Cognitive Determination of Musical Thinking and Musical Self-concept of Students and Musicians: Comparative Diagnostics, Aspects of Modeling and Forecasting

Iryna Mazur1, Tetiana Hrinchenko2, Olena Teplova2, Liudmyla Onofrichuk2, Olena Priadko3

1Khmelnytsky Humanitarian and Pedagogical Academy, Ukraine
2Vinnytsya Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine
3Kamianets-Podilskyi National Ivan Ohiienko University, Ukraine

Submitted: 2022-10-12. Revised: 2022-11-04. Accepted: 2022-12-06

Abstract

The article’s purpose is to define the cognitive determination of musical thinking and musical self-concept of students and musicians, considering the cognitive style of the individual, analytical-holistic thinking, and individual psychological abilities. The study applies the diagnostic technique for the cognitive style of individuality (T. Dudnikova, O. Volkova), analysis-holism scale (Choi, Koo, and Choi), Cattell test (16PF - C), musical thinking questionnaire developed by authors (I. Mazur, T. Hrinchenko, O. Teplova, L. Onofrichuk, O. Priadko). The study presents the first approbation of the musical thinking questionnaire developed by the authors, the integral indicator of which is measured on the following scales: emotional response to music, emotional-intonational (melodic) ear, harmonic ear for music, perceptual ear for music, musical-rhythmic sense, musical memory, performing emotionality, musical-creative imagination – insight into the essence of the musical image, musical-creative imagination – interpretation of the musical image, sense of the whole – sense of tempo-rhythm, sense of the whole – a sense of shape, sense of the whole – sense of style, sense of the logical development of the piece of music, cognitive activity, self-regulation, ability to work. The authors empirically determine that the musical thinking of students is based on advanced abilities in terms of the sense of the whole – the sense of shape, emotional response to music, and the sense of the logical development of the piece of music. Dominants in musicians’ musical thinking are the emotional response to music, musical-creative imagination – insight into the essence of the musical image, and high cognitive activity.

Keywords: musical thinking, musical self-concept, cognitive styles, analytical-holistic thinking


INTRODUCTION

Modern studies consider the problem of musical thinking as a socio-cognitive factor in regulating and determining the behavior of students and musicians with regard to musical practice (Schmidt, 2005; Spychiger et al., 2009; West, 2013). The study unifies the musical thinking of a musician-instrumentalist in musicologi-
cal and musical-teaching aspects (Suvorov & Nazar, 2017). The study emphasizes the necessity to stimulate and develop students’ cognitive capabilities by metaphorizing the content of the object of cognition and forming musical-aesthetical competence as a particular intuitive form of current knowledge (Hrynchuk & Burska, 2008). Active musical thinking is essential for implementing a performer’s creative ideas when working on a piece of music and embodying ideas on the concert stage (Zymoglyad, 2019).

Musical thinking is traditionally considered “a holistic, structured process, unified in its motivational, emotional, cognitive, and operational- and activity-related components. It contributes to the educational process optimization, the activation of students’ mental activity, their movement towards creative self-improvement in the course of education and upbringing” (Pikhtar, 2007). Accordingly, musical thinking should be considered an integral part of general thinking, reflecting and cognizing reality in specific musical representations. It is a known fact that musical information elements form the content of musical thinking and do not determine the main purpose of its activities but its functioning (Kremeshna, 2012).

Accordingly, it is possible to solve the problem of musical thinking modeling based on cognitive, personality, and activity-centered approaches. The cognitive-centered approach defines cognitive styles as characteristic self-consistent modes of functioning (Witkin et al., 1971). According to the personality-centered approach, cognitive styles are interpreted as personal traits (Gregorc, 1979). Finally, the activity-centered approach treats cognitive styles as a mediator of various forms and activities based on the dynamic and flexible conceptualization of the latter (Kolokolov, 2021; Dunn & Dunn, 1978; Renzulli & Smith, 1978; Schmeck, 1983). In their studies, Koptseva and Lozinskaya (2012) consider musical thinking as a cognitive activity for the intellectual operation of semantically advanced blocks in relation to musical material. The musical-artistic image and sign specificity of the piece of music assumes importance in this context. Notably, musical thinking has the following phenomenological functions: 1) epistemological, 2) ontological, 3) methodological, 4) communicative, 5) axiological, and 6) worldview.

The epistemological function of musical thinking involves exercising new ways for organizing spatiotemporal relations in the form of a musical-artistic image, alogical, irrational grounds of culture in the broad sense of the word. At the level of philosophical generalizations, musical thinking builds a connection between the active variability of human existence, abstract concepts, and laws describing this existence, referring us to the concept of “the bosom of culture” and revealing the inner essence of social processes. Finally, the ontological function of musical thinking views it as a reflection of the general harmony of the Universe and the expression of human content in a given sensual musical and artistic form.

The methodological function of musical thinking collides with prognostic and heuristic functions and relies on all previous experience in composing musical material. The communicative function of musical thinking implies the play of a particular semantic system, language and the ability to “decipher” the sign structure into universal meanings embedded in the piece of music. At the same time, musical thinking is the central mechanism that helps to understand the meaning of the piece of music and read it in the context of history, social reality, artistic culture, and public opinion. The phenomenon of musical communication acts as a form of renewal of sociocultural experience and transformation of consciousness and values of the individual. Consequently, musical thinking presents the mechanism of the communicative process being a means of communication, cognition, and creative development of the individual (Bulatova, 2016).

Since the historical evolution of musical instrumentation has close ties with the creative processes that occur in the
composition, performing arts, musicology, education, and the definition of professional communities, the axiological function of musical thinking involves mechanisms for the creation, preservation, and dissemination of cultural values (Kong, 2021; Velykodna et al., 2022). The worldview function of musical thinking maintains the ancient idea of music as the ideal of the Universe, a form of a higher order of human life (Koptseva & Zhukovsky, 2008). Musical thinking manifests at the level of composition, improvisation, performance, listening, writing, and analysis of pieces of music (Burnard, 2012; Kokotsaki & Newton, 2015). In their previous studies, the authors of this article describe musical thinking as an analytical and cognitive activity in the system of perception-analysis-interpretation of music and the artistic and creative process in performing cognition. The main form of musical thinking implies musical and auditory representations and their intonational aspect.

Musical thinking as an integral personal innovation suggests the existence of a musical self-concept, which L. Mawang, E. Kigen, and S. Mutweleli (2019) view as a structured system of connections between music and the self-concept. Accordingly, musical self-concept is under review as an awareness of musical competence based on the interpretation of one’s own experience. It is worth noting that the musical self-concept generalizes the system of beliefs about the musical abilities and potential of the individual (Hallam, 2010; Morin et al., 2016) formed within the educational process.

Given the issue under the study, the authors of this article appeal to the approach by C. Bennett and K. Sena Moore (2022) regarding the training of music teachers based on the ideas of norm-disrupting learning. This approach can act as a leading paradigm for the development of musical thinking since it problematizes and transcends previously known philosophies, pedagogical techniques, etc. The heuristic value of this approach is associated with its analytical and meta-analytical focus in relation to the development of new musical competencies.

The study aims to define the cognitive determination of musical thinking and musical self-concept of students and musicians, considering the cognitive style of the individual, analytical-holistic thinking, and individual psychological abilities. This study implies defining the models and hierarchy of components of musical thinking and the musical self-concept of students and musicians.

METHOD

The methodology of this study is based on the fact that the content of musical thinking is reflected in the following concepts: perception and determination of the meaning of the piece of music, perception and comprehension of the integrity of the musical process (musical and auditory representations and interpretations of acoustic impressions); information content; emotional and semantic image of the piece of music; interpersonal metacognition; individual intonation selection of the second level (intonation storage media); melodic idiom; rhythm; practical mental efforts; process and multilevel; individual creative orientation (originality of improvisation, melodic, rhythmic, harmonious, and stylistic priorities); reflective management and reflective modeling (activation of the properties of extensiveness, flexibility, originality, tonal and rhythmic images, and syntax).

The authors of this article conducted the study of the determination of musical thinking of students and musicians on the basis of Khmelnytsky Humanitarian and Pedagogical Academy, Vinnytsya Mykhailo Kotsiubynsky State Pedagogical University, and Kamianets-Podilskyi National Ivan Ohiienko University. The study implied the formation of two groups, namely, “Students” (n 86) and “Musicians” (n 75). The study involved the following techniques:

The diagnostic technique for the cognitive style of individuality (T. Dudniko-
va, O. Volkova) provided the empirical determination of the distribution of the following cognitive styles: poly dependence, poly independence, a narrow equivalence range, a broad equivalence range, flexibility of cognitive control, inflexibility of cognitive control, impulsivity, reflectivity, specific conceptualization, abstract conceptualization, tolerance to unrealistic experience, intolerance to unrealistic experience.

Analysis-holism scale (Choi, Koo and Choi, Analytic-holistic scale). The authors of this article used it to measure the analysis-holism of worldviews as one of the ways of interacting with the environment in terms of individual functional components. These functional components include a focus of attention, causal attribution, perception of changes, and tolerance to contradictions and correspond to the following sub-scales:

Subscale 1. The focus of attention. This parameter describes the tendency of a person to rely on the context, which absorbs them, analyzing various phenomena and social situations (holistic pole). It also distinguishes the tendency of a person to ignore the context and consider each phenomenon as independent and unrelated to others (analytical pole).

Subscale 2. Causal attribution. This scale determines the features of understanding the causes of actions and phenomena. The characteristic of the holistic pole is a tendency to look for causes of events and phenomena in the environment. The analytical pole tends to attribute the causes of events to a person’s internal disposition or the internal components of the phenomenon.

Subscale 3. Tolerance to contradictions. The characteristic of the holistic pole is the synthesis of contradictions into a single non-contradictory whole; thus, two contradictory points of view are perceived as something whole and capable of uniting into a unified whole in one way or another. It is typical for the analytical pole to understand contradictions from the standpoint of formal logic, i.e., when there are two contradictory judgments, one is always true, and the other is false.

Subscale 4. Perception of changes. The parameter describes the tendency to perceive events or phenomena as constant in time or changing linearly and unidirectionally (analytical pole) or non-linear and cyclical (holistic pole).

Cattell test (16PF - C) helped to assess the psychological abilities of the individual and individual-personal relations, summarized in the following groups:


Musical thinking questionnaire developed by authors (I. Mazur, T. Hrinchenko, O. Teplova, L. Onofrichuk, O. Priadko). In accordance with the questionnaire, the authors determined the following factors of musical thinking of the subjects: emotional response to music, emotional-international (melodic) ear, harmonic ear for music, perceptual ear for music, musical-rhythmic sense, musical memory, performing emotionality, musical-creative imagination – interpretation of the musical image, sense of the whole – sense of tempo-rhythm, sense of the whole – a sense of shape, sense of the whole – sense of style, sense of the whole – the sense of the logical development of the piece of music, cognitive activity, self-regulation, ability to work, musical thinking – integral indicator.

The authors applied mathematical and statistical methods, including STATISTICA (SPSS-28), to ensure the reliability of the main provisions and conclusions. These methods involve analysis of variance and multiple regression modeling. The basis of this study involves the basic prin-
ciples of the metacognitive and metatheoretical paradigm, the principles of genetic modeling (Maksymenko, 2017), and system-structural approaches (Rodina, 2017). Based on these provisions, the study provided for the analysis-holism of musical thinking concepts and their psychological modeling.

RESULT AND DISCUSSION

Results

According to the diagnostic technique for the cognitive style of individuality (T. Dudnikova, O. Volkova), the authors established differences in the development of cognitive styles as mental referents of musical thinking (Figure 1, Table 1). The study group of students mainly tends to the cognitive activity of poly independence type, while poly dependence is more inherent for musicians (F=28.770, p=<0.001). The narrowness of thinking activity is a characteristic of students, while musicians have a broad equivalence range of mental equivalents (F= 6.131, p=0.002). The study group of students predominantly equalizes details in cognitive activity, while musicians focus on relevant details (F= 25.373, p=<0.001). Consequently, students mostly tend to scan, while musicians focus on significant aspects in cognitive activity (F= 72.534, p=<.001).

According to the analysis-holism scale (Choi, Koo and Choi), the authors determined (Figure 2, Table 2) that a higher level of focus (F=16.765, p=<0.001) significantly differentiated students compared to musicians. Students also have a higher tolerance to contradictions that arise in the process of cognitive activity (F= 43.462, p=<0.001) and are more flexible when it comes to the perception of changes (F=12.824, p=<0.001). Analytical thinking is a characteristic of the studied group of students, while holistic thinking is inherent in the musicians (F=49.653, p=<0.001).

In the next step, the authors determined the personal profiles of the studied groups according to the Cattell test (16PF - C) (Figure 3, Table 3).

Table 1. Comparative analysis of the activity of cognitive styles of students and musicians

<table>
<thead>
<tr>
<th>Cognitive styles</th>
<th>Levine test for equality of vari-</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly independence – poly dependence</td>
<td></td>
<td>28.770</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Inflexible – flexible cognitive control</td>
<td></td>
<td>.389</td>
<td>.534</td>
</tr>
<tr>
<td>Narrowness – broadness of the equivalence range</td>
<td></td>
<td>6.131</td>
<td>.002</td>
</tr>
<tr>
<td>Tolerance – intolerance to unrealistic experience</td>
<td></td>
<td>.042</td>
<td>.837</td>
</tr>
<tr>
<td>Equalization – aggravation</td>
<td></td>
<td>25.373</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Focusing – scanning</td>
<td></td>
<td>72.534</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>
Figure 3. Distribution of personal and characterological properties of students and musicians

It is possible to state that emotional stability is a primary characteristic of the musicians studied, while emotional instability (F= 42.038, p=<0.001) is more inherent in students. The studied group of students tends more toward serenity, and anxiety is predominantly natural for musicians (F= 43.462, p=<0.001). Such personal property as awareness is inherent in musicians, while students possess a greater ignorance (F= 34.940, p=<0.001). Consequently, sensitivity is more natural for students, and musicians tend to be resilient (F= 31.575, p=<0.001). Notably, students are more practical compared to musicians (F=93.059, p=<0.001). At the same time, self-dependence predominantly characterizes musicians, and students tend to conformality (F= 27.149, p=<0.001), which probably explains their high tension
The musical thinking questionnaire developed by the authors (I. Mazur, T. Hrinchenko, O. Teplova, L. Onofrichuk, O. Priadko) makes it possible to note that musicians are distinct in their high level of skills (5-6 points) and development of musical thinking components as a whole. At the same time, students have an average level of the development of musical thinking components with a tendency to high in individual indicators (2.5-5 points). The results are presented in Figure 4 and Table 4.

Thus, the authors established the following factors of musical thinking of musicians studied were significantly higher compared to students: emotional-intonational (melodic) ear (t=-2.730, p=<.001), harmonic ear for music (t=-9.947, p=<.001), musical-rhythmic sense (t=-10.653, p=<.001), musical memory (t=-14.235, p=<.001), performing emotionality (t=-4.613, p=<.001), musical-creative imagination – insight into the essence of the musical image (t= -13.339, p=<.001), musical-creative imagination – interpretation of the musical image (t= -18.110, p=<.001), sense of the whole – sense of tempo-rhythm (t= -10.286, p=<.001), sense of the whole - sense of style (t= -10.557, p=<.001), sense of the whole - sense of the logical development of the piece of music (t= -11.764, p=<.001), cognitive activity (t=-6.466, p=<.001), self-regulation (t=18.757, p=<.001), ability to work (t=13.361, p=<.001), and an integral indicator of musical thinking (t= -44.062, p=<.001).

The results of multiple linear modeling (SPSS-28) made it possible to empirically determine the predictors of musical thinking, musical self-concept, and their leading components. Thus, the authors identified the following determinants of musical thinking of students of music specialties (Figure 5, Figure 6) and musicians (Figure 7, Figure 8).

The determined model shows that students’ musical thinking is conditioned by the sense of form (0.976), an adequate emotional response to music (0.944), and the sense of the whole, namely, the sense of the logical development of the piece of music (0.912). The following components of musical thinking also become important: perceptual ear for music (0.901), performing emotionality (0.892), the balance of emotional resilience and sensitivity (0.676), broad thinking (0.663), musical self-regulation (0.619), sense of the whole in music, namely, sense of tempo-rhythm (0.573) and personal radical nature (0.542).
Table 4. Comparative analysis of musical thinking components and its integral indicator in students and musicians

<table>
<thead>
<tr>
<th>t-criterion</th>
<th>t</th>
<th>degree of freedom</th>
<th>Significance One-sided p</th>
<th>Significance Double-sided p</th>
<th>Average difference</th>
<th>Root-mean-square deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus - Emotional response to music</td>
<td>-2.730</td>
<td>103</td>
<td>.004</td>
<td>.007</td>
<td>-.505102</td>
<td>.185008</td>
</tr>
<tr>
<td>Mus - Emotional-intонаl (melodic) ear</td>
<td>-4.801</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-.747449</td>
<td>.155692</td>
</tr>
<tr>
<td>Mus - Harmonic ear for music</td>
<td>-9.947</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-1.471939</td>
<td>.147977</td>
</tr>
<tr>
<td>Mus - Perceptual ear for music</td>
<td>-2.570</td>
<td>103</td>
<td>.006</td>
<td>.012</td>
<td>-.400510</td>
<td>.155838</td>
</tr>
<tr>
<td>Mus – Musical-rhythmic sense</td>
<td>-10.653</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-1.653061</td>
<td>.155177</td>
</tr>
<tr>
<td>Mus – Music memory</td>
<td>-14.235</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-2.076531</td>
<td>.145871</td>
</tr>
<tr>
<td>Mus – Performing emotionality</td>
<td>-4.613</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-1.025510</td>
<td>.222310</td>
</tr>
<tr>
<td>Mus - Musical-creative imagination – insight into the essence of the musical image</td>
<td>-13.339</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-2.028061</td>
<td>.152045</td>
</tr>
<tr>
<td>Mus - Musical-creative imagination – interpretation of the musical image</td>
<td>-18.110</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-2.701531</td>
<td>.149176</td>
</tr>
<tr>
<td>Mus – Sense of the whole – sense of tempo-rhythm</td>
<td>-10.286</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-1.392857</td>
<td>.135413</td>
</tr>
<tr>
<td>Mus - Sense of the whole – sense of shape</td>
<td>-10.779</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-2.094388</td>
<td>.194295</td>
</tr>
<tr>
<td>Mus - Sense of the whole – sense of style</td>
<td>-10.557</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-1.882653</td>
<td>.178331</td>
</tr>
<tr>
<td>Mus - Sense of the whole – sense of the logical development of the piece of music</td>
<td>-11.764</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-1.913265</td>
<td>.162632</td>
</tr>
<tr>
<td>Mus – Cognitive activity</td>
<td>-6.466</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-1.168367</td>
<td>.180696</td>
</tr>
<tr>
<td>Mus – Self-regulation</td>
<td>-18.757</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-2.844388</td>
<td>.151646</td>
</tr>
<tr>
<td>Mus – Ability to work</td>
<td>-13.361</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-2.117347</td>
<td>.158476</td>
</tr>
<tr>
<td>Muse – Musical thinking Thinking – integral indicator</td>
<td>-44.062</td>
<td>103</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>-1.626435</td>
<td>.036913</td>
</tr>
</tbody>
</table>
The obtained model shows that music-oriented and music-conditioned sensory-perceptual innovations play a crucial role in the structure of students’ musical thinking, including the sense of the whole – the sense of shape (1.235), the emotional response to music (0.875), and the sense of the logical development of the piece of music (0.711).

Notably, the crucial components of the hierarchy of musical thinking load the musicians have should include emotional response to music (0.934), musical-creative imagination – insight into the essence of the musical image (0.755), and cognitive activity (0.734).

Discussion
The analysis of the obtained results on the cognitive styles of the studied groups indicates the features of musicians’ thinking activity are the dominance of the whole, insufficient differentiation of parts, the inability to overcome the context, the indivisibility of individual signs from the background in the process of solving the thinking problem. These results complement the results of research on the understanding of cognitive perception in music by D. Deutsch, A. Gabrielson, J. Sloboda, et al. (2015). At the same time, students of music specialties show the ability to resist the influence of conflicting background signs while perceiving audiovisual forms and connections. The students also possess the ability to perceive the whole and isolate stimuli from the context. The above indicates musicians need to clarify the symbolic component of audiovisual music (Sloboda, 1985).

A broad equivalence range is a predominant characteristic of musicians’ thinking, which testifies to their ability to form several groups of large volumes from...
many objects. On the contrary, a narrow equivalence range is more inherent in students, which characterizes them as able to distinguish many groups with small volumes (Holodnaya, 2004). As for the studied students, a cognitive process of preserving the material in memory naturally implies simplifying it, losing details, and falling out of particular fragments. At the same time, musicians highlight and emphasize specific details of the material. Also, musicians can focus on the central details of information without getting distracted by obstacles that interfere with the task. Notably, the focus of attention of students is low; they cannot highlight important and secondary details or systematically analyze the material.

The authors have noticed the tendency of students to rely on the context, which absorbs them, analyzing various phenomena and social situations and considering each phenomenon as independent and unrelated to others (analytical pole). It is worth noting that the musical thinking and musical self-concept of students as a system are based on advanced abilities in terms of the sense of the whole – the sense of shape, emotional response to music, and the sense of the logical development of the piece of music. The foundations for these characteristics are the concepts of musical argumentation and interpretation (Slobooda, 2004).

Accordingly, the authors have established that dominants in the musical thinking of musicians are the ability to emotional response to music, musical-creative imagination – insight into the essence of the musical image, and high cognitive activity, which corresponds with the research by P. Juslin (2019). Such conclusions are of particular interest in connection with the studies by E. Winner (2018). According to these studies, people feel emotions due to music and can distinguish the emotions they feel in music from those triggered by music.

It is necessary to attribute the balance of the following continuums to the personal properties that determine the musical self-concept of students: “emotional resilience - emotional sensitivity,” “broad thinking – narrow thinking,” and “radicalism – conservatism.” Notably, these continuums play a crucial role in the formation of the adaptive capacity of thinking (Lytvynenko et al., 2020). At the same time, the significant personal properties that determine the musical self-concept of musicians are personal tension and the balance of such a continuum as “friendliness - aloofness.” These characteristics play a significant role in the formation of musical self-concept (Spychiger, 2017), musical identity (Elliott & Silverman, 2017), and the subjective well-being of musicians (Kong, 2021). Their connection with the integral indicator of musical thinking reveals the content of the musical self-concept of students (Nagorna, 2018).

The obtained results demonstrate the prospects for the formation of the following practical mental actions reflected in the process of musical thinking: the ability to determine the purpose of the musical phenomenon, the ability to find or creatively build tactics of relations arising in the process of interaction with subjects; the ability to produce a value-methodical strategy; the ability to assess the relevance, reliability, strength of the developed strategy and tactics of the relationship of the integral process of the musical phenomenon.

CONCLUSION

The authors consider musical thinking as a socio-cognitive factor in regulating and determining the behavior of students and musicians with regard to musical practice on the grounds of cognitive-centered, personality-centered, and activity-centered approaches. The musical self-concept of a musician mediates musical thinking as an integral personal innovation. It generalizes the system of beliefs about the musical abilities and potential of the individual formed within the educational process.

The study presents the musical thin-
king questionnaire developed by the authors, the integral indicator of which is measured on the following scales: emotional response to music, emotional-intonational (melodic) ear, harmonic ear for music, perceptual ear for music, musical-rhythmic sense, musical memory, performing emotionality, musical-creative imagination - insight into the essence of the musical image, musical-creative imagination - interpretation of the musical image, sense of the whole - sense of tempo-rhythm, sense of the whole - a sense of shape, sense of the whole - sense of style, sense of the whole - the sense of the logical development of the piece of music, cognitive activity, self-regulation, ability to work.

The authors empirically determine that the musical thinking of students is based on advanced abilities in terms of the sense of the whole – the sense of shape, emotional response to music, and the sense of the logical development of the piece of music. It is necessary to attribute the balance of the following continuums to the personal properties that determine the musical self-concept of students: “emotional resilience - emotional sensitivity,” “broad thinking – narrow thinking,” and “radicalism – conservatism.” Accordingly, the authors have established that dominants in the musical thinking of musicians are the ability to emotional response to music, musical-creative imagination – insight into the essence of the musical image, and high cognitive activity. At the same time, the significant personal properties that determine the musical self-concept of musicians are personal tension and the balance of such a continuum as “friendliness - aloofness.”

The prospects of the study are to develop a program for psychological optimization of the balance of such continuums as “emotional resilience - emotional sensitivity,” “broad thinking – narrow thinking,” “radicalism – conservatism,” the ability to differentiate parts, overcome the context, and separate signs from the background in the process of solving the musical task.

REFERENCES


Iryna Mazur et al., Cognitive Determination of Musical Thinking and Musical Self-concept

St. Petersburg: Publishing House “Piter”.


