

The Model of Training a Music Teacher in The System of Additional Education for Children for Professional Activities in the Information Educational Environment

Irina B. Gorbunova, Klara B. Davletova

Abstract— The article presents a developed and theoretically grounded model of training a teacher-musician of the additional education for children system for professional activity in the conditions of information educational environment.

The model developed by the authors ensures the formation of the readiness of a teacher-musician of the system of additional education for children for productive professional activity in the context of the functioning of a modern high-tech creative educational environment, combining innovative and traditional pedagogical technologies.

Keywords—additional education for children, advanced training courses, electronic educational resources, electronic musical instruments, digital keyboard synthesizer, information educational environment, music computer technologies, music teacher.

I. INTRODUCTION

Based on the theoretical and methodological analysis carried out, which included the study of: modern achievements in the field of music pedagogy, the specifics of the professional activity of a music teacher of the system of additional education for children (hereinafter referred to as AEC) system, innovative experience in the use of information and communication technologies (hereinafter referred to as ICT), music computer technologies (hereinafter referred to as MCT) and current trends in the digital transformation of education, a conceptual model was developed for the preparation of a teacher-musician of the AEC) system for professional activity in information educational environment (hereinafter referred to as IOS).

A distinctive feature of the model is the synthesis of traditional and innovative approaches, taking into account the specifics of the professional activity of a teacher-musician of the AEC system. For a teacher-musician of the AEC system, it is of key importance not only to possess the necessary professional competencies, but also to

develop the ability to adapt to a dynamically changing information environment, as well as the formation of skills for working with large amounts of information. The peculiarity of this approach, based on the principle of advanced training, is that in the context of continuous education, a teacher-musician of the AEC system gets the opportunity for continuous self-development and professional development through the effective use of IOS tools in professional activities.

The model consists of four interrelated blocks: a target block, a content block, an organizational and methodological block, and an evaluative and effective block.

In this model, the IOS functions as an integrated system and solves the following tasks:

- performs a system-forming function;
- serves as a platform for new forms of educational interaction;
- is a tool for the development of the information component of the professional competence of a teacher-musician of the AEC system.

In addition, the IOS actualizes the innovative potential of each component of the model, which leads to an update of the content and training tools; the introduction of new organizational forms; rethinking professional values and motivation.

I. The target block defines the strategic guidelines of the training model.

The purpose of the model is to develop the information component of the professional competence of a teacher-musician of the AEC system.

This component is characterized by the following criteria: motivational aspect - positive motivation and interest in the use of ICT, MCT in teaching practice; cognitive parameter – the system of professional knowledge in the field of ICT, MCT; operational and technological indicator - the ability to use hardware, ICT, the ability to design and implement their own professional activities;

The creative and aesthetic component is the ability to create original author's creative products, brightness, and novelty of the result.

The role of the IOC at this stage of training is to provide access to relevant resources.

II. The content block is a theoretical and methodological concept of the model of training a teacher-musician of the

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AEC system for professional activity in the IOC. It is based on the advanced training program implemented in the AEC system of St. Petersburg and includes three levels of development:

1. "Composition and arrangement on digital synthesizers. Theory. Practice. Methodology".
2. "Innovative methods and technologies in modern music education. A music computer in a synthesizer classroom."
3. "IOS of music teacher: design and management".

The development and practical application of the MCT is the basis of the content of the advanced training course programs. Theoretical and methodological analysis (Gennady G. Belov, Irina B. Gorbunova, Andreas Kameris) revealed the significant influence of the music computer technologies (hereinafter referred to as MCT) on the implementation of methodological approaches in the training of a teacher-musician of the AEC system. The following methodological approaches are used in the study (described above): system approach, competence approach, personal activity approach.

Music computer technologies MCT

The role of the MCT in the preparation of a teacher-musician of the AEC system for professional activity in IOS is manifested in the trinity of their purpose:

1. As a subject of study – the content of training;
2. As a means of learning, it is a tool of the educational process;
3. As a professional tool, it is a component of future pedagogical activity.

According to the research of Irina A. Bolshakova, the didactic system of training a teacher-musician of the AEC system is based on the following didactic principles:

1. The principle of professional continuity, based on the existing professional experience of a teacher-musician of the DOD system.
2. The principle of practical actualization, the implementation of acquired knowledge and competencies in practice, the project orientation of the educational process.
3. The principle of subject localization, adaptation of IOS to the specifics of music pedagogy, taking into account the features of the digital environment.
4. The principle of individualization, the development of individual educational routes, differentiation of content by level of training.
5. The principle of autonomy, the priority of practice-oriented forms of work, the development of self-education skills.

The practical implementation of these principles is confirmed by the experience of the Research and Methods Laboratory *Music Computer Technologies* at the Herzen State Pedagogical University of Russia, where they are successfully used in professional retraining programs, work with teachers from different regions of Russia, countries of the near and far abroad, and adaptation of traditional methods to the digital environment.

It should be noted that modern IOS conditions lead to a transformation of the roles of participants in the educational process: the teacher becomes a tutor and moderator of the

educational process, providing individual support and consulting support.

The student (a music teacher of the AEC system) moves from a passive recipient of knowledge to the autonomy of activity through the development of a design and creative component and self-regulation.

Thus, the methodological significance of the presented scheme lies in the paradigmatic shift in the training of a teacher-musician of the AEC system for professional activity, which is especially relevant in the conditions of IOS.

In addition, the content of the interaction of participants in the educational process is changing. From the classic "teacher-student" scheme to network collaborations, remote consulting and joint creative activity.

The presented role transformation shows the process of modernizing the training of a teacher-musician in the AEC system, as well as the system of music and pedagogical education in the AEC in the context of digitalization of education.

The development of the professional community of teachers and musicians of the AEC system in the digital environment is an important factor in successful adaptation to the conditions of IOS.

Within the framework of this direction, network forms of the professional community are created – platforms for the exchange of experience, discussion of methodological issues, as well as joint development of educational resources; master classes and webinars are organized with the involvement of experts in the field of MCT, electronic musical instruments (EMI); collaborative projects are joint creative and research activities of teachers from different regions (for example, the project "SYNTH-orchestra" with the participation of musical teachers and students from different regions of Russia, by P.L. Zhivaykin; https://youtu.be/2lwPWLp_VBk).

As a result of the conducted research, **pedagogical conditions** have been identified and scientifically substantiated that ensure effective training of a music teacher of the AEC system for professional activities in IOS.

1. *Ensuring the consistency and continuity of professional development.* It is carried out through the implementation of a model of continuous professional development through the integration of IOS capabilities; through the organization of a competitive movement and professional communities as mechanisms of professional self-realization; designing individual educational routes to address the professional deficits of a teacher-musician of the AEC system.

2. *The multidimensional nature of professional development.* The technological component includes the formation of digital competencies in the field of MCT; the methodological aspect involves the development of innovative methods of working with EMI, electronic educational resources (EER), and MCT; the personal motivational factor contributes to the development of professional reflection and motivation for self-development.

3. *Optimization of software and methodological support.* The introduction of modern ICT into the educational process, the combination of traditional pedagogical

technologies and innovative ones, the implementation of interactive forms of professional training (virtual workshops, online educational projects, remote creative laboratories).

4. *Formation of a culture of professional self-education.*

This requires the creation of didactic conditions for independent development of digital educational resources, the development of reflection skills, and productive participation in online professional communities.

Designing personalized professional growth trajectories, taking into account the directions of development of modern music pedagogy, the individual professional needs of a teacher-musician of the AES system.

The identified pedagogical conditions represent a unity of organizational, substantive, and technological components that ensure the successful adaptation of a teacher-musician of the AES system to professional activity in the conditions of modern IOS. The implementation of these conditions contributes to the formation of a new type of professional competence that combines musical and pedagogical training with digital literacy and the ability to continuously self-develop in a dynamic IOS.

II. 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 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 ICT, MCT, the formation of skills for their implementation in teaching practice and the creation of elements of personal information technology.

III. THE ROLE OF IOS IN THE ORGANIZATION OF FLEXIBLE AND INTERACTIVE TRAINING OF A MUSIC TEACHER OF THE AES SYSTEM

The content block of the AES system teacher-musician training model for professional activities in IOS is a comprehensive system that combines theoretical, methodological and practical aspects. It is based on three levels of professional development programs aimed at mastering the ICT, as well as methodological approaches that ensure the formation of professional competencies. The key role of MCT is manifested in their triune purpose: as a subject of study, a means of teaching, and a professional tool. Didactic principles, such as professional continuity, practical actualization and individualization, emphasize the importance of adapting learning to the needs of a teacher-musician of the AES system and the specifics of music pedagogy. The transformation of the roles of participants in the educational process and the introduction of IOS contribute to the flexibility and interactivity of learning, which is especially important in the context of digitalization.

III. The organizational and methodological block is a set of organizational, methodological and technological mechanisms that ensure the effective implementation of professional development programs using ICT and digital tools. The elements of the organizational and methodological block include the following parameters:

Planning the educational process.

At this stage, the analysis of the professional needs of a teacher-musician of the AES system is carried out using the methods of questionnaires and expert assessments; the development of additional courses taking into account the requirements for ICT competencies; the formation of a modular course structure that provides flexibility and variability of training. Resource provision. To implement advanced training programs, a modern material and technical base is needed, including: computer equipment with specialized music software, MIDI keyboards, digital keyboard synthesizers, access to EER, including databases and cloud platforms.

Organization of training in IOS.

Course preparation in IOS involves the automation of certain organizational processes, such as registration of students, collection of analytical data, processing of questionnaires and tests, the use of distance learning systems (Google Classroom) for flexible schedules and individual learning paths, the introduction of interactive forms of work (webinars, online classes or simulators).

Methodological support for students.

Individual and group consultations of various forms are provided to support the educational process, including using video communication platforms (Zoom, Microsoft Teams), and interactive interaction takes place through messengers (WhatsApp, Telegram) and VKontakte social networks. Methodological support during preparation also includes the creation of electronic teaching aids, algorithms, video tutorials for self-study, posting methodological materials or lesson notes on Google Drive or Yandex.disk.

Monitoring and evaluation of learning outcomes.

The training quality monitoring system includes conducting entrance, intermediate and final testing (questionnaires), evaluating practical tasks, including creating arrangements, compositions and methodological developments using the MCT. Analyzing feedback from listeners through Google Forms and other survey tools.

Monitoring and adaptation of the program.

To ensure the relevance of the content of the course programs, the following mechanisms are used: analysis of new trends in the field of ICT and digital music education, adjustment of programs in accordance with changes in the regulatory framework and professional standards, introduction of innovative modules with subsequent assessment of their effectiveness.

Social interaction.

The development of the professional community of teachers and musicians of the AES system is carried out through the creation of network forms of communities for the exchange of experience and collaboration, the organization of seminars, master classes, conferences, and support for collaborative initiatives.

The role of IOS in the organizational and methodological block is to automate the educational process, provide analytics to assess the effectiveness of training and create conditions for the continuous professional development of teachers-musicians of the AES system.

Thus, the organizational and methodological block of the model is a system that combines traditional and innovative approaches to managing the training process. The inclusion of monitoring mechanisms and social interaction ensures its flexibility, relevance and compliance with the requirements of IOS.

IV. Evaluation and performance block. The purpose of this unit is to diagnose the formation of professional competencies, as well as to evaluate the effectiveness of training a teacher-musician of the AES system for professional activity in IOS. Monitoring is a two-level assessment system, combining an external assessment of the training results, which include

expert assessments by the course teachers and professional feedback from colleagues.; It includes expert competence maps, an analysis of practical tasks and a self-assessment of a AES teacher-musician through professional reflection, filling out achievement assessment maps, self-diagnosis of the level of mastery of MCT and digital tools, and a questionnaire of satisfaction with the educational process. In this case, reflection is aimed at understanding the level of formed competencies, personal and professional transformations. In turn, the criteria for the effectiveness of training for a teacher-musician of the AES system are the depth of awareness of professional changes and the ability to further develop. Let's highlight the following main advantages of the presented block. The principle of integrated assessment includes a combination of external expert assessment and internal self-assessment, a combination of qualitative and quantitative indicators, and a multi-pronged analysis of the results of professional training. Reflexive orientation promotes the development of critical introspection of activities, stimulates a conscious attitude towards professional growth. The practical significance lies in the direct connection of the assessment results with the improvement of pedagogical activity, and also includes the possibility of correcting the educational process. Thus, the evaluation and performance block not only records the achieved results, but also creates conditions for continuous professional improvement of the teacher-musician of the AES system in IOS.

IOS as the organizational and technological basis of the AES system teacher-musician training model.

The IOS in the model is a system-forming link and provides the following in the training process: adaptation to the individual needs of the teacher-musician of the AES system (flexibility), access to ESM (accessibility), opportunities for interaction and collaboration (interactivity), data collection on learning outcomes and progress (analytics, feedback).

The key components of the IOS are:

1. Digital resources, include IMSLP/Petrucci music archives, Music Library, Free-scores.com, library of custom arrangements + MuseScore editor, MKT, electronic libraries of the Russian State Library, Google Academy, videos on YouTube channels: The Virtual Instructor, Rick Beato. Coursera training programs, Fundamentals of Music Theory, Stepik, specialized Soundtrap platforms, Flat.io and others.

2. Interaction tools: organization of the educational process: LMS systems, Moodle, Google Classroom, Canvas, Blackboard; collaborative platforms for collaboration on materials and projects, Google Jamboard, Soundation; feedback systems Google Classroom, Seesaw.

It should be noted that the IOS integrates with the components of the model, the advantages of such integration are the combination of components, the ability to build individual trajectories, feedback, and program adjustments based on data analysis.

Thus, the proposed model of training a teacher-musician of the DOD system for professional activity in the IOS is an integrated system in which the IOS performs a key integrating function. The IOS is the basis of the model that provides:

- technological support at all stages of professional training, providing access to digital resources, tools for creative and pedagogical activities, platforms for interaction and exchange of experience;

- methodological support through continuous monitoring, opportunities for reflection and self-assessment, feedback and correction mechanisms.

The interaction mechanisms in the model are implemented through:

Horizontal communications are represented by a single digital space at all stages of preparation, an end-to-end monitoring system, and integrated communication links.

Vertical integration represents a scheme:

- from content to activity (transformation of knowledge into practical skills);

- from activity to results (recording and examination of achievements);

- from results to content (correction of programs based on the conducted analysis).

The conducted research made it possible to develop a scientifically based model of training a teacher-musician of the DOD system for professional activity in IOS.

The *methodological validity* of the model lies in the integration of systemic, competence-based, personal-activity and information approaches; in taking into account the specifics of the professional activity of a teacher-musician of the AES system in a digital environment; compliance with the principle of lifelong learning.

The *structural integrity* of the model lies in the interrelation of the target, substantive, organizational, methodological and evaluative-effective blocks; in the unity of theoretical training and practice-oriented activities, in the balance between traditional and innovative forms of education.

Technological efficiency consists in the active use of the MCT, the realization of the capabilities of the IC, and the use of modern IOR.

The *didactic value* of the model lies in its focus on the development of professional reflection, stimulating the professional development of a teacher-musician of the AES system.

Thus, the presented model of training a teacher-musician of the AES system for professional activity in IOS is a system that ensures the formation of the information component of professional competence. The implementation of this model contributes to improving the quality of pedagogical activity of a teacher-musician in the conditions of IOS.

IV. CONCLUSION

The conducted research allowed us to formulate the following provisions: 1. The structural organization of the model is based on: – a systemic relationship of the target, substantive, organizational, methodological and evaluative-effective blocks; The unity of theoretical training and practice-oriented activities; A combination of traditional and innovative forms of education. 2. Advanced training courses are defined as a key element of training, having the following characteristics: A practice-oriented orientation that

ensures the introduction of ICT into teaching practice; modular structure of professional development programs with the ability to implement individual educational trajectories; synthesis of traditional and innovative teaching methods aimed at flexible formation of professional competencies. 3. The role of the MCT, which performs a threefold function in the training of a teacher-musician of the DOD system, is particularly emphasized.: as a subject of study, forming the basis of the teaching content; as a means of learning, acting as an instrument of the educational process; As a professional tool, it becomes a component of future pedagogical activity. 4. The IOS acts as a backbone element of the model, providing: – technological support of the educational process; – access to digital resources and professional interaction tools; The implementation of online learning forms that promote continuous professional development. 5. Innovative approaches implemented in the model: Mastering and applying MKT (digital arrangements, virtual musical instruments and synthesizers, computer musical notation, digital sound recording and processing); – remote and mixed formats (online labs, webinars, video conferences, cloud platforms); Project methods (creation of creative multimedia products, creative projects, digital educational materials), Personalization of learning (adaptive pace of learning materials), online professional communities (professional social networks for teachers and musicians, platforms for sharing experiences, mentoring and mentoring).

6. The role transformation of participants in the educational process reflects the modernization of training and is expressed in the transition: From the classic teacher-student scheme to network collaborations, from face - to - face counseling to remote interaction, from individual learning to joint creative activity in IOS. Thus, the developed model ensures the formation of the readiness of a teacher-musician of the DOD system for productive professional activity in the conditions of IOS, combining innovative and traditional pedagogical technologies.

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Her research activities include such directions as:

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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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