

What does mental imagery mean to university music students and their professors?

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The *Investigating Musical Performance* research project was devised to explore how musicians develop their learning about performance in undergraduate, postgraduate, and wider community contexts. Analysis of questionnaire data from 264 respondents revealed that mental rehearsal was the least popular aspect of musical learning, but verbal data from case study interviews showed that student musicians used musical imagery in various ways and ascribed many meanings to the term. This paper, through a short, specially devised questionnaire, explores how undergraduate musicians at the University of York and their professors use musical imagery. Many reported using it for specific musical activities such as practice, composition, performance, and thinking music in the mind for pleasure, although it was not necessarily a developed skill. Because the benefits are significant, it is proposed that imagery work should become a more formal part of musical training rather than a peripheral part of musical experience.

Keywords: musical imagery; learning; students; professors

Musical imagery has been defined as “our mental capacity for imagining sound in the absence of a directly audible sound source” (Godøy and Jørgensen 2001). The experience may be manifest in multiple ways, including deliberate use (to rehearse musical ideas, to experience a musical work in one’s mind, to analyze and imagine a new score, or to compose) and non-deliberate use, such as hearing music in the mind as an involuntary experience. Although musical imagery has considerable value for instrumental and vocal learning, it seems to be neglected in many learning methods. It is rare to find mention of either imagery or mental rehearsal in instrumental tuition books, yet many eminent performers have advocated its use, including the pianists Horowitz and Rubinstein and the violinist Fritz

Kreisler. Rubin-Rabson (1937) discovered that mental rehearsal aids the memorization of music and that using mental rehearsal as well as physical practice was more productive than physical practice alone. A study at the Royal College of Music (Connolly 2002) examined the use of mental skills to enhance the performance of twelve Royal College of Music (RCM) students and found benefits including improved memory and confidence, greater connection with the music, mind, and body, and increased productivity in practice. This small-scale survey aims to discover how students and staff are using various aspects of musical imagery and forms a pilot study for further work comparing larger groups and different musical genres.

METHOD

Participants

This survey focuses on third-year music students (n=11), their lecturers (n=10), and instrumental and vocal teachers (n=4) at the University of York. All the students were aged 18-21; the staff age groups were as follows: 25-34 (n=1); 35-44 (n=3); 45-54 (n=5); 55-64 (n=5).

Materials

Participants were asked to complete a short questionnaire exploring aspects of their musical background, their involvement in composing and conducting, what the term “mental musical imagery” meant to them, and whether it was a formal part of their musical development. They were also asked to rate their awareness of various aspects when imagining music and given the opportunity to add their own comments on their use of imagery.

Procedure

Data was received from third-year students, lecturers, and instrumental/vocal teachers and was analyzed using SPSS and thematic analysis. Comparisons are made between the two main groups: third-year students and the staff (lecturers and instrumental/vocal teachers).

RESULTS

Respondents were asked to define what the term “musical mental imagery” meant to them by indicating their agreement (by ticking from a list) the statements shown in Table 1. Respondents were also asked to rate their awareness of elements when imagining music, as shown in Table 2.

Table 1. Definition of the term musical mental imagery.

	<i>% staff agreeing</i>	<i>% students agreeing</i>
Rehearsing music in your head	92.9	100.0
Rehearsing memorization of music	50.0	36.4
Rehearsing interpretative possibilities	57.1	54.5
Rehearsing physical movements in your mind	35.7	63.6
Visualizing a successful performance	42.9	81.8
Realizing your mind is playing its own soundtrack and you are not consciously controlling it	64.3	72.7

Table 2. Mean rating of awareness of elements when imagining music; ratings were made on a scale from 1-7, where 1="not at all aware" and 7="very aware."

	<i>Staff</i>	<i>Students</i>
Melody	6.50	6.64
Harmony	5.14	5.00
Articulation	5.64	5.18
Rhythm	6.29	6.18
Timbre	5.00	4.64
Texture	5.00	5.18
Acoustic	2.57	2.73
Intonation	4.71	4.36
Awareness of physical movements	4.36	4.27

Imagery use had been consciously developed by 69.2% of the staff and 45.5% of the students. Discussion of imagery with a teacher was recalled by 38.5% of the staff and 63.6% of the students. None of the students recalled references to imagery in tuition books for their instrument, although 23.1% of the staff could. When teaching, 42.9% of the staff (including all the instrumental/vocal teachers) and 27.3% of the students encouraged their pupils to use imagery.

Respondents were asked how often they used imagery (never, sometimes, or always) as a deliberate practice strategy and how often they would work on a new piece in their mind before beginning to play or sing it (Table 3).

Data was also examined to compare different groups: males/females, those with/without absolute pitch, instrumental teachers/non-teachers, composers/non-composers, and conductors/non-conductors. Results for the

Table 3. Use of imagery as a deliberate practice strategy and before playing a new piece.

	<i>Deliberate practice strategy</i>		<i>Before playing a new piece</i>	
	<i>% staff</i>	<i>% students</i>	<i>% staff</i>	<i>% students</i>
Never	15.4	9.1	23.1	27.3
Sometimes	53.8	81.8	69.2	63.6
Always	30.8	9.1	7.7	9.1

question defining musical imagery showed that the following groups had the highest agreement with each statement: (a) Rehearsing music in your head: 100% agreement from students, females, those with absolute pitch, non-composers, non-conductors, and instrumental teachers; (b) Rehearsing interpretative possibilities: 75% of those with absolute pitch and 75% of instrumental teachers agreed; (c) Rehearsing physical movements in your mind: 63% of students agreed; (d) Visualizing a successful performance, rehearsing memorization, and realizing your mind is playing its own soundtrack and you are not consciously controlling it: 100% of those with absolute pitch agreed. When the totals for all aspects were added, those with absolute pitch had the highest score: 475 of a possible 600. Instrumental teachers scored 450, students 409, composers 381.5, non-conductors 376.6, females 375, males 369.2, conductors 362.5, non-instrumental teachers 357, non-composers 355.5, those without absolute pitch 352.4, and staff 342.9.

When data for the question looking at the awareness of musical elements when imagining music was examined, the instrumental teachers had the highest total mean score across all elements (50 out of a possible 63), followed by those with absolute pitch (48.25), females (46.42), staff (45.21), non-conductors (44.88), composers (44.78), conductors (44.53), students (44.18), those without absolute pitch (44.10), non-instrumental teachers (43.51), non-composers (43.46), and males (43.08). The highest-scoring groups for both questions were the instrumental teachers and those with absolute pitch. Factors such as the age when an instrument was started, number of hours per week spent playing or listening to music, and high self-rating of aural skills did not have significance on the scores for the definition of musical imagery or for the awareness of elements when imagining music.

DISCUSSION

Musical imagery has multiple applications and each individual has a unique approach to their use of it, depending on factors including their background, training, personality, sensory preferences, and the musical task with which

they are engaging. It would appear that those with absolute pitch and instrumental/vocal teachers have the highest use of imagery. Thematic analysis of qualitative data from the questionnaire allows a more detailed perspective on the use of imagery from this sample.

Imagery was found to be a useful practice tool, with the added benefits that memorization was quicker and more reliable and that it aided interpretation. The advantages of using mental rehearsal to avoid problems resulting from physical practice were mentioned by many, and it produced a better overall preparation for performance as it led to a greater understanding of musical aspects, such as harmonic and structural elements, and coordinating one part with another.

Instrumental and vocal teachers attached considerable value to imagery, using it to aid students in technical understanding, interpretation, and pre-performance consolidation, and students described examples of it in lessons they gave and received. Composers were particularly enthusiastic about imagery, and staff composers and conductors mentioned its importance to them in being able to assess scores. Conductors also mentioned its use in creating personal and individual musical interpretations. Further uses included manipulating visual and verbal imagery associated with music, feeling rhythms, thinking through a piece of music for fun, and using imagery to develop personal connection with the music. Many of the staff had consciously developed their musical imagery by imagining music and comparing it with a recording or with the passage played on a piano, whereas students took it for granted as a peripheral presence and felt it might develop inevitably with increased musical contact.

Staff comments on the importance of mental imagery/rehearsal as a tool in musical learning included: (a) holistic awareness of its overall importance, its creative and musical benefits; (b) its importance in healthy physical practice; and (c) its use in developing a wider musical understanding. Students recognized its value for: (a) awareness of the importance of the mind in performing and learning; (b) its use in consolidation of musical learning and the promotion of more advanced musical learning; and (c) awareness of the creative role it can play. Staff use it to a greater extent than students for composition, for general understanding of music, including memorization, and are more likely to have consciously developed their ability to use it. It could be suggested that in some cases, shorter playing hours could be compensated for by greater use of imagery. Students use imagery more than staff for practice, rehearsing physical movements, and for visualization of performance, presumably because they are more engaged with the process of learning an instrument.

Imagery has considerable benefits for all kinds of musical activities and is significant for the understanding of effective practice and performance. Further research could determine whether different types of musical training and the time spent playing or listening to music are important factors, and how we develop the ability to hear music in our heads. Although imagery use might develop inevitably through increased musical contact, musical skills could be further enhanced by a more conscious awareness and application of imagery, and should be a more deliberate part of musical teaching and learning.

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