Music-Digital Technologies as a Means of Developing Creative Independence of Students of Colleges and Higher Schools in China and Russia

Kashina N.I.[1*] Pavlov D.H. [2] Li HaiMing[1,3]

[1] *Ural state pedagogical university, Yekaterinburg, Russia,*
[2] *Surgut College of Russian culture named after A. S. Znamensky, Surgut, Russia*
[3] *Humanities Institute of North-Eastern pedagogical University, Changchun, China*
Corresponding author. Email: koranata@mail.ru

ABSTRACT

The article deals with the problem of developing creative independence of future specialists in the field of music education in China and Russia by means of music and digital technologies. The purpose of this article is to reveal content of the process of creating musical works by music-students studying in colleges and universities in Russia and China using music and digital technologies (technical means that serve to optimize the process of musical composition: digital musical instruments – electronic pianos, synthesizers, samplers, workstations, elements of computer music Studio – multimedia computers, computer programs, audio-MIDI sequencers, VST tools, audio editing/arrangement programs), to identify pedagogical potential of this digital tool in development of creative independence of students-musicians.

The authors prove that using digital technologies in musical and compositional activities of students, at all stages of creating a musical work, not only positively affects motivational-value, organizational-planning and activity-creative components of students ' creative independence, but also allows training specialists capable of professional growth in the conditions of informatization and digitalization of society, development of new knowledge-intensive technologies. Students develop their creative attitude and interest in their future profession, desire for self-development, self-knowledge, self-affirmation in this type of creative activity (motivational-valuable component), the ability to create artistic products using music and digital technologies, to plan, self-organize and self-correct their activities, to determine the prospect of their further creative development (organizational- planning component), the student masters the methods and techniques of creative activity at the level of self-organization, using music and digital technologies, which is accompanied by stimulation and intensification of the processes of fantasy and imagination (activity-creative component).

Keywords: music and digital technologies, creative independence, students-musicians, music and composition activities, music education

1. INTRODUCTION

Development of modern information technologies all over the world has led to their active introduction into educational practice, since they have extensive creative and pedagogical potential, opening up new opportunities for creating a system of socio-cultural innovations, and give opportunities for achieving new economic and social results [8].

Modern governing documents concerning the content of education and social development in Russia ("the Concept of the Federal target program for development of education for 2016-2020", State program of the Russian Federation "Information society (2011-2020)") identify ideas about necessity to ensure development of an individual in innovative environment of training and upbringing, creating programs that implement information, digital technologies in education, training of highly qualified specialists capable of professional growth in the conditions of informatization and digitalization of society and development of new knowledge-intensive technologies.

China is currently undergoing a process of reforming the system of secondary and higher education, which is caused by contradiction between requirements of high-tech, innovative, digital and smart economy and industry for University graduates, and traditional methods of their training in the system of secondary and higher education. Since 1995 up to the present day, the "Project 211" has been realized in the PRC, the purpose of which is establishing a system of innovative information-communication environment in Chinese universities, acceleration informatization of higher education [4, 5, 10].

Information and digital technologies have also penetrated into the content of music education. To this date, researchers have already disclosed didactic aspects of the problem of implementing these technologies in the educational process (I. B. Gorbunova, I. M. Krasilnikov, S. p. Polozov, S. V. Puchkov, Yu. N. Rags, etc.). Scientists prove that these technologies, at first, are an element that contributes to creating productive links between music theory and music practice; secondly, they are a component that is compatible and organically interacts with traditional methods of teaching in music education. Third, these technologies do not replace the teacher, but contribute to improving effectiveness of educational and creative process carried out in educational institutions. They make it easier to do a number of routine and monotonous operations in the process of musical creativity (recording compositions and/or fragments of them, editing, arranging, listening to various sound variants, computer instrumentation), that enables students to increase effectiveness of the process of improvisation and composing music (music composition). Fourth, they contribute to interaction (dialogue) of musical traditions, trends and genres, synthesis of various types of arts in culture (that in its turn, inspire development of students ' interest in the musical heritage of the past for a deeper understanding of the content of a musical work and the search for ways to embody their "I" in created artistic product [6, 7]). Fifth, students expand opportunities for independent search, analysis, synthesis and following generalization of necessary information (for example, the search for musical and artistic images, techniques of melodic development, texture design of the melody, etc.).

There will be the process of including music and computer technologies in music and composition activities as a process aimed at creating artistic texts in the language of music as an art form analyzed in this research [2]. Forms of music composition activities are music composition (the process of creating a musical composition, accompanied by its music que sheet) and musical improvisation (the process of spontaneous composition of a new musical material) [1]). In the process of creating/composing a piece of music, it is possible to use music and computer technologies, including: music editing programs, digital musical instruments – electronic pianos, synthesizers, samplers, workstations, computer music studio elements – multimedia computers, computer programs, audio-MIDI sequencers, VST instruments, audio editing/arranging programs.

In works of modern Russian and foreign researchers there are various aspects using of musical and computer technologies in creative and educational space are revealed and peculiarities using of musical- digital instruments of music students and music-teacher are chracterised (I. M. Krasilnikov, A. M. Rybnikov), as well as in the process of teaching pop singers (N. G.Tagiltseva, S. A. Konovalova, L. V. Dobrovolskaya, A. M. Zhukova [9]), in the process of musical education of children in establishments of additional education [3], as the basis for innolving future teachers to composition and arrangement (A. A Apasov), as a means of forming professional competencies of students (A. A Konovalov). There are works that relate to the process of composing and arranging music on a computer (R. Yu. Petelin, Yu. V. Petelin), technology of using music layout programs (G. R. Azatyan, S. P. Polozov, S. I. Sirotin), the process of recording and editing sound using musical effects (T. Brown, A. P. Zagumennov). But none of the above-mentioned studies reveals pedagogical aspects of solving the problem of developing creative independence of students-musicians of colleges and higher schools by means of music and computer technologies.

The pedagogical potential of music and computer technologies in development of creative independence of students-musicians is as follows:

- students are developing creative attitude and interest in a future profession, commitment to self-development, self-knowledge, self-esteem, awareness of the subjective significance of this kind of creative activity (motivational-valuable component of creative independence),

- students are gaining skills of not only of creating art, but of planning, self-organization and self-correction of their work/ They learn how to determine future perspective of their creative development (organizational and planning component of creative independence),

- students are mastering methods and techniques of creative activity at the level of self-organization, using music and computer technologies, which are accompanied by stimulation and intensification of the processes of fantasy and imagination (an activity-creative component of creative independence).

2. METHODOLOGY OF THE RESEARCH

The research is based on: concepts of musical activity with the use of music and computer technologies (I. B. Gorbunova, I. M. Krasilnikov); theoretical provisions on the content of the resourceful process of creating a piece of music (A. M. Aranovsky, L. L. Bochkarev, A. L. Gotsdiner, G. p. ovsyankina).

3. RESULTS AND DISCUSSION

The study was conducted on a wide sample of students of the Surgut College of Russian culture named after A. S. Znamensky, studying in the specialties of "Instrumental performance", "Choral conducting", "Vocal art", "Solo and choral folk singing", "Musical sound engineering" and students-musicians of Humanitarian Institute of the North-Eastern pedagogical University of Changchun, China.

Initial diagnostics of development of creative independence of students included such methods as questionnaires, the method of incomplete sentences, the method of observation, testing.

The diagnostics made it possible to formulate the following results.

Passive-reproducing level of development of creative independence demonstrated 54% of students of the

College of Culture (Russia) and 40% of students of the Humanities Institute of the pedagogical University (China) demonstrated a *passive-reproducing level* of developing creative independence. This level was characterized by students ' unformed interest in their future profession, their lack of desire for self-development, self-knowledge, self-affirmation, and awareness of subjective significance of musical and compositional activities; unformed ability to create artistic products, carry out planning, self-organization and self-correction of their activities, determine prospects for their creative development; unformed skills of creative activity, use of music and computer technologies.

Reproductive level of development of creative independence was demonstrated by 35% of students of College of Culture (Russia) and 37% of students of Humanities Institute of pedagogical University (China). This level was characterized by students' formed interest in the future profession, but not sufficiently developed creative attitude to it, lack of desire for self-development, self-knowledge, self-affirmation, insufficient awareness of its subjective significance of this type of creative activity; insufficient formation of skills to create artistic products, to carry out planning, self-organization and self-correction of their activities, to determine perspectives of their creative development; insufficient mastery of methods and techniques of creative activity at the level of self-organization, using music and computer technology.

Creative level of development of creative independence was demonstrated by 11% of students of College of culture (Russia) and 23% of students of the Humanities Institute of the pedagogical University (China). This level was characterized by the presence of a creative attitude and interest in their future profession of students, desire for self-development, self-knowledge, self-affirmation, awareness of subjective significance of this type of creative activity; formed skills to create artistic products, to carry out planning, self-organization and self-correction of their activities, to determine perspective of their creative development; formed methods of creative activity at the level of self-organization, using music and computer technologies.

The results obtained allowed us to continue the work of a formative nature.

Russian musicologists (A. M. Aranovsky, L. L. Bochkarev, A. L. Gotsdiner, G. P. Ovsyankina, etc.) distinguish several stages in music composition work. At the first stage, the idea of improvisation or composition is at its birth. At the second stage, conscious and subconscious thinking of the idea, the choice of genre and thematic material is carried out. At the third stage, there is a synthesis of details, in which the idea is formed into a form and is to be implemented as improvisation or composition. At the fourth stage, the incubation phase is completed, which includes the previous stages and the beginning of improvisational performance of a musical text in real time or its design in music que sheet by means of graphic fixation.

Below we will reveal how music and computer technologies were included in all stages of music and computer activity. These technologies were introduced into educational process of students studying at Surgut College of Russian Culture named after A. S. Znamensky and music-students studying at Humanitarian Institute of the North-Eastern pedagogical University in Changchun, China.

At the first two stages of the incubation phase, students' music-composition work was mainly carried out subconsciously, using two types of intuition – sensory, operating with visual and auditory images, and intellectual, revealing compositional details on the basis of operating with emotions, compressed or expanded sound complexes. At these stages, students used:

- music and digital tools, including digital pianos Casio Privia PX-760BK, Korg C1-BK, Yamaha CLP-645R, keyboard workstations-Korg PA1000, Roland JUNO-DS88, Yamaha MX-61BK (to develop the greatest number of musical and sound ideas of students in the course of directed music making and listening to synthesized timbres, close or distant acoustic in their sound);

- programs of musical layout - Finale, MuseScore, Sibelius (or Musette, Canorus, Musescore, etc.) for students to transmit the most vivid musical and sound ideas into musical and textual ones by means of their notation and editing as blanks for future integral music texts (intuitive actions of students were associated with reactions aimed at checking auditory and visual images, musical and expressive complexes to establish their significance, to clarify the form of future improvisations or compositions and their music and artistic content). Students ' choice of music editing programs depended on what functionality they needed, what genres they were attracted to, etc.

At the first and second stages of creating a musical work, music and computer technologies were a means of stimulating and intensifying students' processes of fantasy and imagination, a means of self-organization and self-correction of their activities to create a piece of music.

The third stage, which was the shortest in time, but the most productive in content – inspiration, as the highest point of entire intuitive process of understanding music and artistic content of the future musical text, a productive part of raising creative forces of a student.

All music-thematic material that does not fit into the formation of a coherent entity, at the moment of such a vision acquires an internal order and compositional form, as a result of which everything redundant is excluded, and the most striking themes are selected.

If at the first and second stages of music composition activity, the use of digital musical instruments-digital pianos and keyboard workstations that serve to develop the greatest number of music and sound ideas in the course of directed music making (Casio Privia PX-760BK, Roland JUNO – DS88, etc.) is more important, then at the third stage, the main role is assigned to the use of music layout programs (Sibelius, etc.). Via these musical and digital tools, students developed the found music and sound ideas to relatively independent thematic elements. However, for the composition process, their notation-text fixation was more important, i.e., their approval as the most successful "trove" for future musical texts.

At the third stage of music-compositional activity, music-computer technologies were a means of self-knowledge, self-affirmation, awareness of subjective significance of this type of creative activity.

The fourth stage, being the final one, was associated with improvisational performance of a musical text by students using a musical-digital instrument and its audio recording, and was a means of musical notation of the material being composed. An important role was played here by selection of means of artistic expression-images, melodies, tempo and harmonic characters, etc. The final implementation of a planned and meaningful improvisation or composition required students' 'activation of their physical and spiritual forces to maintain accumulated emotional tension at all previous stages in order to uphold their interest in a music-artistic idea. At this stage, the following music and computer technologies were used:

- music layout programs (Sibelius, MuseScore, Finale), in which the completed texts of musical compositions were saved in MIDI format for further work with them in other computer programs for the purpose of voicing synthesized timbres;

- audio MIDI sequencers Cubase SX, Sonar, FL Studio for voicing received MIDI tracks with synthesized timbres using VST instruments such as Edirol HQ Orchestral, Edirol Hyper Canvas, LA Scoring Strings, Native instruments Kontakt, Studio Drummer;

- audio editing/arranging programs-Adobe Audition, Sound Forge, and WaveLab for recording improvisations, compositions, and editing synthesized timbres of compositions.

In addition, computer programs for creating Power Point presentations and video editing/arranging Windows Movie Maker, Sony Vegas for creating video sequences/clips using students ' music and associated graphic images were also used to present improvisations and compositions of students.

When voicing a musical text to be composed on an electronic piano, workstation, or music computer, it is necessary, firs of all, select from a number of electronic timbres the ones that fit the text best, correct the texture of a presentation, and create a draft of its arrangement. At the same time, it is advisable to make certain adjustments to timbres of a workstation or create new original versions of them, acting as a producer of virtual musical instruments on a multimedia computer.

At the same time, students ' musical and compositional activities become more versatile and productive. All this makes music and computer technologies an extremely valuable tool for developing students' creative independence.

The results of the final diagnosis allowed us to conclude that the level of development of creative independence of students-musicians of music colleges and universities by means of music and computer technologies has increased.

4. CONCLUSION

Music and computer technologies make more universal demands on the musician in comparison with the use of traditional mechanical or electronic analog instruments. If previously a musician could perform one of three functions of a composer, performer or listener / sound engineer, today, relying on music and computer technologies, each music-student is able to combine these activities in a sequential triad, which expands consciousness of a greenhorn musician, allows him to see new horizons.

Music and computer technologies make it possible to overcome the one-sided performance orientation of traditional education, which is typical for both Russian and Chinese music education, and help students to activate musical thinking, musical intelligence and, most importantly, development of creative independence.

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