

# The Neuroaesthetics of "Shashmaqom": Forming Students' Aesthetic Culture Through Art-Therapeutic Teaching of the "Mushkulot" Section

Jurabek Yarashe<sup>1</sup>, Marjona Mirzayeva<sup>1</sup>, Dilnavoz Murotova<sup>1\*</sup>

1: Department of Education, Bukhara State Pedagogical Institute, Bukhara, 200100, Uzbekistan

E-mail: [Yarashev1982y@gmail.com](mailto:Yarashev1982y@gmail.com); [marjinamirzayeva@gmail.com](mailto:marjinamirzayeva@gmail.com); [muratovadilnavoz@gmail.com](mailto:muratovadilnavoz@gmail.com)

## Abstract:

In this article, we investigate formation of students' aesthetic culture in the process of teaching the "mushkulot" section of "shashmaqom" using listening to music. The main objective of this study is ensuring the student's all-around development and harmoniously shaping their psycho-emotional, cultural-aesthetic, and cognitive potential through a multidisciplinary approach to the music education process. We employ technology for uncovering the aesthetic and expressive potential of "Mushkilot" songs based on art therapy methods, and for effectively organizing the educational process on that basis to foster a positive psycho-emotional state in the student by utilizing the psychotherapeutic properties of music. From a neurobiological perspective, the rhythm and melodies of the "Mushkulot" modulates limbic activities and enhance release of neurotransmitters therefor, influencing emotional regulation, attention, and cognitive behavior during the learning process. The results indicate that, within the framework of music art therapy, reflection through the musical listening experience ensures emotional understanding, the analysis of one's mental state, and the perception and expression of changes, leading to the introduction of integrated, interactive, and personalized learning technologies, enhances the effectiveness of the pedagogical process, and enables the deeper development of students' aesthetic culture through problem-based learning. These findings provide new insights into the Mushkilot section of the Shashmaqom, with its intricate structure, melodic richness, and profound philosophical content, has great potential not only for musical, but also for spiritual and aesthetic education, and the proposed approach can be applied to organizing the learning process at the intersection of music, Psychology, pedagogy, and cultural studies.

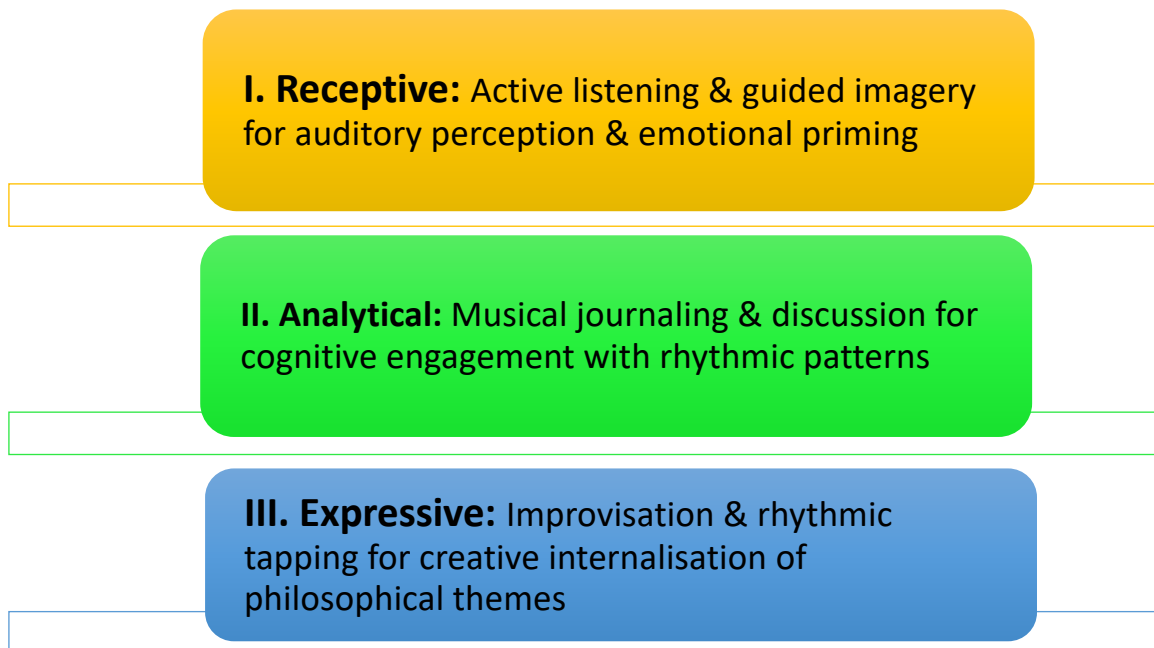
**Keywords:** Aesthetic culture, music therapy, maqom, mushkulot, music, psychology, pedagogy and cultural studies, integration, reflection, technology.

## Introduction

In recent years, the issue of aesthetic education in the “Mushkulot” of Shashmaqom has attracted growing attention among researchers due to its increasing influence on music therapy. The rapid development of education has created new opportunities and challenges, making the study of musical and aesthetic upbringing in school-aged learners particularly significant. Numerous studies have addressed the development of musical perception and aesthetic taste from various theoretical and empirical standpoints, providing valuable insights into the neurological and psychological processes involved in learning music and the impact of artistic experiences on personality development. Many regions of brain associated with emotion, cognition, and sensory processing are involved with music and sound perception and analysis. When students are listening to music, the auditory cortex of brain gets activated. Process of learning music and rhythm activates prefrontal region which is involved in higher-level cognitive functions such as attention, interpretation, and aesthetic judgment. The aesthetic experience and deep emotions evoked during experiencing “Mushkulot” of Shashmaqom may also activates the limbic brain parts including the amygdala and hippocampus and causing release of neurotransmitters such as dopamine and serotonin [1]. All these brain activities stimulate emotional responses and reward mechanisms thus fostering a sense of well-being and forming of pleasant memories that helps in improving memory and attention in students. These neurobiological impacts of music have a profound may impact emotional well-being and cognitive development of students as well.

However, most existing works focus primarily on the general principles of music education, and the integration of innovative methods, such as art therapy and interactive digital tools, into aesthetic education remains insufficiently explored. This suggests that our current understanding of musical-aesthetic upbringing is incomplete and requires further investigation. Moreover, solving this problem is important not only for advancing theoretical knowledge, but also for improving teaching methodology and instructional practice in music education. Therefore, exploring effective approaches to musical-aesthetic upbringing is both timely and relevant, providing a solid foundation for further scientific enquiry and real-world application in music pedagogy.

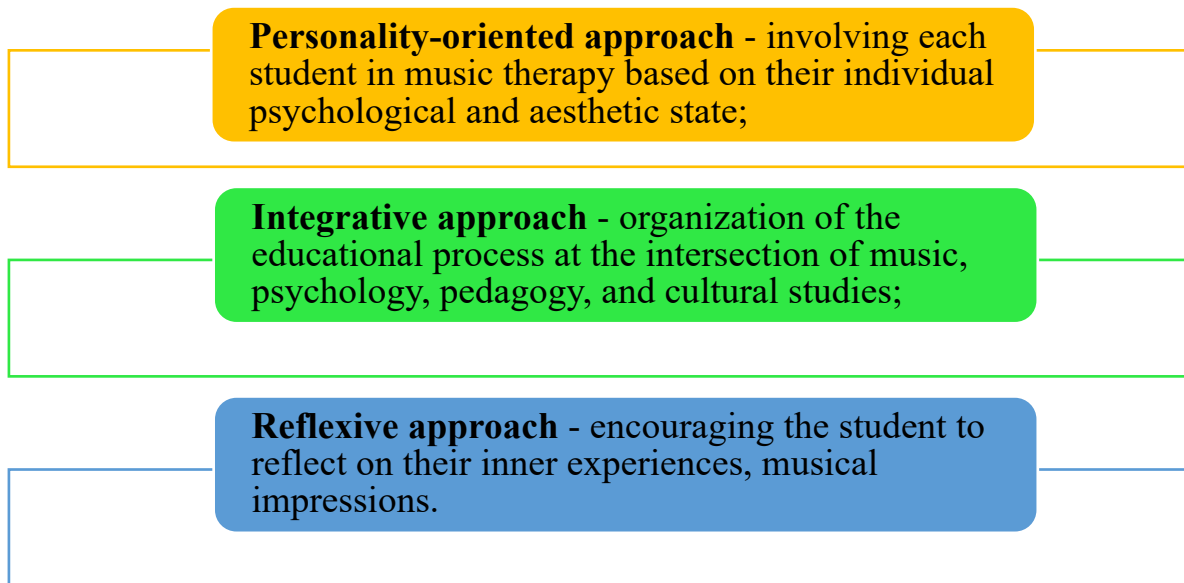
The issue of forming the aesthetic culture of students in modern education is a complex, multifaceted process that requires an individual approach. In the effective implementation of this process, the technology of teaching the works of the Mushkulot part of the national musical heritage - particularly the "Shashmaqom" - through art therapy is of current importance.



**Fig 1. Suggested steps for integration of musical-aesthetic factors for improving teaching methodology and instructional practice in music education**

Structured musical activities as the “Mushkulot” can be involved in emotional regulation, cognitive processing, and stress reduction through its rhythm, melody, and harmonic patterns [2] that enhances memory, attention and emotional well-being of learners.

This technology, by its nature, is based on the combination of musical, psychological, and aesthetic factors and provides for the development of the student's aesthetic perception through inner experiences and creative expression. In particular, the melodiousness, philosophical depth, and rhythmic complexity embodied in the Mushkulot section, along with deepening the student's musical thinking, enrich their artistic worldview and may become an important bridge between aesthetic education and physiological and mental well-being of students.



**Fig 1. Pedagogical approach aimed at improving the aesthetic culture of students**

A personality-oriented approach is a pedagogical principle based on a deep study of the student's individuality, their psycho-emotional state, level of aesthetic perception, musical taste, and psychological needs. In this approach, each student is seen as a unique individual, and their inner world and aesthetic perception are harmonized through the means of musical art therapy.

The personality-oriented approach is recognized as one of the central principles of modern pedagogy [3]. It requires the organization of education and upbringing, considering the individual psychological characteristics, psycho-emotional state, and aesthetic needs of each student. This approach demonstrates its practical and therapeutic effectiveness, especially in music art therapy. In future, researchers may measure heart rate, brain signals, and stress levels to evaluate the therapeutic impact of music art therapy.

## **LITERATURE ANALYSIS AND METHODOLOGY**

The renowned psychologist K. Rogers[4], in his work "Client-Centered Therapy," emphasizes the importance of respecting each individual's inner world and creating conditions that allow for its development. This principle also serves as the basis for listening to the student, understanding him,

choosing appropriate musical means, and easing his emotional state through musical expression in musical art therapy [5].

V.V. Serikov [6] interprets the personality-oriented approach as a means of expanding the socio-aesthetic experience of the individual. In his opinion, the educational process should serve not only the transfer of knowledge, but also the cultural and aesthetic development of the individual. Musical art therapy is a kind of positive tool in this regard, directly affecting the student's subtle emotions, revealing their aesthetic perception potential [7].

Diagnostic methods used in music therapy in the study of the individual state of the student - analysis of the listener's reactions, exercises for describing through music, techniques of self-expression (improvisation, visual description) - allow for the effective application of a personality-oriented approach [8].

This approach serves to form the student's individual attitude towards music, eliminate internal contradictions, and develop aesthetic taste. In particular, with the help of works with a complex structure and deep philosophical and aesthetic content, such as the "Mushkulot" section of Shashmaqom, the student develops the skills of conscious listening, analysis, and perception of the musical situation.

The "Mushkulot" section of Shashmaqom is particularly important in this process. Because its complex status structure, deep philosophical and aesthetic content, and narrow forms of emotional expression serve to awaken the inner experiences of the student and activate his aesthetic perception. in this process

An integrative approach is the organization of the educational process as a unified, harmonious system based on the knowledge of several disciplines - music, psychology, pedagogy, and cultural studies. This approach serves as an important methodological basis for the development of the aesthetic culture of students, especially in the field of musical art therapy.

The main goal of this approach is to ensure the comprehensive development of the student through a multidisciplinary approach to the process of musical education, the harmonious formation of his psycho-emotional, cultural-aesthetic, and cognitive potential.

The integrative approach is based on the combination of the following areas:

**Musical art** - aesthetic perception, cultivation of taste, emotional expression, the power of therapeutic influence.

**Psychology** - mental state of the individual, emotional balance, psychotherapeutic methods.

**Pedagogy** - educational technologies, methodology for developing the student's personality.

**Cultural studies** - national and universal values, musical heritage, historical and aesthetic context.

In particular, the integrative approach to the use of the "Mushkulot" section of Shashmaqom demonstrates its practical effectiveness. Because this section of maqom is rich not only in musical, but also in philosophical, religious-spiritual, and cultural-aesthetic layers, its in-depth study requires listening to, understanding, analyzing, feeling music, and connecting it with the student's personal experience.

The famous German pedagogue V. Klafki defined the integrative approach as "illuminating the general culture based on key concepts and teaching various interdisciplinary connections." On this basis, it is possible to comprehensively understand and develop the complex psychological and aesthetic state of the student through interdisciplinary integration in musical art therapy.[9]

N. L. Selivanova also expressed her opinion that the integrative approach "serves to harmonize the cultural identity and emotional-intellectual development of the individual[10]."

The reflexive approach is the process of self-awareness, analysis of feelings, and reflection on experience. In pedagogical activity, this approach implies the student's ability to consciously evaluate their own practice, experiences, and didactic processes. Within the framework of musical art therapy, reflection provides emotional awareness through the experience of musical listening, analysis of the mental state, perception and expression of changes.

The main components of the reflexive approach are:

**1. Understanding inner experiences** - developing the student's ability to name their feelings, recognize them, and express them.

**2. Analysis of aesthetic impressions** - understanding the emotions arising from a musical work in a cultural, social, and personal context.

**3. Meta reflection** - self-observation through questions such as "Why did I perceive this music this way?", "Why did this particular part affect me?"

**4. Written or oral expressiveness** - the verbal or visual expression of the student's inner state after listening to music.

**Table 1: The skill Developmental impact of Maqom**

<b>Maqom Component</b>	<b>Brain Focus</b>	<b>Cognitive Skill Developed</b>
<b>Tasnif</b>	Parasympathetic region	Stress Regulation & Readiness for understanding inner experiences
<b>Tarje</b>	Prefrontal Cortex & Hippocampus	Pattern Recognition & Memory enhancement improving verbal and visual expression
<b>Gardun</b>	Cerebellum	Creative Flexibility through improved ability to consciously evaluate their own experiences
<b>Muhammas</b>	Limbic system	Sustained Attention & Logic for analysis of aesthetic impressions
<b>Saqiyl</b>	Vagus Nerve	Self-Reflection & Synthesis or Meta reflection

Reflection in Musical Art Therapy When listening to the "Mushkulot" section of Shashmaqom, students often enter into deep inner states as the music affects different brain regions evoking various neurobiological responses as described above in **Table 1**. In this case, through the musical melody, memories of the past are awakened, spiritual calmness or internal conflicts arise, and subconscious emotions emerge.

Musical art therapy is an important tool for enriching the inner world of students, helping them achieve mental stability, and developing aesthetic perception and musical thinking. In particular, the Mushkulot section of "Shashmaqom," with its complex structure, melodiousness, and deep philosophical content, has great potential in shaping not only musical but also spiritual and aesthetic education.

This technology is based on the following pedagogical approaches:

The purpose of the technology is to form the aesthetic culture of students using musical art therapy methods based on the Mushkulot section of "Shashmaqom." The main task of this technology is:

- analysis of complex works based on an art therapy approach.
- teaching the perception of aesthetic experiences through music.
- formation of musical thinking and aesthetic sensitivity in students.
- achieving stabilization of the psychological state through status.

The technology aimed at forming the aesthetic culture of students in the process of teaching the Mushkulot section of "Shashmaqom" using art therapy consists of diagnostic, preparatory, art-therapeutic integration, as well as stages of reflection and analysis.

At the diagnostic stage, students' musical aesthetic interests, musical taste, and psychological state are determined. The initial state is determined using surveys, interviews, and tests conducted with students. At the preparatory stage, students are given theoretical knowledge about "Shashmaqom" in the subject "Fundamentals of Maqom." In this case, students are introduced to the content, tones, and psychological impact of the works in the "Mushkulot" section. At the stage of art-therapeutic integration, excerpts from works such as "Tasnifi Buzruk" and "Mukhammasi Nasrullovi" from the Mushkulot section of "Shashmkom" are listened to, and an analysis of emotions is conducted. Along with listening to the maqom or performing it live, students express their individual feelings through visual arts, drama, or written commentary. Through group discussions, aesthetic evaluation and thinking are developed.

Stage of reflection and analysis. Students express their impressions of the maqom in written and oral form. Changes in the level of aesthetic thinking, musical experience, and mental stability are analyzed.

The organization of the educational process based on this technology leads to the following results. At the same time, students develop aesthetic taste, musical perception, and artistic thinking. Spiritual enrichment occurs through understanding the inner philosophy of the Mushkulot works of "Shashmaqom." Through art therapy, students develop mental stability, self-awareness, and self-expression skills. Through music, students develop a deep respect for national heritage.

Determining the state of students' aesthetic culture through conversation is an effective method that allows for a deep analysis of their perception of beauty, attitude towards art, views on aesthetic values and ideals. This process is carried out in the following stages:

Determining the aesthetic culture of students through the conversation method helps to understand their individual views and feelings more deeply. This, in turn, creates the possibility of more effective organization of the process of aesthetic education.

Introductory conversation is a form of communication aimed at determining the aesthetic views of students, their attitude towards art, and the level of perception of beauty.

The complexity of the problem section, its rhythmic and melodic structures, serves to focus students' attention, develop musical thinking, and deepen their aesthetic feelings. When combined with art therapy methods, this process allows revealing the inner world of students and assessing their aesthetic culture.

One of the effective ways to develop aesthetic culture is the gradual implementation of art-therapeutic influence on students by listening to the Mushkulot section of "Shashmaqom."

## **RESULTS AND DISCUSSION.**

Students listen to audio or video recordings of the Problem section. At this stage, it is important to draw their attention to the following:

- rhythmic and melodic structures.
- emotional expression in performance.
- mutual harmony of instruments.

Listening to complex maqom structures may engage dopaminergic reward pathways and parasympathetic activation, contributing to relaxation, emotional catharsis, and enhanced attentional control. This process increases students' musical perception and aesthetic sensitivity.

The art therapy approach is an effective method for improving the aesthetic culture of students by listening to or performing the Tasnif, Tarje, Gardun, Muxammas, and Saqil melodies of "Shashmaqom." This process serves to awaken the inner spiritual state of students, increase their interest in national

musical heritage, and develop their aesthetic perception. Each maqom section has its own emotional and aesthetic impact:

- **Tasnif:** Provides spiritual elevation with its solemn and uplifting tones. Steady and predictable rhythm of “Tasnif” may help to activate Parasympathetic region of brain and lowers heartbeat, creating a psychologically relaxed yet alert state of mind
- **Tarje:** Awakens thought and inner reflection. Repeated musical patterns of “Tarje” helps activating Prefrontal Cortex & Hippocampus awakening deep introspective thought and self-reflection.
- **Gardun:** Strengthens mental stability and a sense of balance. Circular rhythmic patterns of “Gardun” impact Cerebellum and help in synchronizing balance and timing pattern of brain thus provide mental stability.
- **Mukhammas:** Encourages creative thinking and emotional expression. Complex high-energy beats of “Muhammas” demands intense concentration. It may activate limbic system releasing reward chemicals as dopamine that boost emotional expression and brain’s ability to take cognitive challenge thus improving creative thought process in students.
- **Saqil:** Provides a sense of ease and spiritual freedom. Slow, heavy, and nature of relaxing “Saqiyil” stimulates the Vagus Nerve, lowers cortisol levels shifting the listener into a state of recovery from stress.

Hence, Overall, listening to or performing these melodies has a positive effect on the inner state of students and increases their aesthetic sensitivity.

Teaching the Mushkulot section of "Shashmaqom" through an art therapy approach is an innovative and effective pedagogical technology in the formation of students' aesthetic culture. This method serves to improve the psychological and emotional state of students, develop their creative thinking, and increase their respect for the national musical heritage.

The complex rhythmic and melodic structures of the problem section evoke deep emotional states in students. Conducting classes in a group format helps students exchange ideas and develop teamwork. It

is important to approach each student individually, considering their personal feelings. The combination of music and art in teaching the problem section deepens the aesthetic culture of students.

The Mushkulot section of "Shashmaqom" is a work that reflects the most complex and deep emotional layers of Uzbek classical musical art [11], and its listening or performance evokes various emotions in students. The art therapy approach is an effective tool for expressing and aesthetically analyzing these feelings, developing the aesthetic culture of students.

Listening to or performing the difficult section helps students feel inner problems, anxieties, complex and difficult tones of music. Some parts of the music inspire hope in students for future goodness. Some melodies of music help students feel inner peace and balance.

As described below is a **Table 2** of general pedagogical rules that should be followed based on the Mushkulot part of "Shashmaqom" in improving the aesthetic culture of students with the help of musical art therapy. The table is aimed at developing students' aesthetic worldview, increasing musical expressiveness, and forming conscious musical perception based on a therapeutic approach:

**Table 2: General rules for improving the aesthetic culture of students (based on the "Mushkulot" section)**

№	Rule name	Content	Form of implementation (examples)
1	Orientation of aesthetic perception	The ability to express beauty through the analysis of complex tones.	Analysis of the melody in the lesson, recording emotional impressions.
2	Activate musical consciousness	Development of musical thinking through understanding the direction of each maqom.	Comparative analysis, Interpretation of feelings expressed in difficulty.
3	Formation of a culture of external and internal listening	Developing skills in aesthetic approach to refrain and intonation.	Listening quietly, paying attention to the dramatic changes in tone.

4	Create therapeutic situations	Bringing emotional relief through difficult mental states.	Exercises for listening with closed eyes and expressing emotions.
5	Develop contextual understanding	Understanding aesthetic values through the study of historical and cultural sources.	Tasks related to the historical context, the history of the origin of maqom.
6	Enrich personal music experience	Creating opportunities for students to express their feelings through difficulty.	Reflective notes, audio diaries.
7	Cultivating respect for aesthetic values	Formation of a positive attitude towards national culture through the traditions of Shashmaqom.	Introduction to maqom performance, working in the mentor-student style.

Teaching the Mushkulot section of "Shashmaqom" through an art therapy approach is an effective pedagogical technology for the development of students' aesthetic culture. This approach serves to improve the psychological and emotional state of students, develop their creative thinking, and increase their respect for the national musical heritage.

The complex rhythmic and melodic structures of the complex section evoke deep emotional states in students. To identify these conditions, art-therapeutic activities such as listening, conversations, drawing, writing poetry, and expression through movement are used. These activities develop students' aesthetic perception and creative thinking. By conducting classes in a group format, applying an individual approach to each student, and combining music and art, it is possible to deepen the aesthetic culture of students. This technology is an effective tool in the formation of students' aesthetic culture and serves to increase their respect for the national musical heritage.

## Conclusion

Teaching the Mushkulot section of "Shashmaqom" based on musical art therapy serves as an effective tool in the formation of students' aesthetic culture. Through the melodiousness, rhythmic complexity,

and psycho-emotional richness of the problem, students are oriented towards the development of aesthetic perception, musical thinking, and inner sensitivity. The educational process, organized on the basis of an art-therapeutic approach, encourages students not only to acquire musical knowledge, but also to harmonize their inner spiritual state, aesthetically realize and express themselves. Thus, the proposed model represents not only a pedagogical innovation but also a neuropsychologically grounded approach that aligns aesthetic education with emotional health and cognitive development.”

This technology strengthens students' interest in the national musical heritage, educates them on the basis of aesthetic values, and serves the formation of a harmoniously developed personality.

Also, the introduction of integrated, interactive, and personality-oriented educational technologies increases the effectiveness of the pedagogical process and allows for a deeper formation of the aesthetic culture of students through "Mushkulot." As a result, the proposed technology is recommended as an effective pedagogical model that serves the comprehensive development of the student's personality based on the integration of modern music education and therapeutic approaches.

## References

- [1] V. N. Salimpoor, M. Benovoy, K. Larcher, A. Dagher, and R. J. Zatorre, “Anatomically distinct dopamine release during anticipation and experience of peak emotion to music,” *Nat. Neurosci.*, vol. 14, no. 2, pp. 257–262, 2011, doi: 10.1038/nn.2726.
- [2] M. V. Thoma, R. La Marca, R. Brönnimann, L. Finkel, U. Ehlert, and U. M. Nater, “The effect of music on the human stress response,” *PLoS ONE*, vol. 8, no. 8, p. e70156, 2013, doi: 10.1371/journal.pone.0070156.
- [3] S. F. Zdzinski, “Parental involvement, selected student attributes, and learning outcomes in instrumental music,” *J. Res. Music Educ.*, vol. 44, no. 1, pp. 34–48, 1996.
- [4] C. Rogers, *On Becoming a Person: A Therapist's View of Psychotherapy*. Houghton Mifflin, 1961.
- [5] M. C. Witty, “Marjorie Cross Witty,” *Argosy Univ. Chic.*, Jan. 2007.
- [6] V. V. Serikov, *Личностно-ориентированное образование: Размышления о проектируемой реальности*. Moscow: Logos, 1998.
- [7] C. A. Malchiodi, *Handbook of Art Therapy*, 2nd ed. Guilford Press, 2011.
- [8] P. Nordoff and C. Robbins, *Creative Music Therapy*. New York: John Day Company, 1977.
- [9] W. Klafki, *Neue Studien zur Bildungstheorie und Didaktik*. Weinheim: Beltz Verlag, 1996.
- [10] N. L. Selivanova, *Pedagogika integratsii: kontseptualnye osnovy*. Moskva: Pedagogika, 2002.
- [11] T. C. Levin and M. E. Döring, *The Hundred Thousand Fools of God: Musical Travels in Central Asia*. Indiana University Press, 1996.