

Ear Training for Professionals

The Psychological and Didactic Aspect

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Abstract—The author believes that solfeggio lessons for ear training of professionals will be more effective if teaching is based on the achievements of related sciences, first of all, psychology and didactics. This article will review psychological and didactic aspects of ear training for professionals, in connection with cognitive work organized in solfeggio classes, and building musical and aural notions.

Keywords—ear training; activity; aptitude; musical thinking; attitude; perception; retention; analysis; conceptual unit; music and aural notion

I. INTRODUCTION

A trained ear is a basic professional aptitude. It is developed as a result of any musical activity, but its targeted development occurs only at solfeggio lessons. Solfeggio is the only subject on the curriculum aiming, among other things, to train and develop the musical student's ear, memory, intellect, beat and rhythm to a level that enables them to perceive consciously individual elements of the music language, their recurrent combinations, within a scope required for professional activities.

Considerable positive experience has been gained in teaching that course of the curriculum. Solfeggio teachers, however, note quite frequently that students encounter difficulties in building skills of exact intonation, taking dictation, recognizing scale degrees, intervals, chords and their sequences by ear, conscious perception and presentation of a musical text. Therefore, effectiveness of solfeggio classes sometimes turns out to be less than desired.

One of the ways to overcome those difficulties lies in a broader (compared to the practices in use) application of the data of related sciences, first of all psychology and didactics, in the teaching of that subject of the curriculum.

II. PSYCHOLOGICAL ASPECT OF EAR TRAINING

Here are the underlined psychology ideas which are most important for ear training: development of aptitudes through active thinking, information perception and retention attitude, application of the code conversion method to the educational material for the purpose of consolidation of conceptual units in its perception, analysis, retention and presentation; class use of educational material intended for retention (musical dictation, chord and interval sequences,

etc.), containing from five to seven of conceptual units mastered by students.

Let us discuss those issues in more detail.

Development of any aptitude occurs in activity. Activity is connected with intellect (intellect is a prerequisite for activity, it affects its progress and outcome; the results of activity enrich intellect); it joins together the process of thinking and the process of aptitude-building; when activity is built on the basis of psychological laws of perception and retention, it helps activate them.

The key moments of cognitive work are information perception, understanding, retention and application. It is important, at solfeggio lessons, to introduce one more action after "understanding." Depending on the type of the work, it will be described in different ways: "I hear with my internal ear" — with visual perception and silent (inward) reading of a musical text; "I recognize" a certain element of the musical language — with aural analysis of a musical fragment played back.

To make that work conscious and effective, it must be based on requirements of psychology. For instance, perception of information must be preceded by attitude. Attitude is developed with a focus on the purpose and content of the work, available knowledge, abilities and skills of the students (at solfeggio lessons, they are based on the mastered elements of the music language, developed musical and aural notions, skills of educational material analysis). Psychological attitude helps extract from the individual's experience "that information exactly, those stereotypes of operations, which might be required first of all for the solution of the assignment at hand" [3: 53]. In doing so, intellect is activated, the interest in the proposed work is aroused, and thus, the students' readiness for activity is ensured. Depending on its objectives, perception may be focused on different facets of the perceived material, i.e. on its individual elements or their combinations and interrelations.

When perceiving a material introduced by attitude and containing elements of the music language already studied by students, its initial evaluation and understanding occur. If information is comprehensible for the recipient, its content may be presented by them using notions and concepts. That foundation is used to analyze perceived information.

III. DIDACTIC ASPECT OF EAR TRAINING

Didactic rules of developing any aptitude, including ear training, are based on laws of psychology that we have mentioned above.

From what was stated above, we can conclude that solfeggio classes are ideal for ear training of professionals when it is developed via activation of musical thinking in a specially organized cognitive activity based on musical and aural notions.

Experience shows that lack of “reference images” of the means of the music language required for successful completion of certain activity in the student’s long-term memory is the chief reason why they might encounter difficulties in developing skills of exact intonation, taking dictation, recognizing degrees from ear, as well as intervals, chords and their sequences, in conscious perception and presentation of a musical text.

To cope with that challenge, the teacher needs to take into account the content of the various stages of cognitive work in solfeggio classes, and be proactive in carrying out special work aimed at building those musical and aural notions that later will be included in the material for the student’s class and homework.

Let us dwell in more detail on the matters related to development of musical thinking, content of the various stages of cognitive work, building musical and aural notions in the course of solfeggio classes.

At solfeggio classes, students develop the structural and logical side of musical thinking, they form musical and aural notions of different levels, related:

- with individual elements of the music language (degrees, intervals, chords);
- with their sequences, and with their rhythmic and melodic patterns, types of presentation.

To ensure optimal retention of the material by the students, at the very first solfeggio class the teacher is recommended to define attitude aiming to master the educational course: to tell the students about the objectives and importance of solfeggio in ear training, about forms and stages of that work. Here an emphasis on the above-mentioned systemic sequence of actions required for cognitive work needs to be made. We mean information perception, its understanding, hearing (reproduction) by internal ear / recognition of elements of the music language, retention and application. Systemic approach means here, in particular, that none of the work stages can be skipped or misplaced when material is mastered.

Let us describe the content in connection with the basic work forms in solfeggio classes, which are singing, aural analysis, musical dictation. We give traditional terms denoting types of work in solfeggio classes. It would probably be more correct to define all of them as aural analysis, because performance of intonation exercises, taking dictation, and defining intervals and chords are all based on it. And the results of aural analysis are presented in

Retention of educational material becomes more productive, if based on the ideas and notions of its elements already existing in the students’ memory, on so-called “reference images” (Ye.V. Nazaykinsky). Musical thinking operates with reference images of two types: those related to language (individual means of musical expression, such as individual chords and intervals; their recurrent combinations, types and kinds of texture, etc.) and those related to speech (every time they are build all over again; generally, at the level of a theme, expository stages of development) [36: 63–64]. Since the long-term musical memory has “reference images,” and musical perception is defined by constancy, it becomes possible to recognize tunes, intervals, chords, data in different registers, tonalities, forms of presentation [2: 60]. Recognition is based, first of all, on retrieval of relevant musical and aural notions from the long-term musical memory.

Productivity of retention will be enhanced, if the structure of perceived information is analyzed in a certain way. In accordance with the recommendations given by V.Ya. Lyaudis [1], the following can be identified:

- sense-groups (material is divided into relatively finite parts; in solfeggio classes, those are, in monophonic textures, typical melodic patterns; in biphonic ones, fragments with frequently recurring types of interval sequences, such as parallel movement, the horn call, etc.; in chord interpretation, specially mastered chord sequences);
- intra- and inter-group relations are established on the basis of their equivalence, variation or contrast; in musical analysis, it is designation of differential characteristics of the above-mentioned monophonic, interval and chord sequences, establishment of equivalence, variation and contrast in their themes;
- the code of educational material is converted, i.e. conceptual units are consolidated within the same factual scope of the material. In music analysis, it means that a sequence of seven sounds — C, D, E, F, G, A, B, which is perceived, prior to code conversion, as seven conceptual units, and after code conversion is generalized into one concept or notion — represents the C major scale, and therefore is perceived as one conceptual unit.

In accordance with psychological laws of perception and retention, optimal scope of material offered at a solfeggio lesson for presentation from memory (musical dictation, interval and chord sequences, etc.) must contain from 5 to 7 conceptual units mastered in advance, with those units existing in the student’s long-term memory in the form of musical and aural notions.

Activation of cognitive work, interest in it and effectiveness of classes will be improved, if the students are offered practically important and informatively valuable material — instructive and taken from musical pieces — and assignments commensurate with the students’ abilities, based on the knowledge, abilities, skills, musical and aural notions that the students already have at their disposal.

different forms: singing monophonic and biphonic examples; sight-reading, singing, taking dictation or performing it on a musical instrument; identifying individual degrees, intervals, chords and their sequences, etc.

Perception of a text at the initial stage of its retention is either visual (examples for sight-singing) or oral (material for ear training: elements of the music language, dictation). Consciousness of perception is related to text-understanding.

Understanding perceived information is closely connected with its analysis. Analysis is based on knowing elementary music theory, analytical methods of consolidating sense units of a text, intonation theory (in singing), texture theory (in memorizing music presented in different ways).

Hearing a musical text by the internal ear (with its visual perception) and recognizing elements of the music language (with aural perception of information) are all acts managed by memory and thinking on the basis of understanding of the music language and structural attributes of a text related to updating of musical and aural notions recorded in the long-term memory.

Retention of material for aural analysis, taking musical dictation generally requires multiple repeats (their number depends on the students' level of excellence), with mandatory reliance on analysis data and workings of the internal ear.

Reproduction of information by memory — vocal, oral, instrumental or written — also requires reliance on the results of analysis and internal hearing, on musical and aural notions.

We learn from practice that ideally musical and aural notions must be built using systemic approach, and they require adherence to the following sequence of actions targeting retention of a certain music language element:

- studying related theory (ensures a subsequent conscious written construct) ;
- written construct (to be checked by the teacher; then, if there are errors made by the student, the teacher corrects them, and as a result, the student has correct samples of constructed intervals, chords, their combinations, etc., which can be used as reference material when encountering difficulties with oral constructs);
- oral construct (prepares conscious and free performance on the piano);
- performance on the piano (gives an idea of the sound of the music language element to be mastered, allows its good retention, i.e. building a musical and aural notion).

At that stage of work, ability to compose accompaniment to a singing melody plays an important part in the construction of reference images of the music language means related to original and artistically valuable music, which becomes interesting for students by virtue of

being original and artistically valuable, and also related to different forms of texture. If students do not have composing accompaniment as a separate discipline on their curriculum, development of that aptitude is very desirable in solfeggio classes (in that case, time required for mastering that discipline needs to be extended): accompaniment composing must be introduced as an exercise performed on the piano when relevant musical and aural notions are built. That paves the way to mastering “live” music in solfeggio classes, which is very significant for a musician’s ear training.

It is recommended to move from one exercise type to another only if the preceding one is performed without errors, freely, with a fast-paced tempo.

After a reference image of a certain element of the music language has been built and retained in the student’s long-term memory, it can be included in the material used in solfeggio classes, be that material of instructive type or taken from musical literature.

The above sequence of actions to be taken when building musical and aural notions seems to be of universal nature (because it can be used in the study of any element of the music language that is to be learned according to the solfeggio curriculum either in school or in college) and optimal (because it is based on systemic approach, where the sequences of actions and their content are not subject to change).

IV. CONCLUSION

The described approach to ear training of professionals — based on data of psychology and didactics — can yield positive results. It allows students to use solfeggio classes to acquire stable knowledge and practical skills required for effective work both during the studies and in the future professional career.

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