Information Technology in the Development of Intonational Hearing of Musicians in the Process of Studying at a University

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ABSTRACT

The article proves the perspective of information technology in the development of intonation hearing - a significant component that determines the level of professional musical thinking. The meaning and essence of intonation hearing in the structure of musical hearing is determined. Objective reasons that impede the development of intonational hearing in musician students are highlighted. The purpose of this article: to justify the sequence of stages in the development of intonational hearing among musician students, to determine the areas of work and ways to use information technology for its development, to identify the most effective methods corresponding to each stage. The sequence and content of the stages were determined by the following logic: from the ability to determine the emotional tone of a work, through its re-intonation with the help of computer programs and applications to the interpretation of the emotionally imaginative content of the work. The results of the initial diagnosis, as well as the causes that impede the development of intonation hearing identified during the study, determined the choice of information technologies for the development of intonation hearing. To improve students' ability to re-intonation, computer applications Drum'n'bass, Dubstep, Electronic, Chordbot Lite, Walk Band and Garage Band were used, as well as methods of "modeling the artistic and creative process", "creating compositions". To develop the intonational hearing of Chinese students, the Smart technology and the Real piano program were used. The results of the final diagnosis allow us to conclude that the level of development of intonational hearing in students who participated in the study, based on the use of information technology, is increased. Students enriched the experience of communicating with musical art, deepened their understanding of musical intonation as a carrier of semantic content, activated the ability to re-intonation as a way of developing musical thinking. The use of information technologies, including computer applications and programs, takes the process of awareness of the emotional-semantic expressiveness of intonation to a new level, filling it with creative content. The obtained results prove the effectiveness of the developed stages, content and methods, as well as the prospects of using information technology in the development of the intonational hearing of musicians.

Keywords: *information technology, intonation hearing, reintonation, computer applications, computer programs*

1. INTRODUCTION

In modern reality, the intellectual progress and social development of a person takes place under the influence of information technology. Among the main tasks of modern musical pedagogy, the comprehensive development of musical-intonational hearing as part of the musician's intonational culture is put forward. One of the effective directions of the methodology for the development of intonational hearing of a musician is the use of information technology in music education.

The main approaches to the study and interpretation of the essence of intonation hearing were laid down in the works of B.V. Asafiev and V.V. Medushevsky. Considering the intonational method of comprehension of music, B.V. Asafiev substantiates the doctrine of the emotional-semantic nature of musical intonation and notes the relationship between intonation hearing and mentality [1, p. 222]. Intonation hearing, according to V.V. Medushevsky, is primarily aimed at recognizing the meaning of a musical work. The author notes that the perception of music is carried out from two sides: analytical and intonational-semantic. It is in connection with this that the ear for music should be analytic-perceptual and intonational at the same time. Their

interaction and equable development provides the level of professional musical thinking. So VV Medushevsky notes "In the concrete sound of music, the analytical organization is always built into the semantic" [7, p. 160]. Thus, it can be emphasized that the effectiveness of the musical educational process is characterized by the presence of consistency in the development of two sides of musical hearing: perceptual-analytical, associated with the comprehension of the high-altitude side of music and intonational-semantic, contributing to the awareness of musical intonation.

However, an analysis of the current situation in music education in Russia and China shows that the development of the analytical hearing responsible for recognizing the structure of musical fiber (the pitch of a melody, harmony, timbre, dynamics, texture, etc.) is more intensive compared to intonation hearing . This is partly due to a well-developed theoretical and methodological framework, and the traditions of music education in Russia. Thus, due to the purposeful development of perceptual-analytical hearing in musical disciplines (solfeggio, harmony, instrumental performance), the musician initially develops thinking with interval-sound constructions, and their comprehension occurs later. According to V.V. Medushevsky, this leads to the cultivation of the habit of musicians to think music only in the direction from sound to meaning, and even generally only by interval-sound combinations [7]. As a result, music loses a personally significant and value semantic meaning. In fact, the intonational-semantic essence of music fades into the background, because the ear is entirely aimed at recognizing and analyzing sound-altitude relationships. The performance of musicians with insufficiently developed intonational hearing can be characterized as "unemotional", "meaningless", "uninteresting". This type of performance in the audience does not cause an emotional response, feelings, thoughts. In fact, with this performance, a dialogue between the author and the recipient is not possible, since the artist himself did not enter into this dialogue.

The problem of intonation hearing development is also relevant for Chinese music education. Despite the high results in the development of the pitch component of musical hearing, which is explained by the specifics of the Chinese language, which has a "tone" nature. So D. Deutsch (psychologist at the University of California) has established a correlation between the level of development of musical high-pitch hearing and the tone system of spoken Chinese [2]. However, it is important to emphasize that the tone of the Chinese language is not a carrier of emotional information, but serves as a phonemic means that defines the meaning of the word. In general, a number of objective reasons can be identified that impede the development of intonational hearing of Chinese students. Among the main ones: difficulty in perceiving the works of Russian and Western European composers through independent comprehension of the deployment of a sound image, recreation and interpretation of the author's intention [10]; the dominance of virtuosity over the experienced emotionally meaningful performance; lack of

practice of mastering a musical work in the context of the theory of B.V. Asafiev about the emotional and semantic nature of intonation, and the logic of the development of a musical image [6].

2. STATEMENT OF THE PROBLEM

2.1. The intonation side in the development of musical hearing should become the leading one in musical education at the present stage. It is important not only to develop the ability of musicians to hear high-altitude combinations, but, above all, to develop the ability to understand their expressive meaning, as the basis of a spiritualized, meaningful performance of music.

2.2. Information technology can take the development of intonation hearing to a new level. Computer applications and simulators (Vocalist Lite, Magisto, Drum'n'bass, Dubstep, Electronic, etc.) based on the integration of various types of musical activity not only stimulate musical hearing, but also contribute to the development of musical thinking. Thanks to information technology, the understanding of the elements of a musical language occurs through the synthesis of auditory sensations and visual-graphic representations, which enhances the process of music perception, makes it more dynamic. Interactive creative tasks, using information technology, effectively affect musical memory, develop musical observation, imaginative emotional thinking, take the process of music education to a new level.

It is necessary to rethink the role of information technology in the development of intonational hearing. To the traditional approach of using information technology for the development of the high-altitude component of musical hearing (computer applications is absolute hearing), it is necessary to add technologies that develop the intonational component of hearing, as the ability to understand the laws of music, to identify the composer's intent, and as a result to its professional interpretation in its own performing practice.

3. RESEARCH QUESTIONS

3.1. The development of the intonational hearing of musicians in the process of studying at a university is possible on the basis of B.V. Asafiev, on the emotional-semantic specifics of musical intonation [1].

3.2. The effectiveness of the development process of intonational hearing in music students will depend on the implementation of the sequence of stages defined by the following logic: on the ability to determine the emotional tone of a work, through its re-intonation based on the use of information technology to understand the emotionally-figurative content of a musical work.

4. PURPOSE OF THE STUDY

To justify the sequence and determine the content of each stage in the development of intonational hearing among students of musicians, highlight the most effective computer applications, programs for its development.

5. RESEARCH METHODS

The methods used for this study are theoretical - analysis and generalization of the literature on the problem of the development of intonational hearing in musicians in the process of learning at a university; experimental - practical research work, empirical - analysis of artistic and practical activities, generalization, systematization and description of the results of experimental search work.

6. RESEARCH RESULTS

6.1. The test of this hypothesis was carried out on the basis of two groups of students studying at the Institute of Music and Art Education of the Ural State Pedagogical University, Yekaterinburg (RF) and at the Tonghua Pedagogical Institute, Tonghua (China).

Initial diagnostics of the development of intonational hearing of students of musical institutes included the perception of a musical program (the title of the work was not communicated) and the ability to adequately determine the main emotion of the work, generalize contrasting emotions and differentiate their shades was revealed. Students were asked in response through voice intonation to express empathy, conveying meaningful content revealed in the work of emotion. The theoretical basis of this diagnostic task was the importance of the formation of students' "intonation dictionary" developed in musical culture.

The creative task was aimed at revealing the ability of students to re-intonate, that is, to embody their own experience that arose when the work was perceived in a different modality (variants of embodiment of the revealed emotion in vocal, instrumental improvisation, and also by means of other types of art are possible). The basis for the development of the diagnostic task was the theory of B.V. Asafiev on the emotional-semantic nature of intonation, justifying the importance of educating the skill of intonation performance, based on the experience of the expressive value of musical intonation.

For the identification of the ability to understand the emotional-figurative content of the work, students were asked to offer their name to the musical work that sounded at the beginning of the diagnostic study and answer the questions: what (who) was the music talking about? What did the composer want to convey with his music? What events in life give rise to such experiences?

As a result of diagnostics among university students (Ural State Pedagogical University, Yekaterinburg, Tonghua Pedagogical University, China), the following data were obtained:

A higher level of development of intonation hearing was revealed among students studying at the Institute of Music and Art Education of Ural State Pedagogical University. Recipients not only determined the main emotional tone of the work, highlighted the dynamics of the development of emotional content, compared episodes contrasting in mood. The discussion of the questions posed was detailed, meaningful, the proposed names are adequate to the perceived program music. However, while performing a creative task, auditory attention was completely switched to the accuracy of pitch-altering intonation to the detriment of emotional-semantic expressiveness, which confirms the evidence revealed in the theoretical analysis of the literature on the prevalence in the modern musical educational practice of the developed analytical side of intonational hearing in comparison with intonational-semantic.

Chinese students coped brilliantly with the creative task: they performed intonationally the main melody on the instrument and demonstrated a good level of development of the perceptual-analytical side of intonation hearing. However, tasks requiring manifestations of emotional expressiveness in the intonation of the voice, when pronouncing the selected emotional characteristics, caused difficulties. It was difficult for students to build a relationship between experiences and methods of their embodiment in expressive intonation. In determining the emotional tone of the work and revealing the development of a musical image, expressed in the contrast of emotions, their saturation and decline, the students were restrained, and their answers were monosyllabic. The results obtained indicate that the intonation-semantic side of hearing is not sufficiently developed, it is quite difficult for Chinese students to capture the logic of the formation of a musical image in time and space [6], intonationally meaningful performance on the basis of awareness of the emotional-semantic meaning of musical intonation causes difficulties.

These results served as the basis for the development of the content of the stages of development of intonational hearing of music students, their sequence, the definition of information technology, computer applications and methods according to the selected stages.

6.2. It is known that the first associations arising from the identification of the emotional tone of a work already allow the perceiver to predict the artistic idea of the work [8]. Therefore, the initial task in perception is to penetrate into the emotional atmosphere of a work. The alignment of emotions and feelings expressed in music gives rise to empathy in the audience as a starting point, the initial stage leading to an understanding of the author's intention. The next stage in the development of intonational hearing is the awareness of the perceived emotional tone of the work in all its diversity, contrast and development. Each type of art has its own specifics of embodiment of the author's intention. In music, this is primarily intonation. It is in it that the feeling and thought are in unity. Therefore, the central stage in the development of intonational hearing, in our opinion, is the development of students' intonational vocabulary of

music, awareness of the intonational nature of musical art. In music, defining the emotional tone of a work and intonation as a carrier of semantic content, it is possible to come to an understanding of the main idea, the intention of the composer, which is the next stage in the development of intonational hearing. An indicator of understanding the generalized concept of a work is the finding and awareness of the personal meaning of a musical work. "It is a high degree of generalization of artistic emotions that allows each listener to find their personal meaning of the work. To realize your feeling means not just to perceive it as an experience, but to relate it to the object or person that causes it "[9, p.233].

To implement the sequence of the identified stages in the development of intonation hearing, information technologies were selected, computer programs and applications were identified taking into account the results obtained during the initial diagnosis. So, to develop students' ability to reintonation, the method of modeling the artistic and creative process was used. Based on applications (Drum'n'bass, Dubstep, Electronic, etc.) containing professional studio samples, students created and recorded their own improvisations and composed original compositions in order to embody the emotions, feelings that arose in the perception of the work. Students went through all stages of the creative process: from finding an idea to creating the final creative product - a musical work. In order to develop the accuracy of vocal intonation, we used the Real Piano application [4], which provides instrumental sound support for playing a melody with voice, Smart [3] technology and the Vocalist Lite [5] application that clearly demonstrate intonational, acoustic matches or differences between voice performance and reference sound.

For Chinese students, the development of the ability to comprehend the emotional-semantic expressiveness of musical intonation began with an introduction to speech methods of intonation. Using the method of creating an artistic context, students were offered to perceive the works of different types of European art (poetry, music, painting) similar in emotional tone. The result of this multi-artistic perception was a video edited by students using the programs Photo Editor Pro, Magisto, Movie maker and voiced by them. During the implementation of the method, the creation of an artistic context gradually shifted from reliance on associations from the field of painting to the expressive intonation of poetry. To develop students' "intonation dictionary" [1], a method of assimilating the sound of music was used, aimed at feeling in the emotional-semantic field of musical intonation.

Using the Chordbot Lite application, students created musical compositions oranging. This computer application provides an opportunity to prove themselves in an orangery and for students who do not know the technique of playing the piano. Thanks to the Walk Band and Garage Band apps, students orchestrated and recorded their own adaptations.

For the development of intonational hearing as an instrument of meaningful perception, the method of awareness of personal meaning was used. Students turned to life experience and established a relationship between the emotional content of the work and their own experiences. Particular attention in working with Chinese students was given to expanding the artistic and aesthetic experience through the inclusion of European music in the content of the program. For the development of intonational hearing, it was important to form ideas among students about the logic of development of musical thought in movement, about musical events and images that are dynamically developing in time and space.

Implementation of the developed stages and methods for the development of intonation hearing occurred as part of students studying the discipline of solfeggio. After which the final diagnosis was carried out. The results obtained in the group of students of Ural State Pedagogical University showed significant improvements in the development of the ability to reintonation. Students actively used different options for embodying the emotional tone of the work based on the re-intonation of emotional-semantic intonation. However, in quantitative terms, instrumental reintonation variants prevailed. A group of Chinese students also showed a trend in the development of the intonational-semantic side of musical hearing. In determining the emotional tone of the work, students highlighted contrasting emotions, sought to compare them and differentiate emotional shades. The level of performing creative tasks increased, students were less interested in the technical side of re-intonation, paid more attention to the relationship of the emotional tone of the work and its embodiment in intonation.

6.3. The results of the final diagnosis allow us to conclude that the level of development of intonational hearing in students participating in the study is enriched: the experience of communicating with European musical art has been enriched, knowledge of the intonation dictionary has deepened, ideas about musical intonation as a carrier of semantic content have expanded, and the importance of intonation for meaningful expressive performance has expanded.

7. CONCLUSION

Despite the positive trends in the development of intonational hearing of students, the analysis of the implementation of diagnostic tasks and a comparison of the results revealed some problems in the development of intonation hearing. As a rule, students do not always reveal the relationship between the substantive and technical aspects of a musical work; the priority of theoretical analysis in comparison with figurative-informative is observed. The significance of the formation of the basics of musical thinking among students through the development of intonational hearing as the ability to understand the artistic intent of a work becomes obvious.

Active introduction of computer programs and applications into this process, based on the integration of various types of musical activity, activates the development of the intonational component of musical hearing. The search for effective information technologies is the prospect of further research in the direction of the development of intonational hearing in music students.

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