Advances in Social Science, Education and Humanities Research, volume 322
2nd International Seminar on Education Research and Social Science (ISERSS 2019)

The Cognition of Music Elements in the Auditory Aesthetics of Music Education

Chao Song
Department of Music
Shaanxi Normal University
Xi'an, 710119, China

***Abstract*—Music is an auditory art. Music auditory sensation runs through the music education. The music education oriented by auditory aesthetic puts the sensation towards music elements at the first place. For teaching objects of varied levels with different cognitive characteristics, like preschool children, primary and secondary school students and college students, the auditory cognition is the beginning of music education. The auditory sensation towards different music elements will be shaped in score reading. That's the main channel to grasp the features of music elements. In the aesthetic activities of music education, it is worthy of efforts to actively explore the characteristics and value of music elements in the process of auditory cognition. At the same time, it should also arouse the attention of music educators.**

Keywords—music elements; music education; auditory sensation

I. INTRODUCTION

Music is an auditory art and music auditory sense runs through music education. The music education led by aesthetic hearing sense led cultivates the sense of each element in music at the very first beginning. The auditory sense of music elements is the first lesson in music education for students at all levels, no matter they are preschool children, primary and secondary school students or the undergraduates.

II. MUSIC ELEMENTS

A. The significance of music elements

Bennett Reimer pointed out in *A Philosophy of Music Education* that music education trains people's feeling that they response to inherent expressivity of the sound. Its most important role is to help students gradually increase the sensitiveness of music elements. The elements, such as melody, harmony, rhythm, timbre, texture and form are all objective, which can be identified, named, applied, created, and can be extracted and inserted. The auditory aesthetics of music education is firstly the perception of music elements.[1]

Pitch, rhythm, tempo, intensity, timbre, mode and tonality are all the primary elements in music. Among them, pitch plays an important role. The blends of horizontal pitch make up melody while the combination of vertical pitch constitutes interval and chord. And the mix of them gives rise to harmony, polyphony and texture.

Теплов, Б.М. had made an in-depth research on music auditory sensation and he held that the term in the broad sense referred to the pitch, timbre, and dynamic hearing while in narrow sense it only indicated pitch hearing.[2] It fully demonstrates the value of pitch hearing in music auditory sensation. If there were no pitch, the rhythm would be lack of vitality, timbre would lose the object of attachment, melody and harmony would get nowhere, and the music hearing would be nonsense.

B. The characteristics of music elements

This phenomenon of pitch in psychoacoustics shows people's instinctive reaction of auditory perception, and it is the first step for music learner to master matchup between pitch and syllable names for auditory perception. In discussion and application in music education, aural subjects can maximumly perceive the pitch with effective correspondence between the pitch and syllable names.

Pitch can bring auditory experience of varied degrees to people physically. The high pitch with a high frequency of vibration makes people excited, happy, active and positive, while the bass with few vibrations makes people suppressed, sad and gloomy. The high pitch is able to depict the nimble, agile movement while the bass reflects more frequently the inertia and awkwardness.

Rhythm originates from nature and life. Music rhythm refers to the organic integration of time units of the same or different lengths in specific sequence. In the first place, perception of music rhythm is a kind of physiological response, then a sort of corresponding concept, that is to say, fast rhythm makes people excited and the slow one relaxed. Showing remarkable dynamic feature, rhythm is a significant part of music components and a content which should be actively developed in music education. As Emile Jaques-Dalcroze said, the harmonious development of body and mind should be achieved and children's music instinct should be aroused with rhythm in music education.

The variation in tempo and intensity will also give people a different sense of space auditory psychological level. Long, slow, comfortable tempo brings people a sense of open space and makes them feel peaceful, quiet; short, fast, dense tempo brings them a narrow sense of space, and impatience, excitement. The different levels of intensity also bring the corresponding auditory experience. Strong sounds make people feel heavy and close and weak notes soft and distant.

Timbre is one of the main characteristics of sound. Because of the different components of sound, the differences in

quantity, quality and intensity of the overtones contained in it produce the characteristics of sound. Pure tones are considered warm, and mixed tones enthusiasm. The different timbre of different musical instruments will show different aesthetic appeals in different cultural backgrounds.

Various steps play different aesthetic roles in music modes, in which the tonic is sturdy, the dominant brilliant, the submediant dolente and the leading tone sensitive. And it's the same with tonality.

It is worth emphasizing that the music elements in auditory aesthetics do not exist in isolation. Instead, they always show the beauty that is highly generalized after being highly integrated.

III. The expression of music elements in auditory aesthetics

The music learning is basically based on the music element learning. The correspondence between the auditory experience and non-auditory experience formed by the music element in auditory aesthetics fully proves its remarkable performance.

In *Peter & the Wolf*, a symphony fairy tale created by Sergei·Sergeyevich·Prokofiev, Peter, grandpa, the wolf, cat, duck and bird are vividly portrayed with the organic integration of melody, interval, chord, mode, tonality and other elements of pitch. Music of Peter is played by the string instruments in the high range with macro tune, grandpa by the bassoon in the low range with repeat syllables and rests for the theme, the wolf by the French horn with minor second and diminished triad for discords, the cat by the clarinet with much martellato for a leggiero style, and the bird by the flute in the high range with appoggiaturas, grace notes and martellato for rapid and convoluting melody.

Ritter vom Steckenpferd, created by Robert Schumann, gives full expression to rhythm elements. Mainly relying on the clopped-clopped sound created by children riding cockhorses, the music presents audiences a whole picture of children wobbling and hopping with cockhorses by sudden fortes from upbeats and segmentation figure created by crossed rhythm of right and left hands. Instead of being determined by game scenes, aesthetics of this music is expressed by beat and rhythm, which can be captured then by people's auditory organ.

In Mussorgsky's *Two Polish Jews*, the swaggering arrogance of the rich Jews was illustrated by the powerful five levels tones, while the shuddering, groveling image of the poor Jews was shown by the soft high yet soft pitch, the repetition of a trill and its sinuous descending tone.

Smetana's *The Moldau* depicted the process by which the small stream makes the mighty Moldau. At the beginning, two clear running mountain springs are depicted by the flute with cold tune pulling up and then the clarinet joining in with warm tune downward. Meanwhile, the picture of blowing and splashing spray is vividly outlined by tinkling pizzicato from the violin and bright harmonic from the harp.

People can automatically match auditory aesthetic experience with the non-auditory one because of synesthesia psychology. A pure auditory experience limited to acoustic form does not exist since the synesthesia psychology of auditory aesthetics always correspond specific features of music elements to related modality. In the monograph Music and the World It Represents, author Zhou Haihong indicates 6 laws of synesthesia correspondence related to music auditory, each of which is tightly coupled with music elements' performance, including synesthesia with pitch, loudness, time, temporal variation rate and tension. [3] As is known to all, being non-semantic and non-visual, materiel making up music is abstract with its own particularity. However, music elements can be integrated to present visual and conceptual objects, transferring auditory feeling to mental experience with synesthesia as the intermediary agent, which refers to the feeling and reaction in a perceptual system triggered by the stimulation in another perceptual system. In auditory aesthetics, all responses between acoustic forms and people's mental activities are established based on features of pitch, intensity, timbre and other music elements.

IV. Auditory Cognition of music elements

A. Cognitive characteristics at different ages

The implementation of music education in pre-school, junior and senior high school and university should adhere to students' psychological quality as these stages. It is same to the emphasize of music elements.

Preschool is the sprouting period of children's physiological and psychological development, and also the critical period of laying the basic psychological structure of music. Preschool children's music aesthetic psychology, first of all, shows a strong instinctive reflex. Their physiological pleasure brought by melody, rhythm and other elements, is indeed an instinctive reflex. Modern typical foreign music education system for children like Emile Jaques-Dalcroze, Kodaly's music education system, Orff music education system, and Suzuki music education system, are closely combined with the psychological characteristics of children, to cultivate preschool children's aesthetic hearing ability from perspectives of pitch and rhythm. Children's volume range is small, so pitch training should focus on simple, small jumps of the single tone and smooth short melody. Rhythm training should take the constant, neat, uniform rhythm, and accompanied by rhythm recitation, posture and rhythmic movements. A good sense of rhythm can help aggregate music sound. Rhythmic recitation can cultivate a uniform sense of beat speed. The teaching goal of posture and rhythmic movements is to develop the sense of rhythm of the body, and develop the body's ability to perceive and express the subtle changes of strength, time and space. The change in speed can be shown by the stasis of the body, stride, walk and run, while the change in strength can be shown by the relaxation of the muscles.

Kodaly believes that only by experiencing themselves, can children learn to love music, and schools must undertake the task of developing their music experience.[4] Music reading and writing are the basic knowledge and skills, which can help children access more excellent works and help them acquire the real music experience. Schools should teach them how to read and write due to the fact that one can't understand music

without knowing the various elements of music. The most important task of music education lies in the systematic training of musical auditory sensation with acute discriminability. Music hearing must be developed from the reading and writing, otherwise music will become mysterious and elusive.

With the development of physiological and psychological level, the auditory aesthetics of primary and secondary school students has changed from self-entertainment to learning with consciousness and purposeless, and their creative ability has also developed significantly. Primary and secondary schools are the critical period for the development of music cognitive ability, meanwhile, music elements reading and writing practices are indispensable. The teaching and training content contain the pitch discrimination, melody memory, rhythm imitation and analysis, identification of different musical instrument timbre, the comprehensive perception of speed, strength and a number of factors. Only when students have the basic ability to apply the elements of music, can their access the platform to play their music talent into full play.

College students are generally with mature music psychology and strong abstract thinking ability. They possess both perceptual and rational understanding of music art. In most cases, they prefer to explore the nature and regularity of music art. They can quickly capture music elements from the large works, and can extract and insert at will with auditory psychology. As for these students, we can guide them to deeply understand the correspondence between music elements and synesthesia psychology, understand the creation of each element of polyphonic music, and rise from the acoustic perception of music elements to the rational understanding of modal activities and emotional experience, which is the advanced stage of music elements in auditory cognition.

B. Decomposition and integration in the process of score reading

Although the elements of music are only the brick and tile that constitutes the works of music, their value cannot be underestimated as they are the starting point of auditory cognition. What's more, score reading is the main way of auditory cognition of the element of music, and the main means to generate the image of music. It is said that the ability to read score fully reflects one's understanding of music and the cognition of music elements.

When reading music score, one will receive the symbols on the music score on brain through the visual cognition, and convert them into the information of music components such as pitch, rhythm, metre, tempo and melody by the brain, and then express them by reading. The key to score reading is not only the single-line reading, but more importantly, how to decompose and integrate the content in the process of reading, so that the music information interwoven on the score can form a three-dimensional music image in the auditory representation.

The auditory sense of music is the basis for effectively decomposing and integrating various music elements in the process of reading score. The sense relies on the auditory experience that is accumulated through long-term auditory training and stored in the human brain. When receiving the new sound, the brain will reproduce and correspond to the previously stored sound effect. The sore reading with inner auditory sense is not restricted to the music element on the book. One can construct the three-dimensional image portrayed by the expressivity of music element in the heart, realizing the music thinking.

The auditory cognition of music is inseparable from memory which is the important part of the cognitive process, for memorizing, keeping and recalling information. Music memory can be formed by memorizing symbols on music sheet. These symbols carry all kinds of music elements that can be extracted and put into use at any time. The symbols memorized thus become the materials that one can imagine. The material will change with the new sound stimulation, auditory imagination activities also began to decompose, mix and integrate the music information memorized to produce new music imagination materials.

Even the ephemeral sound is organically composed of several music elements, such as melody formed horizontally by the pitch, harmony formed vertically, polyphony generated vertically and crosswise, etc. To disaggregate and integrate these elements, auditory cognition is indispensable, as well as effective cognitive strategies and approaches.

V. CONCLUSION

As a kind of emotional art, the extension of the sound in time aims to improve the emotional experience of the subject. The variations in music elements like the pitch, rhythm, intensity, and color jointly describe a beautiful picture, leaving a space for listeners to wonder. The important role of music elements is unshakable. Aesthetic activities in music education should start from the separation of music elements, that is, in the cognitive process of reading, music elements can be extracted and inserted randomly from works at the auditory level, so as to realize the appeal of auditory aesthetics.

The auditory sensation towards music elements plays the important role in music education. Much of the attention need to be paid to the exploration on the characteristics and value of music elements. Meanwhile, it should also arouse the attention of music educators.

REFERENCES

[1] Bennett Reimer, A Philosophy of Music Education [M]. Beijing: People's Music Publishing House, 2003.

[2] Теплов, Б.М., Избрнные труды [M]. Beijing: People's Music Publishing House, 1990.

[3] Zhou Haihong. Music and the World It Represents [M]. Beijing: Central Conservatory of Music Press, 2004.

[4] Yang Limei. Kodaly Music Education Thought and Hungarian Music Education [M]. Shanghai: Shanghai Educational Publishing House, 2000.