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Digital Keyboard Synthesizer and its Application in the Creative Work of a Music Teacher. Principles of Building Advanced Training Courses for a Teacher-Musician in the System of Additional Education for Children

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***Abstract*:** *The article discusses the principles of building advanced training courses, the implementation of which ensures the level-based nature of the training of a teacher-musician in the system of additional education for children. Programs of three levels of mastering are proposed: from the basic mastery of digital keyboard synthesizers to the systematic use of the resources of the information educational environment. The teaching methodology implements a didactic cycle, including diagnostics – individual trajectory – collaborative activity in the environment – reflection and digital portfolio. The implementation of this methodology forms the subject competencies of a musician teacher in the field of mastering information and music computer technologies, as well as metasubject qualities – readiness for innovation, networking and continuous self–education*

Keywords: *Advanced Training Courses, Digital Keyboard Synthesizer, Music Teacher, Additional Education For Children, Music Computer Technologies, Electronic Musical Instruments, Information Educational Environment*

1. Introduction

The modernization of the system of additional education for children (hereinafter referred to as the AEC) requires a revision of the principles of building advanced training courses and the development of a new methodology. It is based on a system of principles that meets, on the one hand, the trends of modernization of the AED (enshrined in the Professional Standard), on the other — the specifics of the musical and pedagogical activity of a musician teacher in an information and educational environment (hereinafter referred to as IOS).

Analysis of practice and research (I. B. Gorbunova, H. Hiner, Ivanova E. O., A. Kameris, T. B., Osmolovskaya I. M., Pavlova, N. N. Petrova K. Y. Plotnikov, etc. — see in [3; 5; 7-8; 9-10; 11-12]) shows that productive preparation for work in an information technology center requires a shift in emphasis from "knowledge transfer" to an activity-based and personality-developing component, which is also vividly reflected in a number of the author's works (see. for example, in articles [2-3]). At the same time, advanced training courses become an open educational system, where the student is a co—author of their professional growth, and networking ensures continuity of self-development. In these provisions, we also rely on the works of L. N. Buylova and S. G. Vershlovsky [1; 15]. However, for a AEC teacher-musician, these provisions need to be specified taking into account the specifics of his activity, namely: the development of specialized musical and

pedagogical tools, rethinking practice-orientation through solving specific tasks, an emphasis on independent work and networking within the professional community.

2. The Principles of Building Advanced Training Courses Aimed at Mastering the Digital Keyboard Synthesizer and its Application in the Creative Work of a Music Teacher in the System if Additional Education for Children

The principles of building advanced training courses aimed at mastering the digital keyboard synthesizer and its application in the creative work of a music teacher in the system of additional education for children the training of AEC music teachers should be considered as a continuous process of self-development, embedded in practical activities and supported by a specially created environment. The methodology is based on three principles linking the development of competencies with professional tasks.

1. The principle of practice-oriented and contextual relevance of the content.

The content is built around solving specific professional tasks of a AEC music teacher based on the achievements of modern music pedagogy and digital technologies in education. The implementation is provided by: technological training (step-by—step formulation of tasks), reflexive practices, flexibility of programs (taking into account the requests of listeners, mastering music computer technologies — MCT [5; 7-8], creation of IOS elements) and interdisciplinary integration. In this regard, transdisciplinary and synergetic approaches are actively developing in the implementation of interdisciplinary principles and approaches at various stages and in different directions of the modern music education system [4; 6], including the fields of sound design, musical and sound-timbral programming and developments aimed at preserving and broadcasting highly artistic samples of music from the peoples of the world (see, for example, in [5; 7]).

2. The principle of priority of independent learning activities.

Independent work is a key condition for the formation of competencies. It promotes the development of sustainable motivation, cognitive activity, cognitive abilities and the research position of a musician teacher.

3. The principle of networking and professional collaboration.

The courses are designed as an open system of professional and resource connections. Interaction is carried out with institutions implementing the system of additional professional education (hereinafter referred to as vocational training) and social partners, which makes it possible to overcome the isolation of the course and integrate it into a broad professional context.

The content of additional professional programs is designed in accordance with these principles and includes the development of information and communication technologies (hereinafter referred to as ICT), music and computer technologies (hereinafter referred to as ICT), the formation of skills for their implementation in teaching practice and the creation of elements of personal information technology.

3. Network interaction of music teachers

Networking includes sharing experiences and expanding the resource base through partnerships with other organizations. Such a partnership can be expressed in providing a material and technical base, attracting specialists to conduct classes and master classes. This type of interaction allows you to overcome the isolation of the course, bringing it into a broader professional system.

It should be noted that one of the important tools for implementing the principle of networking is the technology of mutual learning. The main objective of this technology is to overcome the professional isolation of students, as well as to create a stable professional community for the exchange of experience.

According to Russian scientists, one of the important forms of interaction in professional development is the principle of mutual influence and mutual learning. This principle is based on a system of connections between the subjects of the educational process and is aimed at readiness for professional self-development, changing the subject's perception of himself as a specialist and understanding the existing professional experience.

The use of mutual learning technology is becoming especially relevant in modern information technology. It is in the conditions of IOS that the course student can promptly contact a colleague to discuss a specific topic, clarify complex issues, as well as organize independent work. Thus, the technology of mutual learning organically complements and supports the implementation of the principle of networking at all stages of the development of professional development programs. We also note the special role played by the process of mastering the capabilities of modern digital musical instruments and electronic musical instruments by music teachers in the system of additional professional education. A modern digital musical instrument is truly an invaluable gift in the hands of a creative teacher, an innovative teacher, who allows the teacher and his students to come into contact with the limitless possibilities of the world of music and pushes the boundaries of the audience, classroom, and the possibilities of concert halls (see for more details in [2].

4. Conclusion

Thus, the implementation of the presented principles acts as an organizing guideline for building professional development programs for teachers and musicians of the DOD system. These principles are of a layered nature: from the formation of basic skills in working with digital tools to the systematic use of IOS as a resource for professional development. This ensures the integrity and continuity in the development of the information component of the professional competence of a musician teacher.

The proposed methodology forms a didactic cycle: from diagnosing the needs of the listener and building an individual trajectory through collaborative project activities in IOS to reflection and fixation of results in a digital portfolio. The implementation of programs on this basis forms not only subject competencies in the field of ICT and ICT, but also metaprofessional qualities.: willingness to innovate, network, and continuous self-education in an information technology environment

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Prof. Dr. Gorbunova is a Chairperson of the annual International Research and Practical Conference Contemporary Musical Education: Creative Work, Research, Technology, held since 2002; Chairperson of the annual International Research and Practical Conference Music Computer Technologies in the System of Contemporary Education, held since 2007; International Research Conference, held since 2017;); Chairperson of the annual International Research Conference Interdisciplinary East-West Discourse: The 21st Century. Creative Work. Research. Technology. Education, held since 2020 (Baku, Azerbaijan – St. Petersburg, Russia).

Dr. Gorbunova is a member of the Jury of national and international competitions of musical creative works, including Electronic Palette (Saint-Petersburg), Music and Electronics (Moscow), Music of the 21st Century (Moscow / Saint-Petersburg), International Festivals and Competitions Musical Electronics and Multimedia (Moscow / St.-Petersburg), CLARINE of the 21st Century (St. Petersburg), The World of Art without Borders (Saint-Petersburg, Russia - Szeged, Hungary), Bridge of Friendship (Dortmund, Germany), All-Russian Competition of Electroacoustic Music DEMO (St. Petersburg, Russia).

Under the guidance of the professor, Dr. Gorbunova developed the first-ever bachelor's degree programs in *Music Computer Technologies* (2004) and *Information Technology in Music and Sound Design* (2023), as well as Master's degree programs in *Music Computer Technologies in Education* (2006) and *Digital Technology in Music and Sound Design* (2022).

Professor Dr. Gorbunova directs a number of doctoral and postdoctoral studies (more than 30) and lectures on music computer technology and information technology in music. She directs research in various fields, including: Theory and history of culture, Musical art, Information systems and processes, Theory and Methodology of vocational education, Mathematical modeling in music, Numerical methods and software systems, Theory and methods of teaching and educational work (in music, computer science, natural sciences). The research results of Prof. Gorbunova has published more than 550 peer-reviewed publications, including more than 50 books and more than 300 articles in various scientific journals.

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MCT in general musical education (as one of the means of education);

MCT as a means of rehabilitation of people with disabilities;

MCT as the new direction in preparation of specialists of humanitarian and technological profile;

MCT in the field of digital arts;

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monograph Musical Instruments of the Digital Age (2023 in co-authorship) and many others, dedicated to the topic of "Information Technology in Music" and "The Information Educational Environment of Music Teachers" (she has more than 100 research publications). Her articles have been published in various scientific journals and editions.

Klara Davletova is the author and artistic director of the regional competition of beginner performers on electronic musical instruments Baby EMI (St. Petersburg, Russia), the All-Russian competition of electroacoustic music for gifted children DEMO (St. Petersburg, Russia). Klara Davletova is a member of the jury of regional and All-Russian electroacoustic music competitions, including Digital Horizons (St. Petersburg, Russia), Snowdrop / Nomination "electronic music" (St. Petersburg); Spring Kaleidoscope (Khimki, Moscow region, Russia), CLARINI of the 21st Century (St. Petersburg, Russia).
Klara Davletova is the author of programs and the head of the city's advanced training courses for specialists in the additional education system for children of St. Petersburg (electronic music section); chairman of the city educational and methodological association of teachers of the St. Petersburg Children's educational institution in the field of electronic keyboard instruments (St. Petersburg City Palace of Youth Creativity).
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