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The Use of Information and Communication Technologies in Self-Training of Students of the Pop and Jazz Direction of Training

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ABSTRACT
The article discusses the possibilities of using information and communication technologies (ICTs) in the organization of self-training of students in the system of higher vocal (pop and jazz) education. The analysis of the experience of musical teachers of higher education shows that at present, teachers of higher education use ICTs to varying degrees in teaching students. The current system of musical instrumental and especially vocal education requires modernization. When using ICTs, real conditions are created for the formation of self-training skills of a student vocalist, for the development of creative and critical artistic thinking, for tracking and evaluating the results of musical performance. The authors describe the possibility of introducing e-learning content and e-training into the educational process as a means of organizing self-study of vocalists. This created an electronic textbook, with the help of which student vocalists learn a new activity - "music design", learn the skills of the professional soundman, autoarranger, acquire skills of improvisation and composition. A MIDI keyboard gives the student the opportunity to become not only a participant in ensemble singing, but also a performing instrumentalist. The use of ICTs in the educational process enables vocalists to navigate the world of sound engineering, to master many sound effects of music in the style of "rap", "rock", "house", "thrash", "hip-hop" and the like. Thus, it can be concluded that electronic computer technologies have become an integral part of the music industry and music pedagogy, contributing to the overall information and music performance culture of university students.
Keywords: *self-training of pop and jazz vocalists, digital sound recording, music design*

1. INTRODUCTION

1.1. Modern music education shows an increasing interest in computer technologies, multimedia, and digital recording. High-quality sound of music, digital studio recording, video recording, modern computer processing and arrangement of music, high-quality music records - all this is now a prerequisite for the fulfillment of a professional musician.

If in the 20th century modern information and communication technologies were just beginning to be introduced into music education, in the 21st century they are actively and widely used in all types of musical endeavor. Today, the modern music industry cannot exist without information and communication technologies. Under information and communication technologies (ICTs), we understand computer technologies, multimedia, technical training tools, electronic educational resources, modern digital and mobile technologies, and the Internet. ICTs are used at all levels of education. In higher education, ICTs is effectively used in the organization of self-training of students. In music and pedagogical institutes, vocal students actively use ICTs in their independent activities. Modern computer technologies help to record, edit and store the results of students' work (pop and jazz vocalists). With the help of ICTs, students have great opportunities to broadcast, replicate and distribute pop and jazz art.

1.2 Music and computer technologies is a relatively young field of performance, the emergence of which was promoted by the technological revolution. The development of computer technology at the end of the 20th century consolidated the role of the personal computer as the leading creative and production tool for numerous specialties and professions. This trend was particularly relevant for musical endeavor.

One of the modern innovative ideas is the idea of computerization of music education, which shows that music does not stand apart from the achievements of science. The problem of computerization of music education was studied by I. V. Zabolotskaya [2], I. M. Krasilnikov [3]. The questions of computer use in vocal education were covered in the researches of O. N. Piksayeva [6], O. I. Polyakova [7]. V. P. Morozov used the computer as a tool for research work, for spectral

analysis of acoustic characteristics of the singer's voice. [5]

1.3. The most exciting activity of students (pop and jazz vocalists) is playing music on electronic musical instruments. Such computer programs as MIDI sequencers allow each computer to sound an entire orchestra of timbres: from percussive noise to the timbres of an organ or violin. Therefore, vocal students can use the sound of all these instruments to create audio recordings or perform live music. Such programs involve the emergence of new activities such as instrumentation and arrangement elements.

A new type of activity for pop vocalists is "music design". The so-called computer design programs unleash improvisation and composition at the "Class of solo pop singing". A MIDI keyboard allows students to enter audio information into the computer easily. This device gives vocal students the opportunity to become not only a participant in ensemble singing, but also a performing instrumentalist. Consequently, students acquire elements of song culture and the culture of playing an instrument. Autoarranger programs have a whole set of musical instruments that perform a melody created by students in a particular musical style.

In modern music education, ICTs are widely used in vocal, instrumental, choreographic, sound engineering, and theatre. A computer equipped with some additional equipment (i.e. a sound card, speakers, microphone, an electronic MIDI keyboard connected to the computer) if exploited by a competent user-student can turn into a recording studio, music library, publishing system, a simulator for the performer, information center, library.

2. RESEARCH TASKS

2.1. Information and communication technologies contribute to the formation of students' self-training skills (pop and jazz vocalists), the development of creative and critical artistic thinking, for tracking and evaluating the results of musical performance.

2.2. To develop diagnostic tools to identify the level of formation of independent work skills of the University students (pop and jazz vocalists).

2.3. To identify the effectiveness of using ICT and electronic textbooks for independent work of student vocalists.

3. RESEARCH QUESTIONS

In this study, we try to answer the following questions, which are based on the content of its hypothesis:

3.1. What is the possibility of creative development and formation of independent work skills of vocal students when using ICTs in their self-training?

3.2. How will the effectiveness of the process of forming the skills self-training of vocal students increase with the use of ICTs, electronic textbooks and video lessons?

4. PURPOSE OF RESEARCH

The purpose of this research is to determine the most effective methods of using ICT in the independent work of vocal students.

5. METHODS OF RESEARCH

The methods used for this research are analysis and generalization of psychological and pedagogical, musical and pedagogical literature on the use of ICTs in the independent work of vocal students; systematization, analysis of the results of experimental research, analysis and generalization of pedagogical experience.

6. RESEARCH RESULT

6.1. To test this hypothesis, the students at the Institute of music and art education of Ural State Pedagogical University, training in the profile "Additional education" (pop and jazz vocals), were taken.

The initial diagnostics of formation of independent work skills with the vocal students using ICTs included such methods as a survey, a questionnaire; a creative task, during which the ability to work independently with the help of an electronic textbook was determined. When developing diagnostic tasks, we relied on the following theoretical position: electronic musical creativity, according to I. M. Krasilnikov [3], is the main activity of students of musical art.

6.2. Diagnostic tools (criteria and indicators) were developed to identify the level of formation of self-training skills of the students (pop and jazz vocalists) of the University. The level of formation of skills of self-training of vocal students was assessed by the following criteria: 1) readiness for independent musical activity, 2) independent finding of means for embodying the artistic image of a vocal work, 3) readiness to use ICTs in independent work.

The diagnostics made it possible to formulate the following results obtained from vocal students of the University: not all the students are ready to work independently, to perform tasks using ICTs. Some students need the advice of a vocal teacher and the help of their groupmates. There were students who found it difficult to find the means to embody the artistic image of a vocal work on their own.

The highest level of formation of students' self-training skills (pop and jazz vocalists) was found with 10% of the students. The medium level of formation of independent work skills of students (pop and jazz vocalists) was found with 50 %. A low level was found with 40 % of the student vocalists.

The results obtained made it possible to develop electronic individual memos, or algorithms for vocal students on solo pop singing using various music and computer programs (music designers, autoarrangers, MIDI sequencers, audio editors, music editors, etc.), technical

training tools, tools for digital sound recording. Video tutorials, including tasks and exercises for the formation of independent work skills of the students were developed and posted on the You Tube Channel; repertoire collections on solo pop singing and vocal ensemble for vocal students, including audio and video library, were compiled.

The content components of independent activity of vocal students in higher education were developed and justified by various characteristics: by the dominant method of vocal and sensory self-control in the process of developing vocal skills; by types of activity; by types of artistic endeavor; by forms of work; by the didactic goal.

A step-by-step method of forming self-training skills for vocal students at the University using ICTs was developed. The implementation of the developed methodology made up the content of the forming stage of the experimental search work.

To form the skills of self-training of vocal students, we created an electronic textbook, which is a special device, or software used in the educational process and replacing a traditional paper textbook.

We also made up an electronic textbook for self-study of student vocalists, which is a set of programs on electronic carriers (disks, memory sticks) that allow students to demonstrate not only the text, but also the multimedia material containing interactive blocks of knowledge testing.

The purpose of the electronic textbook was to organize independent work of the vocal students of the University.

The objectives of the electronic textbook are the following: formation of skills of independent musical and performing activity; obtaining knowledge about the singing voice and its preservation, about musical styles and genres of pop music; consolidation of vocal skills and skills obtained in a lesson with a teacher; using different methods of vocal and sensory self-control in the process of independent work on the principle of feedback; formation of musical taste.

The material in the electronic textbook for vocal students is presented consistently from simple to complex. The electronic textbook consists of several modules: training, exercising, and educational.

In their self-training, the vocal students used the electronic textbook, ICTs, and also used a digital recording method. The digital voice recording method provides high quality sound in the digital stream and complete absence of distortion. A digital stream is a sequence of audio information in the digital form using a digital signal processor focused on the implementation of high-speed transformations of audio signals [1, p.70]. The vocal students recorded their voices using a microphone. A microphone is an electro-acoustic transducer that responds to sound waves and generates equivalent electrical signals [1, p. 63].

6.3. The results of the final diagnosis allow us to conclude that the level of formation of self-training skills of the vocal students of the University has increased. The highest level of formation of students' independent work skills (pop and jazz vocalists) was found with 40% of students. The medium level of formation of independent work skills of students (pop and jazz vocalists) was found with 55 %. A low level was found with 5 % of student vocalists.

Thus, the effectiveness of using ICTs and an electronic textbook for independent work of student vocalists is revealed.

7. CONCLUSION

Information and communication technologies have become an integral part of vocal pedagogy and are used by vocal students in all types of artistic endeavor: vocal, instrumental, choreographic, acting, and sound engineering.

At the lessons of solo pop and jazz singing at the University, within self-training of vocal students music and computer technologies (music and computer programs, autoarrangers, music designers, music editors, etc.), electronic musical instruments (modern digital synthesizers, electric pianos, MIDI keyboard), technical teaching aids (headphones, microphones, acoustics, etc.), mobile devices (phones, smartphones, tablets), and electronic educational resources of the Internet are used.

The necessity of using ICTs, which provide new opportunities for organizing independent work of students in the process of mastering the art of pop and jazz singing, is confirmed.

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