



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

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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 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. 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

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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; Spsychiger et al., 2009; West, 2013). The study unifies the musical thinking of a musician-instrumentalist in musicologi-

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cal and musical-teaching aspects (Suvorov & Nazar, 2017). The study emphasizes the necessity to stimulate and develop students' cognitive capabilities by metaphors, forming musical-aesthetical competence as a particular intuitive form of current knowledge (Hrynychuk & 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 ma-

terial. 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, allogical, 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 Kotsiubynskyi State Pedagogical University, and Kamianets-Podilskyi National Ivan Ohienko 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:

1. Group of communicative abilities: A - friendliness, H - courage, E - dominance, L - suspicion, N - diplomacy, Q2 - self-dependence.
2. Group of intellectual abilities: B - intellectuality, M - dreaminess, N - diplomacy, Q1 - innovativeness.
3. Group of emotional abilities: C - emotional resilience, F - serenity, H - courage to social contacts, I - emotional sensitivity, O - anxiety, Q4 - tension.
4. Group of regulatory abilities: Q3 - self-discipline, G - moral normativity.

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).

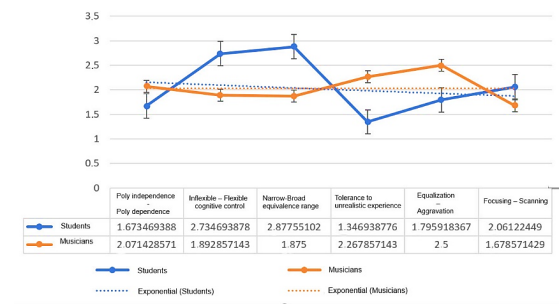


Figure 1. Distribution of cognitive styles of students and musicians

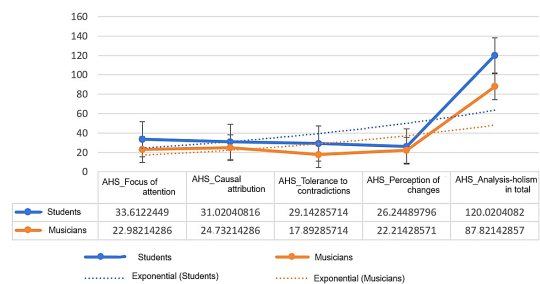


Figure 2. Distribution of analysis-holism of students and musicians

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

Cognitive styles	Levine test for equality of variances	
	F	p
Poly independence – poly dependence	28.770	<.001
Inflexible – flexible cognitive control	.389	.534
Narrowness – broadness of the equivalence range	6.131	.002
Tolerance – intolerance to unrealistic experience	.042	.837
Equalization – aggravation	25.373	<.001
Focusing – scanning	72.534	<.001

Table 2. Comparative analysis of analysis-holism of students and musicians

	Levine test for equality of variances	
	F	p
AHS – Focus of attention	16.765	<.001
AHS – Causal attribution	.112	.739
AHS – Tolerance to contradictions	43.462	<.001
AHS – Perception of changes	12.824	<.001
AHS – Total index of analysis-holism	49.653	<.001

Table 3. Comparative analysis of personal and characterological properties of students and musicians

	Levine test for equality of variances	
	F	p
PF_A - Friendliness - Aloofness	.793	.375
PF_B - Broad thinking – Narrow thinking	.917	.340
PF_C - Emotional resilience - Emotional sensitivity.	42.038	<.001
PF_E - Independence – Desire to please	.690	.408
PF_F - Serenity – Anxiety	55.352	<.001
PF_G - Awareness - Ignorance	34.940	<.001
PF_H - Courage – Timidness	.371	.544.
PF_I - Sensitivity – Resilience	31.575	<.001
PF_L - Suspicion - Credulity	1.990	.161
PF_M - Bohemian - Practical	93.059	<.001
PF_N - Sophistication – Simplicity	.690	.408
PF_O - Inclination to feel guilty - calm self-confidence	6.520	.012.
PF_Q1 - Radicalism - Conservatism	1.081	.301
PF_Q2 - Self-dependence – Conformality.	27.149	<.001
PF_Q3 - self-discipline	.946	.333
PF_Q4 - Tension	18.999	<.001

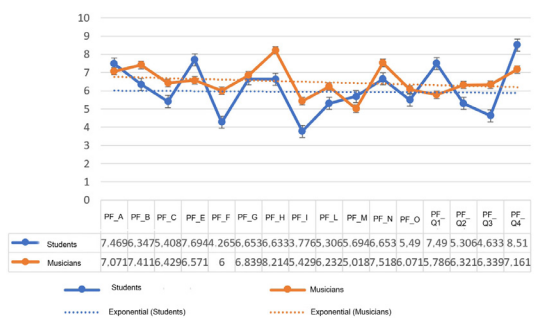


Figure 3. Distribution of personal and characterological properties of students and musicians

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

($F=18.999, p<0.001$).

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 shape ($t= -10.779, p<.001$), 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).

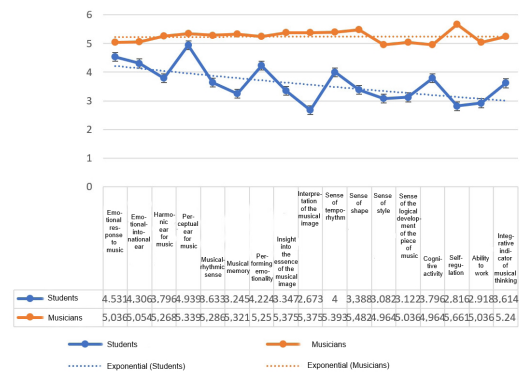


Figure 4. Distribution of musical thinking components and its integral indicator in students and musicians

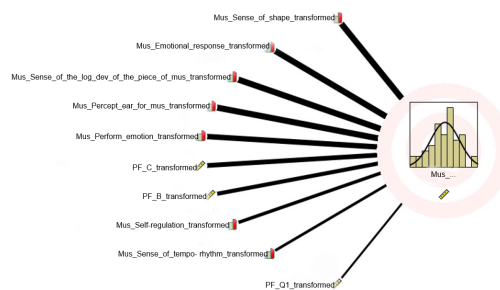


Figure 5. Model for the determination of musical thinking and musical self-concept of students

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

	t	degree of freedom	t-criterion		Average difference	Root-mean-square deviation
			Significance			
			One-sided p	Double-sided p		
Mus - Emotional response to music	-2.730	103	.004.	.007	-.505102	.185008
Mus - Emotional-intonational (melodic) ear	-4.801	103	<.001	<.001	-.747449	.155692
Mus - Harmonic ear for music	-9.947	103	<.001	<.001	-1.471939	.147977
Mus - Perceptual ear for music	-2.570	103	.006	.012.	-.400510	.155838
Mus - Musical-rhythmic sense	-10.653	103	<.001	<.001	-1.653061	.155177
Mus - Music memory	-14.235	103	<.001	<.001	-2.076531	.145871
Mus - Performing emotionality	-4.613	103	<.001	<.001	-1.025510	.222310
Mus - Musical-creative imagination - insight into the essence of the musical image	-13.339	103	<.001	<.001	-2.028061	.152045
Mus - Musical-creative imagination - interpretation of the musical image	-18.110	103	<.001	<.001	-2.701531	.149176
Mus - Sense of the whole - sense of tempo-rhythm	-10.286	103	<.001	<.001	-1.392857	.135413
Mus - Sense of the whole - sense of shape	-10.779	103	<.001	<.001	-2.094388	.194295
Mus - Sense of the whole - sense of style	-10.557	103	<.001	<.001	-1.882653	.178331
Mus - Sense of the whole - sense of the logical development of the piece of music	-11.764	103	<.001	<.001	-1.913265	.162632
Mus - Cognitive activity	-6.466	103	<.001	<.001	-1.168367	.180696
Mus - Self-regulation	-18.757	103	<.001	<.001	-2.844388	.151646
Mus - Ability to work	-13.361	103	<.001	<.001	-2.117347	.158476
Muse - Musical thinking Thinking - integral indicator	-44.062	103	<.001	<.001	-1.626435	.036913

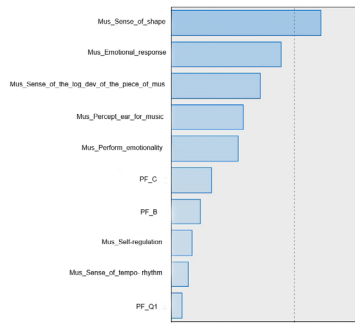


Figure 6. Hierarchy of musical thinking components and musical self-concept of students

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).

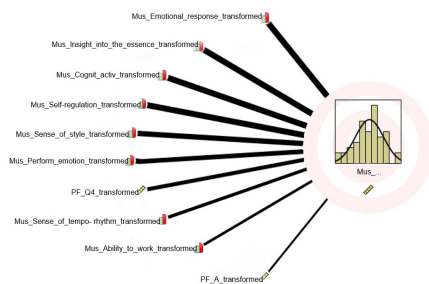


Figure 7. Model for the determination of musical thinking and musical self-concept of musicians

In order to determine musicians’ musical thinking, it is necessary to pay attention to its components that ensure a high level of development and level of professional skill. These components are as follows: emotional response to music (0.957), musical-creative imagination – insight into the essence of the musical image (0.944), cognitive activity (0.924), musical self-regulation (0.901), sense of the whole – sense of style (0.875), performing emotionality (0.864), tension (0.766), sense of the whole – sense of tempo-rhythm (0.643), ability to work (0.641), and friendliness (0.542).

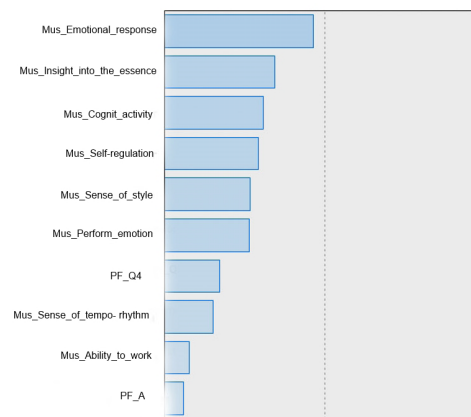


Figure 8. Hierarchy of musical thinking components and musical self-concept of musicians

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. Gabriellsson, 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 (Sloboda, 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.

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