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## **MUSICIANS' FREE ASSOCIATIONS ON THE GIVEN MUSIC CONCEPTS**

*Izvirni znanstveni članek / Original Scientific Article*

### **Abstract**

Free association is a mental connection or relation between thoughts, feelings, ideas or sensations. Association is an important and effective principle that is active in all instances of learning through accumulated experience. There is a considerable number of studies that deal with music stimuli provoking different associations. Therefore, association is the mechanism that connects music motif with extra musical description. Our aim was to induce associations in musicians, provoked by the given verbal music stimuli within group of musicians. We tested 184 musicians and used 30 verbal stimuli of music theory and history. The results show three categories: cognitive, emotional and sociological (CES). In cognitive associations we included frequently obtained metaphorical associations. In this paper we are interested in presenting the richness of metaphorical associations triggered by different music stimuli: *harp, cello, adagio, dolce, staccato, crescendo* and *ritenuto*. Metaphorical association stereotype is notable for *Mozart* and *piano*, while the identical or similar associations have been found for rhythmic and metric stimuli. There's a frequency in associating *3/4* as waltz, *7/8* as folk and *siciliana* as geographical origin. The domination of social associations for *rococo* and *jazz* was expected.

**Keywords:** associations, music terms, metaphors, verbal music stimuli, meaning in music

### **Izveček**

#### **Svobodne asociacije glasbenikov na dane glasbene koncepte**

Svobodne asociacije so mentalne povezave ali odnosi med mislimi, idejami ali občutji. Asociacije so pomemben in učinkovit princip, temelječ na zbranih izkušnjah, ki je dejaven pri vsakem učenju. Številne študije se ukvarjajo z glasbenimi spodbudami ki izzovejo različne asociacije. Asociacije so torej mehanizmi, ki povezujejo glasbeni motiv z dodatnim verbalnim glasbenim opisom. Cilj raziskave je bil z danimi verbalnimi spodbudami sprožiti asociacije pri različnih skupinah glasbenikov. Pri testiranju 184 glasbenikov smo uporabili 30 verbalnih spodbud s področij glasbene teorije in zgodovine. Rezultati so kazali tri kategorije asociacij: kognitivno, emocionalno in sociološko (CES). Med kognitivne asociacije smo vključili pogostokrat izražene metaforične zveze. V prispevku predstavljamo bogastvo metaforičnih asociacij, sproženih z različnimi glasbenimi pojmi, kot so *harfa, čelo, adagio, dolce, staccato, crescendo* in *ritenuto*. Razviden je metaforični asociativni stereotip med besedama *Mozart* in *klavir*. Identične in zelo podobne asociacije so bile izkazane pri ritmičnih in metričnih verbalnih spodbudah. *3/4* takt je bil pogostokrat asociiran z valčkom, *7/8* takt z ljudsko glasbo, *siciliana* pa z geografskim izvorom. Sociološke asociacije za *rokoko* in *jazz* so bile pričakovane.

**Ključne besede:** asociacije, glasbeni pojmi, metafore, verbalne glasbene spodbude, pomen v glasbi

## Associations and Meaning in Music

Meaning in music is a field which attracts a lot of attention of researchers and is an important theoretical base for our research. Since the same associations for specific music concepts have been used in continuity for over five centuries<sup>1</sup>, they have become a part of western culture. At the same time, associations have also become universal and have led to the creation of inherent associations between musical expression and emotion (Cooke, 1959). Some researchers equate emotions produced by music with musical meaning (Meyer, 1956; Cooke, 1959), while others do not view them within the context of meaning (Juslin and Sloboda, 2001).

Music causes emotion based on acoustic qualities and styles of instrument playing, individual state of mind of the listener, as well as the context under which music is performed and consumed (Scherer, 2001). Listeners often remember past emotional experiences, which are something that findings, concerning activation of the hippocampus while listening to music causing the feeling of nostalgia, try to address (Juslin and Västfjäll, 2008). Freud was the first to speak of emotions as an important factor which affects memory and free association (Jones, 1964). Following the trail of associations, we come to the root of experience and sensation which has been caused by the first sensation. And so, the musical piece which we listen to can remind us of an event or person from the past because associative processes enable us access to unconscious areas of our personality. Because of this, not every listener will react in the same way to the same music, nor will the same person always experience the same music in the same way (Meyer, 1956).

Many therapeutic techniques in psychology involve activities which resemble those from art. Associative thinking is one of those techniques. Beyond the therapeutic context, associations are mentioned for the first time in English philosopher John Locke's 1690 essay – *An Essay Concerning Human Understanding*, only to be accepted much later as a common psychological principle related to the phenomenon of memory and recollection. In learning theory, they represent a process of creating mental connections between various sensations, ideas, or memories in connection with similarity, subtlety or resemblance, but also on the basis of pleasure (Thorndike, 1931). Last but not least, associations represent an important and effective principle in the learning process because it encompasses accumulated experience and can be used to stimulate the learning process (Ebbinghaus, 1885).

The associative technique of learning often uses metaphors. Some scientists consider metaphors to be rooted in human experience and in turn they are also means to comprehension and organization of experience (Lakoff and Johnson, 2003). The description and experience of music is founded on concepts from non musical fields of human experience (Eimer and Timmers, 2010), and so the connection between musical and visual context has been thoroughly researched (Cook, 1998). Hanslick has written that

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<sup>1</sup> In the period between 1400 and 1950, positive emotions were connected to major chords, and negative emotions to minor chords (see Meyer, 1953).

the metaphor is the only solution when describing sound and motion and that musical analysis is, in its essence, metaphorical (Hanslick, 1957). Musical meaning is hidden in metaphors (Zbikowski, 2002), and so metaphorization appears as a basic mechanism in the conceptualization of musical elements (Antović et al., 2016).

When talking about verbal description of the musical experience, we risk relying on two different approaches: some scientists think that language is insufficient to explain the essence of musical expression, meaning and experience (Karbusicky, 1987), while others claim that words themselves transform hidden meaning into musical meaning (Cook, 1998). The use of verbal information within the listening capabilities is present in many methodological studies. The verbal description of music offers researchers rich sources of information (Haack, 1992): "Language communication is based on many musical elements, while the description of personal reactions caused by music is located in the center of learning music and the musical experience" (Flowers, 2002: 45). Sometimes, researchers group and systematize received verbal responses from subjects, and received affective and associative responses could be used as ideas for creating new instructions for music listening (Johnson, 2003). In contemporary theory, the meaning of associations which have been received can be intra-musical, musical genetic and extra-musical (Koelsch, 2013), and can so be perceived in the context of inherent and arbitrary associations (Antović et al., 2016). With inherent meaning, the symbol and marker belong to music (Green, 2010), so understanding of the inherent meaning depends on the listeners' competence.

### **Research Methodology**

Differing from investigations which deal with associations caused by *music stimuli* (listening to music), in literature we do not find investigations which examine free associations received from *verbal stimuli* which relate to *music concepts*. In this very fact we found the inspiration for our research. Considering that the quality and type of associations in this case are significantly affected by the listeners' competence, the specimens of this research could only have been musicians (professionals and amateurs). Therefore, testing non musical subjects would result in a completely different quality and reach of associations which, for us, would not be relevant in the given context of research.<sup>2</sup>

The *aim* of the research was to affirm the array, richness and nature of associations on music concepts in different groups of musicians.

### **Procedure**

The act of investigation encompassed free association test subjects with a total of 30 proposed music concepts which were grouped in 6 areas: 1) Musical instruments (piano, guitar, saxophone, harp, cello), 2) Rhythm and time signature (3/4, syncope, 7/8,

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<sup>2</sup> The potential width and quality of associations of the non musicians could be the subject of a different focus in the research of free associations which would, by its nature, belong to the field of semiotics (general theory of meaning).

siciliana), 3) Composers (Mozart, Vivaldi, Tchaikovsky, Mokranjac, Schoenberg), 4) Style (Rococo, Classical, Romanticism, Jazz, Expressionism), 5) Tempo (adagio, ritenuto), character (dolce) dynamics (crescendo), articulation (staccato), 6) shape – form (sonata, scherzo, concert, solo song, symphony).

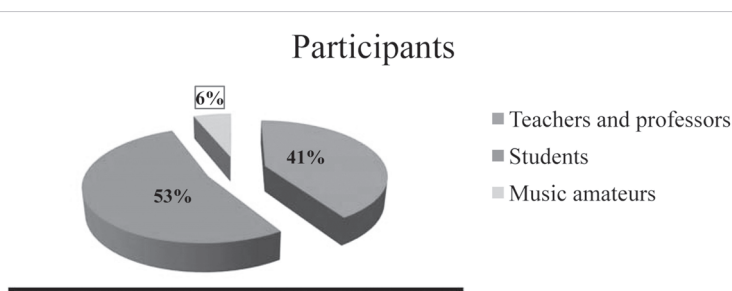
Researchers wrote down the answers of the subjects from the List of Free Associations, which contained the given music concepts, category of subjects (see specimen catalog), as well as their answers. The examination was released between October and December of 2015.

The associations that were received were put to quantitative and qualitative analysis. Considering the exploratory nature of this research, the data treatment pertained only to frequencies. The quantitative analysis pertained to the total number of *various associations* on a given music concept, as well as the *number of subjects* which had the *same association* to the given concept. In the qualitative analysis we grouped the delivered associations into three basic categories, based on the theoretical model we proposed. Having considered the received answers from the subjects, we decided to group them into three basic categories: cognitive, emotional and sociologically conditioned associations (CES). This division stems from the nature of the music experience, which is by its characteristics, always a combination of cognitive, emotional and sociological components of the human experience. We assorted the received metaphorical associations into the group of cognitive associations, because they were previously determined by knowledge. Emotional associations are prompted by emotions caused by memories of music which correlates to verbal stimuli (up until now, emotions have been explored in connection to auditive music stimuli, see Juslin and Sloboda, 2001). Sociological associations have been culturally conditioned in advance.

### *Participants*

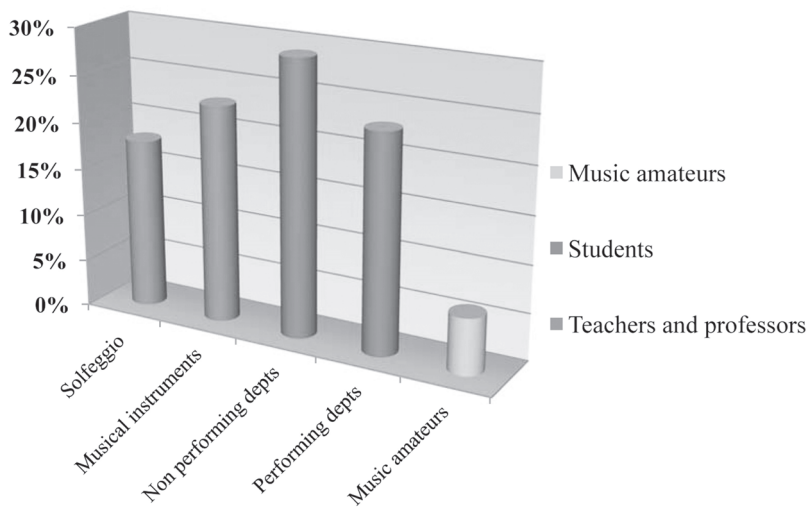
Having sampled a total of 184 musicians we have had 75 professors of different profiles on all levels of music education, 97 students from the Faculty of Music in Belgrade and 12 music amateurs, meaning self taught musicians-performers, without formal music education. The structure of the participants is located in Chart 1.

**Chart 1. Structure of participants**



The group of professional musicians consists of teachers and professors of solfeggio (33) and instrument teachers (42), and non performing students (54) (music education, music theory, musicology, ethnomusicology, composing) and students of the performance departments (43) (instrumental, jazz, conducting). The structure of tested subjects is shown in Chart 2.

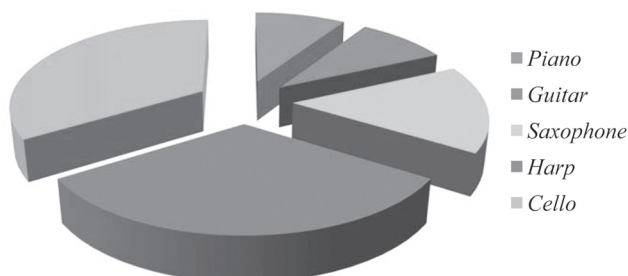
**Chart 2. Structure of examined subjects**



## Results

For the first group of music concepts, in which there are five musical instruments (*piano, guitar, saxophone, harp* and *cello*), cognitive associations are most often attained, with a lesser number of emotional and sociologically implied associations. It is interesting to emphasize the growing number of metaphorical responses in relation to the type of music instrument: piano and guitar got the least number of responses, while the *cello* and *harp* got the most metaphorical responses (Chart 3). The progression of metaphorical associations concerning different musical instruments can be viewed in Table 1.

**Chart 3. The procuration of metaphorical responses for music instrument**



**Table 1. Representation of metaphors for musical instruments**

<b>Number of delivered metaphors</b>	<b>Piano 9</b>	<b>Guitar 9</b>	<b>Saxophone 15</b>	<b>Harp 30</b>	<b>Cello 32</b>
	woman, elephant, I, height-depth, white-black, zebra, flower, crystals, love	woman, pear, Spain, skiing, dismal, warm, hole, gentle, freedom	man, sex, sexy, sensual, loneliness, gold, yellow, black, greasy, wood, wine glass, beak, alphabet, noise, Lisa Simpson	sea, lake, river, aquarium, swimming, woman, girl, fairy, siren, hair, angel, heaven, cherubs, psalms, church, fresco, divine, wealth, calm, never land, wind, sky, cloud, bird, Orpheus, lyre, Ancient, Ancient Greece, triangle, fan	woman, femininity, female body, body (4) <sup>3</sup> , pear, sex, subtle eroticism, passion, warm, big man, height, sky, depth (7), water, sorrow, mist (2), dark (2), livid, brown, soft, bear, elephant, snail, swan, tree, wine, wind, feather, nail, furniture, nasal congestion, boredom

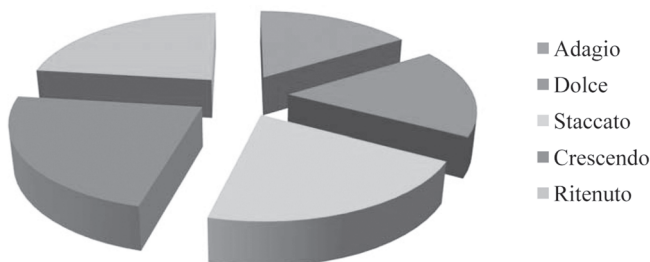
It is interesting that, in the answers of the questionees of different groups on music instrument concepts, we find associations to women (piano, guitar, harp, cello), while associations to men are only found in the saxophone term (sex, sexy, sensual), and the stimulus received from cello brings somewhat moderate sexual associations (femininity, the female body, sex, subtle eroticism, passion; Table 1).

In relation to this, we should mention investigations that deal with the relationships between musical instruments and gender. In one of them, stereotypes dealing with the relationship between gender and choice of musical instruments were investigated (Abeles and Porter, 1978). Certain instruments are experienced as male (for instance – trumpet, trombone and percussion instruments), and female (flute, violin and piano), while some are perceived as gender neutral (saxophone and cello; Crowe, 2010). Investigations deal with answering the question if and how the color (timbre) of an instrument effects the listeners emotional perception of assigned melodies (Hailstone et al., 2009), but also with the connection between the selection of musical instruments and timbre preferences, character traits and gender (Payne, 2010).

The largest number of metaphorical answers received is from the tempo and its micro-modifications (ritenuto), character (dolce), dynamics (crescendo) and articulation (staccato) (Chart 4). An inspection of delivered metaphorical associations can be found in Table 2.

<sup>3</sup> Numbers adjacent to associations indicate the number of subjects which associated to the same term.

**Chart 4. The amount of metaphorical responses regarding tempo, character, dynamics and articulation**



**Table 2: Metaphors regarding tempo, character, articulation and dynamics**

Number of metaphors	<i>Adagio</i> 27	<i>Dolce</i> 29	<i>Staccato</i> 35	<i>Crescendo</i> 38	<i>Ritenuto</i> 39
	sorrow (2) <sup>4</sup> , dream (2), composed, old age, ghastly, funeral procession, mourning day, melancholy, pain, calm sea, peace, lazy, turtle, flatland, tide, stretched out, pondering, meditation, timeless, car, middle, pink, blue, aristocratic, pizzeria	I, nice, love, baby, heart, sympathy, being in love, apple, carousel, childlike, little doll, ice cream, pie, candy, chocolate, sugar, coffee, soft, thin, load, emptiness, tenderness, motherly affection, elegant, clothes, gabbana, vita, dolce vita, perfume	I, in effect, direction, flickering, jump, jumping, hopping, bouncing, over leap, rope jumping, goat jumping, chopping, step, standing on toes, ouch-ouch hot, short, tiny, dot, sharp, imperious, cracking, jerking, happiness, joy, children, waking up, asphyxiation, bells, sizzle, gay, prodding, pins, porcupine, raindrops, rain hitting a drainpipe	stormy (2), strength, lift off, rush, tension, forward, Charge!, scream, neurotic, excitement, condensation, growth, passion, anxiety, enlargement, raising of dough, slide, gradual, turning the dial on the radio, energy, enlargement, lifting, running, angry woman, wind, alcohol, expression, wavy hair, wave, rough, tide, announcement, freedom, development, culmination, inspiration	delay (2), relief (2), dying, the end, tiredness, the fall, the dusk of life, disappearance, watering down, pause, halt, holding off, tightening, pausing, stop, a train slowing down, calming, steps, breathing, sleeping, rest, bed, journey to space, smell, sudden, abrupt, unnecessary, exaggeration, limping, tripping, ice skating, Vojvodina, width, breaking, getting ready, dimming, fear, life

4 The numbers in brackets next to associations indicate the number of subjects that associated the same term.

Expected and predictable associations in our research have been acquired for stimuli which are connected to the second group of concepts – meter and rhythm. The waltz was the most common answer for the 3/4 concept. The 7/8 time received the largest amount of answers which point to geographical descendancy – Macedonia, Balkans, Kosovo, Southern Serbia, Vranje, Niš and so on, as well as belonging to an ethno or folk sound. Italy, Sicily, pizza, spaghetti and so on, were the largest amount answers for the term *siciliana*. The term *upbeat* most often was associated to: inhaled breath, breath or air, as well as breathing, strange breathing, suffocation, time, waiting, immediately, a swing, flight, takeoff, bird, preparation, greeting, oops, ugh, tennis, work out, step, pounce, exclamation mark, ledge. *Syncope* resulted in metaphorical answers among the questionees, such as: stone, lady, drama, gondola, footstep, extension, leap, spiral, shorter leg, hiccups, arrhythmia, chopped, apple, hoe, rest, Hungary, Africa. At the same time, this group of concepts resulted in the least metaphorical associations.

The associations concerning composers are dominated by mainly conventional metaphorical associations: *Mozart* – balls, wig, hair, child, heavens, Vienna, Salzburg, Austria. The least conventional and unusual – more individual – metaphors relating to *Tchaikovsky* – blue, fear, suffering, sulking, darkness, night, snow, stairs, porcelain tea set. Styles of music, as stimuli, produced the most sociologically conditioned associations. *Rococo* is in the lead here – cleavage, powder, dress, pantaloons, wig, lace, declamatory, kitsch, artificial, costumed movies, ballerinas, cake, flower, pearl, bird, saloon, parrot, the sound of a kiss (a very rare onomatopoeic answer), furniture, cathedral, building, baroque, tragedy, stone (we assume this is a metaphor which is conditioned with the translation from the English word *rock*). The most common associations with *jazz* are also sociologically conditioned: blacks, party, club, smoke, night, life, freedom, Statue of Liberty, challenge, but also boredom.

Among the answers to the given music concepts which pertain to shape and form (*sonata*, *scherzo*, *concert*, *lied*, *symphony*), the most metaphorical answers were received for the term *scherzo*: violet, dress, grasshopper, turn, speed, devilish, impertinence, addition, pepper, croqui, arlecine, joke, jest, witty, funny, good mood, hanging out, toys, but also a forced joke and – everything but a joke. The term *concert* did not produce a large number of metaphorical answers among the questionees. They responded mostly with sociologically conditioned responses, probably duo to the doubly meaning of this term: Kolarac<sup>5</sup>, smell of the tree at Kolarac, elegant attire, tuxedo, black shoes, dismay and so on.

## Conclusion

The abundance of received material on the basis of the results offers possibilities for many analysis and deeper investigations. However, the authors of this investigation were, at this moment, much more interested in displaying the received metaphorical associations.

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<sup>5</sup> A famous concert hall in Belgrade, Serbia.



Metaphors are frequently used in education to explain a concept, assist in the analysis of data, aid in the understanding of new ideas and for clarifying complex systems. Teachers naturally use metaphors to make new and unfamiliar concepts more meaningful to learners by connecting what is already known to what is being learned. According to Conceptual Metaphor Theory (CMT; Lakoff & Johnson, 1980), metaphors consist of mappings between a concrete, source domain and a more abstract, target domain. They are, accordingly, one of the best ways to examine how people conceptualize experiences, things and events in music.

The amplification of metaphorical association has been established in the answers to verbal stimuli of *harp* and *cello* (Table 1 and Chart 3). The answers often implicated that musicians identify with their instruments, they personify them – give them traits, a look and shape of a human: a woman is a common association for the *piano*, *guitar*, *harp*, *cello*, while the *saxophone* is associated with a man. Expected and conventional metaphors for stimuli were received, such as 3/4 (waltz), 7/8 and *siciliana* (answers for these two terms are most often related to their geographical background). Frequent occurrences of sociological metaphors were noticed in the answers of the questionees concerning stimuli such as *jazz* and *rococo*, while a stereotype of metaphorical associations was observed in the answers to verbal stimuli *piano* and *Mozart*. The largest number of metaphorical associations was received for music terms which relate to tempo, character, articulation and dynamics (Table 2). We assume that the reason for such a result is the possible relation of these terms with a particular movement which can be found in everyday human activity (Giordano et al., 2014). The opposite case can be noticed in the relationship with the interpretative (non)maturity of the stimulus *scherzo*: the range of associations goes from “joke” to “forced joke”, as well as “prank” to “all but prank”. An amplified ego was noticed in a small number of questionees in the answer to the verbal stimuli *piano* and *concert* (“me”, “that’s me”). Finally, regardless of the small number of tested amateur musicians, a more expressed metaphorical association was noticed compared to the students.

Interestingly, a small number of onomatopoeic responses was received (ouch-ouch hot, the drumming of rain on a drain, the sound of a kiss), because it may be possible that an onomatopoeia is not relevant to the formation of meaning (see Antović et al., 2016). No physically conditioned association was received (such as, for instance – shivering, see Lerdahl and Jackendoff, 1983), probably because questionees were given verbal, and not concrete music stimuli. The aggravated verbalization of two professional performers was most probably created due to their primary emotional experience of music. Only a few questionees expressed anxiety with free associations, believing that their answers would be “wrong”, “inappropriate” or that they would reveal some aspects of their personality.

## Implications

In a contemporary education, there is a change of focus from behavioral and cognitive paradigm to more humanistic one, which emphasizes the role of emotions in mental processing. This research enlightens the latter, since it explores associations that are

colored with emotions. It is important that music education begins with accenting the experience which music causes, so personal emotions caused by listening to and performing music should be discussed. Students need to go from understanding the material as presented to generating their own thoughts about it. The dominant school practice implies students as passive receivers of information that had been packaged and predigested by teachers and textbooks. But, learning is primarily an activity which arises from the personal experience and though the scientific systematization of human experience presents the highest attainment in the evolution of the mind of man. Learning becomes personally meaningful only if the educational process is a constant reorganization and transformation of experience. We assume education could grow only when combining past with present experiences in order to receive and understand future experiences.

The authors of this research assume that rich associative thinking, metaphoric associations and a personal relationship associating to music terms could create better music understanding. Thus the educational process should consist of social and emotional learning that is intimately linked with cognitive development. Or to put it another way, only cognitive activities combining social and emotional learning pave the way for better academic learning and make learning meaningful.

During the analysis of the results – verbal answers of the questionees based on the proposed music concepts, we received some insights which provide basis for future consideration of the problem of music concept, music theory, history and music education. Our idea for the future is that received verbal metaphors can be used to enhance motivation, attention and understanding through a particular form of associative thinking concerned with metaphorical reasoning. The logical consequence is the integrative learning that can involve usefully blending knowledge and skills from different disciplinary areas as a catalyst for teaching across curriculums. The ability to think broadly across disciplines is becoming an increasingly critical component of a quality 21<sup>st</sup> century education. Music may well be the most powerful and effective educational tool to meet this educational need, providing students with quality integrated learning opportunities.

The results of this research inspired the authors to think about the benefits of an integrative approach to learning music from early stages of education (Petrović and Milanković, 2013). This approach to learning involves the integration of auditive, visual, kinesthetic and a tactile way of learning, which would comply with the activation of all senses in perception and cognition of music. As the music experience moves from the right into the analytical intellectual left hemisphere, we think that all music terms and concepts, during the process of music education, should be introduced in the following order: sound › student as a recipient and emotional music processor › translation and re-connection of the emotional experience with the cognitive treatment (a phase of understanding and cognition) › participation of all modalities of senses in the reproduction of the experienced and learned (visual-spacial and tactile-kinesthetic sensory modalities). This approach, from experience to cognition, is not only important because it connects the hemispheres

and enhances their cooperation, but associative learning can induce stimulus-specific plasticity and drive their changes very early in sensory systems. Thereby, the associative thinking presents a possible method of teaching that could bridge school activities and life experiences of the child.

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## Povzetek

Prispevek uvodoma obravnava vlogo asociacij pri razumevanju glasbenih konceptov, pomena glasbe in emocij, ki jih sproža glasba. Asociativno mišljenje je obravnavano kot temeljni princip učenja. Uporablja se tudi kot psihološka terapevtska tehnika. Posameznik gradi asociacije na osnovi akumuliranih preteklih izkušenj. Pri asociativni tehniki učenja se vedno uporabljajo metafore. Hanslick (1957) je menil, da zvok in glasbeni potek lahko opišemo le metaforično in da je glasbena analiza v svojem bistvu metaforična. Tudi Zbikowski (2002) in Antović idr. (2016) pravita, da je glasbeni pomen skrit v metaforah in da osnovni mehanizem pri konceptualizaciji glasbenih elementov temelji na metaforiki.

V literaturi ne zasledimo raziskav, ki bi preučevale svobodne asociacije, sprožene z verbalnimi spodbudami: z glasbenimi koncepti in pojmi. V raziskavi, izvedeni od oktobra do decembra 2015, smo preučevali vrste in bogastvo asociacij ter njihovo naravo glede na akumulirane izkušnje pri različnih skupinah glasbenikov. Testiranih je bilo 184 oseb, med katerimi je bilo 75 profesorjev glasbe in 97 študentov glasbe s Fakultete za glasbo v Beogradu ter 12 glasbenih amaterjev. Uporabljen je bil test svobodnih asociacij, ki je vključeval 30 verbalnih spodbud – glasbenih pojmov in konceptov s šestih področij: 1. glasbeni inštrumenti; 2. ritem in taktovski načini; 3. skladatelji; 4. glasbeni stil in zvrst; 5. tempo, karakter, dinamika, artikulacija, 6. glasbena oblika. V raziskavi je bil uporabljen *Seznam svobodnih asociacij*, ki je vključeval dane glasbene pojme in koncepte z navedenih kategorij in ponujene odgovore. Zbrani povezani pojmi so bili obdelani s kvantitativno in kvalitativno analizo. Pri kvalitativni analizi so bile asociacije razvrščene v tri kategorije: kognitivno, emocionalno in sociološko.

Rezultati so pokazali bogastvo metaforičnih asociacij, sproženih z različnimi glasbenimi pojmovnimi spodbudami. Odgovori na verbalne spodbude, povezane z glasbenimi inštrumenti, so pokazali, da se glasbeniki identificirajo s svojimi inštrumenti. Pripisujejo jim človeške lastnosti, videz in obliko. Asociacija ženske je bila največkrat povezana s *klavirjem*, *kitaro*, *harfo* in *čelom*, asociacija moškega pa s *saksofonom*. V skladu s pričakovanji so bili tudi rezultati, povezani z metaforami, ki jih sprožajo *3/4 takt* (valček), *7/8 takt* (ljudska glasba, geografsko poreklo), *siciliana* (geografsko poreklo). Sociološke metafore so bile najpogosteje razvidne pri verbalnih stimulih, ki so se nanašali na glasbeno zvrst in stil (*jazz*, *rokoko*). Rezultati so potrdili metaforični asociativni stereotip med besedama *Mozart* in *klavir*. Največje število metaforičnih asociacij so sprožile verbalne spodbude, ki se nanašajo na tempo, značaj, artikulacijo in dinamiko.

Pri glasbenem pouku učitelji pogostokrat uporabljajo metafore za razlago glasbenih pojmov in konceptov, za analizo podatkov in kot pomoč učencem pri razumevanju kompleksnih sistemov glasbenega izražanja in novih idej. Učitelji prek asociacij povezujejo kar je že znano in usvojeno z novo in učencem neznano snovjo. V sklepnem delu prispevka so podani predlogi za implementacijo raziskovalnih rezultatov v pedagoško prakso.