics improved. But in the third experiment that the subjects started choreography, they lost breath, because of physical movements and jumping motions and it was hard for them to keep the beats accurately. Besides, doing choreography together, the subjects' concentration was distributed into performance and signing. But this improved by doing exercise, and judging from the changes in pulse rates, it seems they adjusted, as they completed the phased experiments.

These experiments were conducted under the limited conditions for a short period of time, and the subjects never received professional chorographical training before, and their personal lives were not controlled during the experiments. If the time and frequency of exercise are increased, it is anticipated that there would be a more progressive improvement.

6. References

- [1] Lisa Roma, 발성의 과학과 기법, 오현명 옮김 (서울: 음악예술사, 1973)
- [2] 고도흥, 언어기관의 해부와 생리 (서울: 학지사, 2013)
- [3] 남도현, 남도현 발성법 (서울: 코러스센터, 2011)