Music-Computer Technologies in the Formation of a Complex Model of the Semantic Space of Music

Shermatova Khilola Mirzayevna [1], Yusupjonova Dilfuzakhon Olimjon kizi [2], Karimova Zahrokhon Azimjon kizi [3]

[1]Teacher of FerSU

[2, 3]Student of FerSU

Abstract: The article discusses the use of music-computer technologies (MCT) in the formation of a complex model of the semantic space of music. The mechanisms of formation of virtual reality dedicated to the individual components of such a space are analyzed. The need for the development of the MCT itself is noted in the context of the transformation of the forms of accumulation and methods of transferring knowledge about music, musical sciences in the era of the development of digital technologies in order to combine existing approaches into a new organic unity.

Key words: digital arts, music and computer technologies, semantic space of music, virtual reality.

INTRODUCTION

Music is one of the facets of comprehending the spiritual content of the world, its beauty, reflected in the sound. The sound of music is perceived by a person as a special information space. How information technologies function in the sound (and, more broadly, semantic) space of music - this issue has become the subject of attention of musicians of various specialties in connection with the formation of new creative prospects for the musician's activity.

MATERIALS AND METHODS

The knowledge of the secrets of sound formation, sound creation, the richness of the timbre and acoustic effects of music becomes tangible for a true musician, enriches his creative imagination, and gives impetus to artistic innovation. At the turn of the 20th and 21st centuries, a new direction in musical creativity and musical pedagogy arose, due to the rapid development of electronic musical instruments (from simple synthesizers to powerful musical computers) - music-computer technologies (MCT) [1].

RESULTS AND DISCUSSION

The development of individual compositional patterns, as well as their combination, contributes to the disclosure of the concept of harmony. Since the function of harmony is bonding, the connection of a certain number of elements in order to synergistically coordinate them with each other to perform a common task, when teaching students music using information technology, in combining computer and art, the section mathematics - group theory. In a well-known work on group theory by A. Shubnikov and V. Koptsik, devoted to the use of the principles and methods of symmetry in

OPEN ACCESS

International Journal of Language Learning and Applied Linguistics
For more information contact: mailto:editor@inter-publishing.com

Volume 2, No 6 |
Jun - 2023

various fields of art, it is noted: "The concept of symmetry enters art history through the concept of structure. Art, as a figurative form of cognition and modeling of the world, should and does reflect its structural side. Structurality is a fairly general law, a form of existence and movement of matter, and the products of scientific and artistic creativity are also subject to this law. It is well known that works of art — fiction, poetry, music, painting, architecture, etc. — have a complex artistic structure, represent an organic interweaving and interpenetration of various substructures of individual components of artistic expressiveness" [2].

We live in the era of the establishment of the era of digital civilization, and at the same time - a change in the possibilities and means of teaching art, musical art in particular. Cardinal changes have taken place in the artistic sphere, new creative directions have emerged: "digital arts", "distant reading", "digital reading" (F. Moretti's term), "music and computer technologies", "media music" (A. Chernyshov's term), "media education", etc., requiring joint research of the humanities and specialists in the field of digital technologies.

With the development of MCT in modern musical art and education, a significant place is occupied by technological aspects of ideas about musical creativity and musical instruments (including musical-computer tools); without knowledge of these aspects, a competent interpretation of musical works by a performer is impossible. The existence of musical instruments, their sound, embodied in musical sounds, illustrates the fundamental ideas associated with the study of a complex model of the semantic space of music. The attention of musicians is drawn to the study of the physical characteristics of musical sounds, the methods of recording and reproducing them, the explanation of the psychoacoustic features of human auditory perception of sound, the basic principles of computer generation of musical sound, etc [4].

Modern MCT and other applied research, illustrating a wide range of new musical-theoretical trends in the science of music and expanding the range of scientific problems defined by a complex model of the semantic space of music, uniting different levels of musical semantics.

CONCLUSION

The textbooks consider various aspects and elements of the formation of a complex model of the semantic space of music and the forms of interaction between music, mathematics and computer science in their historical development (including the modern stage); contains recommendations for the construction of a training course dedicated to the use of information technologies in music and MCT in music science and practical musical composition.

REFERENCES

1. Hoffman I. Piano game. Answers to questions about the piano game / transl. from English. G.A. Pavlova. M.: Muzgiz, 2011. 224 p.

2. Schweitzer A. Johann Sebastian Bach. M.: Klassika-XXI, 2011. 816 p.

3. Gorbunova I. B., Zalivadny M. S. On mathematical methods in the study of music and the training of musicians // Problems of Musical Science. 2013. No. 1(12). pp. 272-276.

4. Gorbunova I. B., Zalivadny M. S. Experience of mathematical representation of musical and logical patterns in the book of J. Xenakis "Formalized Music" // Society. Wednesday. Development ("TERRA HUMANA"): Scientific and theoretical journal. 2012. No. 4(25). pp. 135–139.

5. Euler L. Experience of a new theory of music, clearly stated in accordance with the immutable principles of harmony / transl. from lat. N. A. Almazova. St. Petersburg: "Nestor-History", 2017. 273 p.

6. Mirzayevna, S. H., Muhammadaliyevna, A. S., & Qizi, O. M. O. (2022). Boshlangʻich Sinflarda Taʼlim Sifatini Oshirishda Aktdan Foydalanish. Talqin va tadqiqotlar ilmiy-uslubiy jurnali, 1(13), 69-74.

7. Шерматова, Х. М., & Мукимова, З. З. (2021). Интеллектуальная культура-важный фактор образовательного процесса. Экономика и социум, (4-2 (83)), 723-726.

8. Shermatova, H. M. (2023, January). Raqamli texnologiyalar va sun'iy intellekt tizimlarini ijtimoiy-iqtisodiy sohalarda qo 'llanilishi. In International scientific and practical conference" the time of scientific progress" (Vol. 2, No. 5, pp. 107-113).

9. Shermatova, X.M., Maxammadjonov, J. (2023). Fan va ta'lim rivojlanishining zamonaviy tendensiyalari. Oriental Renaissance: Innovative, educational, natural and social sciences, 3(4), 788-792.

10. Шерматова, Х. М. (2018). Параллельное микропрограммирование алгоритма вычисления стандартных функций.

11. Yuldasheva, G. I. (2021). The use of adaptive technologies in the educational process. Экономика и социум, (4-1 (83)), 466-468.

12. Shermatova, G. Y. H. (2022). Aniq fanlarni o'qitishda axborot texnologiyalaridan foydalanish. Scientific progress, 3(1), 372-376.

13. Yuldasheva, G., & Shermatova, H. (2022). Ta'limda innovatsion texnologiyalarning qo 'llanilish istiqbollari. Science and innovation, 1(B8), 5-9.

14. Тешабаева, О. Н., & Шерматова, Х. М. (2022). Современные информационные услуги в обеспечение конкурентоспособности коммерческих банков. Scientific progress, 3(1), 44-51.

15. Shermatova, Z. I. L. O. L. A., & Shermatova, H. I. L. O. L. A. (2022). The role of electronic educational manuals in the field of ICT. Интернаука, 4(1), 46-47.

16. Kh, K. Z., & Nazirjonova, F. S. (2021). The role of new information technologyies in education. Экономика и социум, (4-1 (83)), 167-170.

17. Guerra Quispe, B. S. (2022). Comunicación asertiva y relaciones interpersonales en docentes de las instituciones educativas del distrito de Pichari–Cusco, 2022.

18. Mamarajabov, M. E., & Ismoilova, D. S. (2020). The concept of development of information technology education in the system of continuous education in the republic of Uzbekistan. Theoretical & Applied Science, (6), 481-487.

19. Mamarajabov, M. E., & Ismoilova, D. S. (2020). Competence-based education in computer science and information technologies. Academicia an International Multidisciplinaru Research Journal,(10), 699-705.

20. Aldashev, I. (2020). Use the specific properties of the computer, allowing you to individualize the educational process and turn to fundamentally new cognitive means. Economy And Society, 6, 73.

21. Aldashev, I. (2020). Modern information technologies in education are a new opportunity. Economy and society, 6, 73.

22. Kh, T. T., & Toshboltayev, F. U. (2021). Methodology of teaching information technologies with innovative technologies. Экономика и социум, (4-1 (83)), 414-416.

23. Mirzaakbarov, D. D. (2021). Directions for the introduction of new information technologies in education. Экономика и социум, (4-1 (83)), 211-214.