

Investigation of the Understanding and Application of Musical Imagery in China University Music Students

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Abstract: This study compared the recognition and the usage of imagery among China university music students with different majors (i.e. instrument and vocal) to explore whether the different learning pathways may provide various influences on musicians' imagery creation. Eighty-six music students from Shandong University of Science and Technology were recruited as participants. Analysis of the questionnaires revealed that the term "musical imagery" had been commonly introduced to students mainly by their teachers rather than from books or the internet. In addition, instrumental students (both Western and Chinese styles) demonstrated more familiarity in recognizing and applying imagery within their practice and daily life than vocal students. In contrast, the Chinese traditional vocal students received the lowest scores among all questions within the questionnaires and presented less interest in employing imagery within their daily practice. Conclusively, this small-scale research provided a glance at the understanding of musical imagery among Chinese university students. It is expected to stimulate the China music psychology research community to pay closer attention to music imagery study for empirically exploring practical strategies and pedagogy for further benefiting music students and their studies.

1. Introduction

Musical imagery has been recognised as the multimodal mental representation (e.g. aural, visual, kinesthetic) of music even the direct sensory is absent. These phenomena can be emerged both intentionally (thinking about the performance before going on stage, rehearsing music ideas, composing the new music idea in mind, practising the music mentally without physical movement) and appearing involuntarily (thinking about the "happy birthday" songs).[1][2][3]

Researchers from Western music have discovered the positive efficacy of employing musical imagery in music performance. For example, in one of the first empirical investigations, Rubin-Rabson (1937) [4] discovered that by incorporating imagery alongside physical practice, elite pianists demonstrated improvements in the memorisation of more notes and better performance. Since then, a number of scholars have examined the enhancement when involving imagery within the practice to improve various aspects of music performance, such as improving learning effectiveness[5], enhancing body awareness[6][7], and reducing stage anxiety[8]. Moreover, Clark & Williamon (2011)[9] recommended that musical imagery as a means of enhancing techniques for musicians

needs to be regularly practised. However, to date, musical imagery-related research raised less attention in China, particularly the investigation of the understanding and the usage situation of musical imagery in Chinese university music students is significantly lacking. As music students at China universities are constructed by both western music study (e.g. bel canto singers, pianists, clarinets, violinists, and cellists) and Chinese traditional music study (e.g. Chinese folk song singers, Erhuist, Guzhengist, Pipa, Chinese flautist), to what extent may the different leaning pathway (i.e. Western and Chinese) influence the recognitions in terms of musical imagery is also worth exploring. In light of this, a survey is conducted that aims at exploring the meaning of musical imagery to China university music students (in this research, the music students from Shandong University of Science and Technology), their usage situation and its effectors while using.

2. Methods

2.1 Participants

This survey invited music students (n=86) with instrumentalists (Western instrument learning n=21, Chinese traditional instrument learning n=38) and vocalists (Bel Canto singer n=22, Chinese folksong singer n=5) from the Shandong University of Science and Technology Music Department. All participants were aged 16-22 and received musical training for over three years.

2.2 Materials

Participants were invited to fill out a questionnaire about their personal information (e.g. name, gender, age), musical background (e.g. with/without an absolute pitch, Western music learning or Chinese traditional music learning), the meaning of the term “musical imagery” translated into Chinese to them, and the imagery usage situation during their practice and performance. Additionally, the awareness of imagery content via various aspects (e.g. melody, harmony, articulation, rhythm, timbre, texture) will be rated by participants, and to answer how they use musical imagery in daily practice.

2.3 Procedure

The data was collected through the completion of questionnaires by participants from diverse learning paths, and analysed using a combination of SPSS analysis and descriptive interpretation. Comparisons were focused on four groups: Western instrumentalists, Chinese traditional instrumentalists, Bel canto singers and Chinese folk song singers.

3. Results

Participants were asked to indicate whether they had heard the term "musical imagery" before and where they had heard it. Then, students were tasked with defining the meaning of musical imagery by picking from the multiple-choice questions in Table 1; the frequency (i.e. never, sometimes, or always) of using imagery as a technique to facilitate daily practice was collected from participants (Table 2); and the awareness of components while experiencing musical imagery (Table 3).

Table 1: Understanding of the term “musical imagery.”

	%Instrumentalist (Western)	%Instrumentalist (Chinese Traditional)	%Vocalist (Bel Canto)	%Vocalist (Chinese Folk Song)
Hearing music in your head	25	38.9	30.6	5.6
Mental practice music in mind	34.2	31.6	23.7	10.5
Representing physical movements in mind	16.3	41.9	32.6	9.3
Preparing the coming music performance in mind	25	40	22.5	12.5
Composing music in mind without consciously controlling it	19.6	39.1	30.4	10.9
Reflecting images and emotions while hearing music	34.2	47.4	15.8	2.6

Table 2: Employing imagery as a technique to facilitate learning efficiency during previous practice

	%Instrumentalist (Western)	%Instrumentalist (Chinese Traditional)	%Vocalist (Bel Canto)	%Vocalist (Chinese Folk Song)
Never	0	65	25	10
Sometimes	34	42.6	17	6.4
Always	26.3	26.3	47.4	0

Table 3: Mean rating of awareness of music features when imagining music; ratings were made on a scale from 1-5, where 1= “not aware” and 5= “aware clearly”.

	Instrumentalist (Western)	Instrumentalist (Chinese Traditional)	Vocalist (Bel Canto)	Vocalist (Chinese Folk Song)
Pitch	5	4.2	4.2	3.2
Harmony	3.9	3.3	3.5	2.4
Tempo	4.4	3.7	4.3	2.4
Timber	4	3.6	4.2	2.2
Acrostics	4.2	3.8	4.1	3
Music form	3.9	3.2	3.9	2.2
Physical movements	3.9	4.1	3.2	2.8
Music score	3.5	3.9	3.9	2.2

Imagery has already been presented to 75.6% of Chinese music students, and the majority of the students (51.2% of students) first heard about the term "musical imagery" from their music teachers. None of the vocal students could remember hearing about the term "musical imagery" from the internet; however, 44.8% of the instrumental students could. Compared to other groups, Chinese folksong vocal students had the least familiarity with musical imagery (only 20% recalled the phrase from previous learning). In contrast, all instrumentalists (i.e. western music learners and Chinese traditional learners) have widely noticed the existence of musical imagery via various sources (e.g. the internet, books and teachers).

The majority of instrumental and vocal students agree that incorporating images into music practice improves memorization accuracy (81.4%) and enhances music comprehension and expressiveness (80.2%). However, fewer students (29%) selected imaging as an aiding strategy for physical practice in preventing physical damage. According to 66.3% of students, the most effective method for incorporating musical imagery into daily practice was reading the music score while listening to audio recordings/watching videos.

Regarding the question on the awareness of music features during imaging music was examined (Table 3), the Western instrumental students gained the highest total mean score across all components (32.8 out of 40), subsequent by male students (31.8), Bel canto vocal students (31.3),

students with absolute pitch (30.8), Chinese instrumental students (29.8), students without absolute pitch (29.2), female students (29) and Chinese folk song vocal students (20.4).

Data were also compared within different groups, including males/females, instrumentalists and vocalists, and those with/without an absolute pitch regarding the questions of recognising the possible efficacy of involving musical imagery in music practice and pre-performance preparation. The following groups are presented the highest scores within each agreement than others: (a) Deepen the musical understanding: 53.6% of male students, 52.3% of instrumentalists, and 62.3% of students with absolute pitch agreed; (b) Enhancing memorisation efficiency and accuracy: 60% of female students and 80% of students with absolute pitch agreed; (c) Reducing physical practice time and avoid over-practice injury: agreed with 100% instrumental students; (d) Improving body awareness (e.g. keyboard pressing, vocalisation and bowing): 71% of students with absolute pitch agreed; (e) Reducing anxiety before going on stage: 65.4% of female students and 88.4% of students with absolute pitch agree.

4. Discussion

This study has found that Chinese university music students have widely recognised the existence of musical imagery as a common phenomenon in their learning, performing, and everyday life. Although the extent to which students' imagery creation and development may be influenced by various factors, such as the learning length, training background, sensory awareness, musical task and individual ability. It appeared that instrumental students, especially Western instrumentalists, and students with absolute pitch have a more sensitive awareness of musical imagery and maintain a higher frequency and enthusiasm for using imagery alongside their practice routines.

Imagery has been agreed upon by students as a valuable tool for practice and performance. Within different stages of learning (i.e. beginning to learn the new music repertoire, just finished learning, can well-interpreted the music), the benefits of using musical imagery have been most approved by participants into (a) enhancing the music understanding and expressivity throughout all learning stages; (b) enhancing the body awareness for tackling technique difficulties during the learning stage; (c) improving memorization accuracy and efficiency; (d) reducing stage anxiety before going on stage and increasing concentration during playing. Furthermore, during the stage when music can be well-played, the majority of students will prefer applying imagery as a memory-securing approach to practice mentally without actually playing or singing the music.

Comparing the data collected from each study group revealed that varied music subjects (instrument or vocal) and diverse learning content (i.e. Western music or Chinese traditional music) greatly influence students' responses, comprehension, and application of musical imagery. In particular, data suggests that instrumental students held more clear awareness of the content of musical features reflected in the mind than vocal students. This phenomenon is likely caused by the fact that, at the student period, instrumental repertoire contains a larger number of notes, longer duration, and more technique challenges, which require students to devote more time to studying, practicing, and contemplating music. In addition, the research also found that students from the Western music learning pathway (both instrumentalists and Bel canto singers) have described their visualisation of music as being more detailed and comprehensive than students from the Chinese music learning pathway, particularly vocal students who majored in Chinese folk song singing, who received the lowest mean score across all questions. Except for the potential reason that the Chinese folk song vocalists have the smallest number of participants, the learning material (numbered musical notation), teaching approach, and the content of the music itself (e.g., non-lyrical labour chant, mountain song, field song) for Chinese music students may play significant roles in influencing the creation and development of their imagery as well.

Conclusively, the implication of this survey has been examined via positive feedback from participants. All participants agreed that this research inspired them to deepen their comprehension of mental music representations, encouraged them to investigate the imagery usage strategy during practice, and piqued their interest in further investigating musical imagery in a scientific and psychological setting. Although the existence of musical imagery in the everyday routines of Chinese music students has been revealed, the pedagogical and training approaches for teaching students how to manage their musical imagery have yet to be explored or spread. In light of this, additional research could investigate to which and what extent may different types of musical learning, teaching approaches, student musical ability, learning period, or learning habits influence musicians' musical imagery creation, and how music-specific imagery guidelines could be explored, and be maximally accepted by musicians of varying backgrounds and abilities in order to improve their learning, practicing, performance, and enjoyment of music.

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