JOURNAL OF MULTIDISCIPLINARY SCIENCES AND INNOVATIONS
GERMAN INTERNATIONAL JOURNALS COMPANY
ISSN: 2751-4390
IMPACT FACTOR (RESEARCH BIB) : 9,08. Academic reserach index

PEDAGOGICAL FOUNDATIONS FOR SHAPING THE TECHNICAL APPARATUS OF BRASS MUSICIANS

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Abstract: The main factor of successful performance activity is the continuity in pedagogy of historical and methodological experience as the main components in the practice of musical performance art. The assessment of wind performance by modern researchers shows that in this musical and pedagogical area there are still many urgent problems that require their conceptual understanding. At present, in methodological works there are a number of questions revealing the features of the physiology of the vocal apparatus of a wind instrument student during training and in performance practice. The subject of analysis is the correct position of the larynx and throat during sound production, as well as the dependence of sound quality on the formation of these organs. Special attention, aimed at studying the physiological components in the instrumental and vocal type of production, made it possible to identify and explain a number of common pedagogical approaches, as well as to argue the validity of their application in the process of teaching wind instruments.
Keywords: wind instruments, vocal apparatus, performing apparatus, pedagogy, sound production, larynx

INTRODUCTION

Formation of the performing apparatus of a brass instrument player, a holistic and interconnected picture of functioning, where ambiguity in the idea of the work of any component prevents the effective and high-quality solution of educational and creative tasks. A practically unstudied problem area remains the scientific understanding of the structure and shape of the oral cavity, larynx and throat of a brass instrument player, the functioning of these organs in the process of extracting sound on instruments in the context of music pedagogy. In the designated problem, the historically accumulated experience of performing technique allows us to create a comprehensive system of scientific and pedagogical works and methods on music pedagogy in this field of knowledge. At the end of the twentieth century, music and pedagogical activity develops taking into account scientific achievements in the field of physics, acoustics, anatomy and psychophysiology. The scientific approach in the basis of training on wind instruments is concentrated in the search for patterns of use of resources of the human body and allows to turn to the achievements accumulated in physiology. In this regard, at the end of the 19th century the interrelation of wind and vocal performing arts was noticed. First of all, this is connected with the amateur level of performance on wind instruments, which professionally formed later than vocal art, did not have intensive development as a basis and was focused on practical mastering of skills and oral tradition of craftsmen.

MATERIALS AND METHODS

Despite the fact that the voice is a natural ability given to a person by nature, and a wind musical instrument is a mechanical invention, an analogy can be noted in the formation of sound. The vocal apparatus of a vocalist consists of the respiratory system, the larynx with vocal cords and resonators, and the speech apparatus. A wind instrument is an interconnected acoustic system: the oscillatory process in the musician's respiratory tract (respiratory apparatus, vocal section,

articulatory section), embouchure (lips and facial muscles) and the oscillatory process in the air column of the instrument. In accordance with this concept, the distinctive features of the performing apparatus of a student wind instrument player are the fingers holding the instrument and the embouchure, and the common features are breathing and the resonating apparatus. From this position, the difference in sound production is the presence of a wind instrument. It is considered as a direct extension of the performer's body, transforming the air stream into sounds with the help of the embouchure and mouthpiece. It should also be noted that there is an analogy in the activity of the vocal apparatus of a student vocalist and a student wind instrument player. However, unlike a vocalist, whose voice is produced directly through an open mouth, a wind instrument player still has to adapt to the mouthpiece and instrument, taking into account the corresponding position of the embouchure muscles and fingering.

RESULTS AND DISCUSSION

The performing apparatus of a wind player, as well as a vocalist, includes the larynx as the main physiological cavity for resonation. The larynx is the place where the main qualities of the future sound originate, namely: precise pitch, sound strength, initial timbre and vibrato. But in scientific and pedagogical works regarding the position of the larynx, vocalists have developed methodological recommendations, and for performers on wind instruments this process is still little studied. However, the analogy in the functioning of these organs allows us to note that in the process of training a wind player teacher can use the same methodological concepts as a vocalist, and the pedagogical principles regarding the correct position of the larynx are similar. One of the first wind players to reveal the problem of the correct position of the larynx in his methodological works was Yu. A. Usov [1, 2]. The author claims that the quality of the sound of wind instruments largely depends on the correct functioning of the resonators of the performing apparatus of the wind player. "The main resonator is the larynx. During the performance it should be in an expanded state, reminiscent of its shape at the moment of yawning. The oral cavity is also an active resonator. The expanded larynx and the rounded oral cavity together create the necessary resonating dome, which has an important effect on the fullness, timbre and roundness of the sound. It should be remembered that the control of sound production when playing the trumpet is the control of not only breathing, lips and tongue, but also the muscles of the larynx and oral cavity" [1, p. 65]. This concept is consonant with the methodological conclusions of L. B. Dmitriev on the functioning of the vocal apparatus in the vocal-pedagogical aspect. The author of the vocal technique claims that an obligatory condition of the technique of an opera singer is the opening of the larynx as a result of the expansion of the lower part of the pharynx. "Practice has shown that the sensation of a free, wide throat is necessary and accompanies good singing" [3, p. 271]. In scientific and pedagogical works on voice formation and the singer's performing apparatus, the theory of the throat functioning according to the principle of a horn loudspeaker, which radiates sound into space, is quite common. In "Fundamentals of Vocal Methodology" by L. B. Dmitriev, it sounds like this: "The human vocal tract is a kind of horn: above the source of vibrations - the folds - there is a tube open to the external environment. Through this horn tube, the sound generated in the glottis reaches the oral opening and from here it spreads into the external space" [3, p. 63]. Comparing the design of the loudspeaker with the functioning of all parts of the vocal apparatus during singing, we note the similarity in the basis of their construction. The schematic description of the vocal apparatus of a vocalist is similar to certain technical sound devices. In particular, the anatomical structure and functioning of these human organs is very reminiscent of a horn loudspeaker. The physiological functioning of the larynx and the entire oropharyngeal canal during singing is similar to this technical device. Thus, a so-called pre-horn chamber is created from the larynx cavity, in which some resistance is observed, similar to that formed in the area of the pre-horn chamber of a technical device.

The same fact is noted in the scientific works of wind art methodologists. Thus, Professor V. N. Apatsky writes: “The entire acoustic system of a wind instrument consists of closely interconnected elements. The effect of the resonators of the musician’s sound apparatus on the

sound of a wind instrument can be explained by the pre-horn box. If a box is installed in front of the horn, the latter, introducing additional acoustic resistance, will significantly increase the efficiency of its operation. Similarly, correctly tuned resonators of the sound-generating apparatus create additional acoustic resistance, due to which the efficiency of sound extraction from a wind instrument is significantly increased" [4, p. 127]. Thus, it becomes important to note the fact that in the case of sound extraction during singing and when performing on wind instruments, an analogy should be noted. The larynx in both cases serves as an additional resonator, increasing the efficiency and quality of the extracted sound. In the pedagogical aspect, the conducted analysis allows us to say that the same methodological approach should be applied to the training of brass band musicians to improve the educational process. Vocal teachers in their recommendations designate the technique that forms the correct sound formation in different ways, for example: "sing on a yawn", "under the dome", "vocal position" [3]. Scientific research has shown that a correctly found position in the larynx creates certain acoustic phenomena, which facilitates the work of the vocal muscles and makes it possible to fully demonstrate all the vocal qualities of the voice. This methodological concept also applies to performers on brass instruments. Here, music pedagogy, as in many other similar cases, widely uses metaphors, parallels, comparisons. This methodical installation, recommending to play "on a yawn", suggests "thinking about a yawn" during the game, which helps to lower the larynx, thereby increasing the cavity for resonance, creating the effect of a pre-horn box. The teacher should concentrate his attention on the formation by the student of those correct internal playing sensations that help to tune the resonators and control their work. For both the singing method and the method of playing a wind instrument, this technology in teaching the formation of sound helps to obtain the best quality sound, free sounding of the instrument with a beautiful timbre coloring of the sound.

CONCLUSION

Comparing the activity of the vocal apparatus of a student vocalist and a student wind instrument player, we can say that the difference is the presence of a wind instrument as an extension of the performer's body, embodying the sound. It is considered as a kind of acoustic transducer that transforms the air flow into sound using a mouthpiece and a specific wind instrument. Understanding the physiological processes proves the similarity of the work of the organs of the performing apparatus of vocalists and wind instrument players. Systematization of theoretical research materials enriches the musical and educational environment with new pedagogical developments aimed at adjusting the content, forms and methods of professional training of a future brass band musician and developing performing skills. Achievement in educating a large generation of talented instrumentalists and teachers, as well as training highly professional, competent and competitive performers on wind instruments in modern conditions of musical and pedagogical activity are priority areas in the activities of music pedagogy. Further search for ways to implement new pedagogical concepts in the education of performers on wind instruments is a relevant area in music pedagogy, and their scientific, theoretical and practical understanding is dictated by the need to create a modern comprehensive methodology based on a systems approach.

REFERENCES

1. 1. Usov Yu. Methods of Teaching Trumpet Playing. Moscow: Muzyka, 2014. 216 p.
2. 2. Aminova, Z. P. (2024). VAJNOST ISPOLZOVANIYA INTERAKTIVNYX METODOV NA ZANYaTIYaX PO RUSSKOMU YAZYK.Academic research in educational sciences, 5(3), 29-32.
3. 3. Turdalieva, D. S. (2021). Primenenie zykovykh vozmojnostey.Bulletin of Science and Practice, 7(4), 508-511.
4. 4. Khaitov, J., Khakberdiev, K., & Kamilova, A. (2022). MUNG BEANS ARE A SOURCE OF PROTEIN AND A HIGH ENERGY SOURCE.International Bulletin of Medical Sciences and Clinical Research, 2(12), 61-63.

5. 5. Inoyatova, Z. Kh., Po'Latova, G. N., & Khojimurodova, D. (2022). Forming a scientific worldview in students during the educational process.Science and Education, 3(12), 795-800.
6. 6. Jamolova, M. (2022). Characteristics of Mythological Worlds and their Impact on Human Consciousness.Zien Journal of Social Sciences and Humanities, 7.
7. 7. Bisht, Y. S., Alzubaidi, L. H., Gulbakhor, U., Yuvaraj, S., Saravanan, T., Kumar, R. S., & Dari, S. S. (2024). Legal Framework for Energy Transition: Balancing Innovation and Regulation. In E3S Web of Conferences (Vol. 540, p. 13015). EDP Sciences.
8. 8. Gafurova, S. Sh., & Yusuphadjaeva, S. T. (2022). Trevojnye-phobic rasstroystva pri syndrome razdrajennogo kishechnika i effektivnost psychoterapii i psychopharmacoterapii. In Innovative research in science International scientific-online conference.
9. 9. Kendjayeva, G. (2020). ANALYSIS BEYOND THE SIMILARITY OF THE WORKS OF NEW ZEALAND WRITER KATHERINE MANSFIELD AND RUSSIAN DRAMATIST ANTON CHEKHOV.TSENTR NAUCHNYX PUBLIKATSIY (bukhdu. en), 10(9).
10. 10. Gafurov, B. Z. (2010). presentation phonostylistiki v uzbekskom yazykoznanii (na materiale fonovariantov imen sushchestvitelnyx).Journal of Modern Turkish Studies, 7(4), 68.
11. 11. Mamatkulov, B., Tolipova, G., Adilova, Z., & Nematov, A. (2023). PROBLEMY IMMUNOPROFILAKTIKI: FAKTORY VLIYANIE NA FORMIROVANIE OTNOSHENIya K IMMUNOPROFILAKTIKI.
12. 12. Saidakbarova, M. A. (2025). FISCAL POLICY IS A FACTOR IN STIMULATING ECONOMIC GROWTH AND ENSURING STABILITY.International Scientific Journal of Modern Scientific Research, 3(3), 64-71.
13. 13. Anvarovich, N. E. (2024). The Role of Information Technologies in the Innovative Development of Banks.ONLINE JOURNAL OF ECONOMICS AND INTERNATIONAL RELATIONS, 1(2), 27-32.
14. 14. Usov Yu. Methods of Teaching Wind Instruments Playing. Moscow: Muzyka, 2016. 224 p.
15. 15. Dmitriev L. B. Basics of Vocal Methodology. Moscow: Muzyka, 2018. 674 p.
16. 16. Apatsky V. N. Basics of Theory and Methodology of Wind Music Performance Art: Textbook. Kyiv: National Music Academy of Ukraine named after P. I. Tchaikovsky, 2016. 432 p.