MUSICAL INFORMATICS: Curriculum or a New Area of Musicology?

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Abstract
Brief analysis of 5-years-activities of Computer Center of Moscow State Conservatory and author’s skills in the field of technological directions in music education has been considered. The drawn conclusions led up to the developing of an introductory course “Musical Informatics” based on the common principles and concepts for musical information processing independent of different kinds of hardware, software, MIDI equipment and student’s specialty. A comprehensive scheme shows the list of fundamental disciplines and technological directions in some details and how they are interconnected along the course. It’s suggested to consider the “Musical Informatics” a new area of musicology. The definition, perhaps controversial, is given, too.

1 Introduction

Because of the revolutionary development of computing technologies and multimedia today’s technological directions in music education are being characterized by increasing of teaching time, variety of hardware, software, peripheral equipment and MIDIed musical instruments. Besides the differences of technical environments the different specialties in music education lead up to the set of varied lecture and practical courses. Moreover, this variety depends on the kind of musical educational institution and traditions and customs of country.

Disadvantages of such situation are becoming more obvious for all to whom it may concern: first of all, computer educators and students. Nowadays it’s clearly that establishment of common principles in teaching of computing technologies is necessary to fulfil the need to determine the computer literacy standard in music education. Few studies have already appeared on this subject, for example, see [1].

2 Problems and skills

Being in contacts with Computer Center of Moscow State Conservatory (MSC) the author has found out the same situation. The analysis of 5-years-activities of the Computer Center has already been published partly [2]. However, here it’s worth to mention about a lecture and practical course “Musical Informatics” which have been prepared and put into practice for future musicologists only. The course was based on the common computer literacy standard of Russia for non-engineering specialties, that is with no fully taking into consideration the specific character of music teaching. To meet requirements of this course

* The finest harmony is being created from dissonance. Heraklitos from Aephes (Translated by the author)
students have to take lessons on DOS, Windows, programming language (BAISIC), “how-to-work” with word and graphical processors, spreadsheets (MS Excel) and databases (FoxPro, MS Access). There are also the lessons in working with note editors and MIDI keyboards at the end of the course. It may be noted that with no any methodological or training appliances for note processors excluding user’s instructions the Computer Center has already received some experience. For instance, the program Encore 3.0 running under Windows and sound card Sound Blaster (or Sound Galaxy) is quite apprehensible, to work under the shell of the program Cubase (Cublite) is more hardly, the programs Finale and Score are convenient for skilled students only.

Regarding the author’s experience, he has had the attempts to hold two optional courses “Music and Computer” and “Correct methods for music analysis” at different musical educational institutions of Russia. The latter was based on the simplest concepts of probability theory and mathematical statistics. However, later it became clearly that this curriculum requires higher level of computer literacy from students rather than it’s customary at musical institutions of Russia now. In other words, the success of approaching of specific courses will be provided if it would be possible to upgrade the student’s knowledge in respect to modern computing technologies applied to music.

Generalizing the above it may be said:
• it’s very difficult for students to have a good progress during two semesters (in average, 64 hours);
• graduated students have a proficiency in word processing rather than with music editors because of teaching them along with quite concrete applications for music processing, with no learning the common principles;
• students have a very small knowledge about possibilities of modern computing technologies and how to use them when they will eventually become educators and especially musicologists.

3 Course “Musical Informatics”

Obviously, the best way out under these conditions is to highlight up such principles and concepts in musical information processing which are common and independent of different kinds of hardware and software. On the base of these principles and concepts then it’s necessary to prepare an introductory course that the author refers as “Musical Informatics”. Duration of this obligatory course should be within 4-6 semesters. It’s being planned to put into practice for the first years of studying, hence the last years of educational process should be devoted to one of technological directions according to student’s specialty. Therefore, the course “Musical Informatics” is based on elementary knowledge of several fundamental disciplines and technological directions in music.

The idea to create an introductory course containing the generalized and partly simplified concepts and methods is not new in the world, for example, see [3].

The main problem appearing before a teacher is how to methodologically arrange issues during teaching hardware and software. Of course, the sequence of rendering the learning material along the course is the question of tactics rather than the question of strategy, hence is controversial.

The other question is connected with “mathematical supporting” of such a course. According to the author’s opinion it is highly recommended to provide with one if we want all students to be skilled persons using effectively the powerful software as spreadsheets, databases, expert and productions systems, etc. Especially, today the future musicologists need some knowledge of mathematics.

A scheme placed below reflects the principles of a new curriculum “Musical Informatics” organization. The oval is drawn to point out the interconnections and an approximate sequence of learning topics (only limited set of issues is shown on this scheme). However, the author considers to start along with the acoustics issues, then to move below to “Analog-to-Digital Conversion” block and so on. “Mathematics” is also connected with “Databases, Productions Systems” and “Music Analysis and Synthesis” parts of the scheme.

Which of the parts should be referred as a strategic top of the course? Any of three parts -- “Music Analysis and Synthesis”, “Electronic Musical Instruments” and “Music Representations” -- may be chosen in the capacity of the main aim. Thus, the suggested scheme of the course has some flexibility because gives a teacher an opportunity to increase or decrease the quantity of issues in different parts.

The practical course realization depends on quality of technical equipment at musical educational institutions, psychological scale of values, proficiency of teachers, etc.
4 Suggestions for discussion

Analyzing this scheme more carefully it’s naturally to ask the next question: musical informatics -- is one of the curricula or a new area of musicology? Actually, the author’s opinion is that this scheme reflects the situation that has been like before cybernetics appeared. However, if cybernetics has become later the independent science then with regard to the musical informatics the one is quite the independent area of musicology. The next definition of the musical informatics can be given as follows:

Musical Informatics -- is the area of musicology investigating general principles and methods for receiving, saving, processing and transferring of information contained into musical material along with computing technologies supply. The musical material is referred as all what is directly or indirectly connected with music, for example, “non-sounding” score, audio- or MIDI-file, etc. The questions of terminology generally recognized all over the world are opened for discussing in the close future.
5 Conclusion

The ideas placed above are those of the author and do not express the official position of boards on musical education in Russia. This work has been started lately and the author has not received any experience in teaching of “Musical Informatics” yet. However, he will be glad to discuss the questions of tactics with persons interested in it.

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References

