

COMPARATIVE ANALYSIS AMONG UNDERGRADUATE MUSIC TECHNOLOGY PROGRAMS IN TURKISH UNIVERSITIES

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Abstract

This study aims to analyze the similarities and differences among the undergraduate music technology curriculums offered by the four Turkish universities via scanning each curriculum in terms of credit allocation. This paper is a part of an ongoing PhD thesis which intends to thoroughly examine the credits allocated to music technology courses besides nine other areas of music education that are related and in relation to music technology such as music theory, performance, composition etc. Although the extensive PhD thesis includes comparisons among the whole four year curricula offered by both domestic and international music technology departments, the fifth semester of four selected Turkish undergraduate music technology degree programs are compared and evaluated here and within the framework of this article. The methods of data collection and calculation are presented, the research process is exemplified and the results reached are explained along with findings, suggestions and discussions for further study.

Keywords: Music Technology Education, Curriculum, Credit Allocation.

Introduction

Music Technology is relatively a newly adopted field in terms of undergraduate education in Turkey. Currently, there are four Turkish universities which offer music technology education as an undergraduate four-year study leading to a bachelor's degree.

This article represents an excerpt from my PhD thesis where undergraduate music technology curriculum is examined in terms of credit allocation and evaluated both at a domestic and an international level. In this article, the four-year music technology curricula offered by Izmir Dokuz Eylül University, Istanbul Technical University, Sivas Cumhuriyet University and Malatya İnönü University have been scanned and the courses included in the curricula have been categorized into field groups such as music theory, composition, music history, music technology etc. The credits allocated for each of these categories has been examined in order to be able to describe the differences and resemblances among the undergraduate music technology programs in Turkey in terms of credit allocations per category. The fifth semester curriculum of the programs offered by the universities above is presented in this article to represent how the methods of comparison were implemented during the time of the extended research.

Methods

The information concerning the four-year music technology undergraduate education programs and the included courses have been retrieved by internet review method. The research has been conducted through a span of four years which has enabled the observation on the evolution, changes and progress of the music technology curricula in Turkey. The curricula of the programs offered by Turkish universities in music technology have been scanned and updated on a periodic

basis as to take place at the beginning of each academic year. In this study, the four undergraduate programs operating under the name, 'music technology' -either at a departmental or a program level as a division under the departments- are selected to be presented. These four undergraduate programs can be listed as follows:

- Izmir Dokuz Eylül University, Faculty of Fine Arts, Department of Musical Sciences, Music Technology Division, Music Technology Program
- Malatya İnönü University, Faculty of Fine Arts and Design, Music Department, Music Technology Division, Music Technology Program
- Sivas Cumhuriyet University, Faculty of Fine Arts, Music Technology Division, Music Technology Program
- Istanbul Technical University, Turkish Music State Conservatory, Music Technologies Department, Sound Recordings Division, Music Technology Program

The courses within the programs of the four universities offering music technology education leading to a bachelor's degree are categorized into the fields they reside and are mostly related to. The categorization of the individual courses is made in accordance with the course descriptions, syllabi and statements of the instructors where available. Afterwards, the courses of each category have been analyzed with respect to their own individual credit weight in percentages per term. The said field categories may be classified under ten titles as stated below:

- Performance,
- Music Technology,
- Music Theory,
- Music History and Literature,
- Composition,
- Music Industry and Business,
- Computer Sciences and IT Technologies
- Council of Higher Education Courses (YÖK Courses)
- Foreign Language and
- Others

The classification method is preferred in order to be able to express the similarities and differences of different programs easily. There are no hierarchical relations between these categories. The categories determined have been composed by examining the course contents of the four mentioned programs individually. The certain courses which cannot be evaluated within the above-mentioned first nine groups have been collected under the title of 'Others' in order to control the scope of the target population. The elective courses as indicated in the curricula are selected among music technology electives where available.

Since each of the four programs mentioned are different in respect with their total credit number of four-year curriculums, the weight of each category within the total credits of the whole program are expressed in percentages in this study. It should be noted that what is denoted by 'credit' here refers to the number of hours the instruction takes place, not the ECTS (European Credit Transfer Credits). The credit weight of each group is expressed as per cent rates for each semester and then their per cent weights within four-year curriculum are found. In order to express

the periodical credit weight for each category group, primarily a 'multiplier coefficient' is calculated. This coefficient is the weight of 1 (one) credit hour within the semester total credits and it changes in respect of each semester and program. The below-mentioned formula is used in order to calculate the multiplier coefficient:

$$\text{Multiplier Coefficient (MC)} = 100 / \text{Semester Curriculum Total Credit Number}$$

The coefficient obtained is used for calculating the credit weight of the category within total credit number. This calculation can be formulated as stated below:

$$\text{The Credit Weight of the Category within Semester (\%)} = \text{MC} \times \text{Credit Number of Category within Semester}$$

For instance, in a program which the semester total credit number is 22, if the total credit of the performance courses within the same semester is 5, the credit weight of the performance category within semester is:

$$\text{MC} = 100 / 22 = 4,54$$

$$\text{The Semester Credit Weight of Performance Category (\%)} = 4,54 \times 5 = 22,7 \text{ percent}$$

An Example for Comparison of the Curricula: The Fifth Semester

The fifth semester of the four-year undergraduate music technology programs is found to be intense and is selected to be an impressive sample for exemplifying how the comparisons were made. During the extended thesis research, curriculum for each program has been examined and the credit weights per field categories per each of the eight semesters were calculated where the results for the whole four-year education have been obtained. Since it is not possible to present all the tables and analyses of all eight semesters here, the fifth semester is selected to provide a sample and is considered to be sufficient to explain how the analyses were made.

The main concept of education of music technology in Turkey is not different from the other countries as well and Department of Music Technology, the first undergraduate program of music technology in Turkey, within Faculty of Fine Arts at Dokuz Eylül University, is represented as a model for music technology education. (Işıkhan 2013: 103).

Although referred to as being a 'department' in term of organizational structure, 'division' is used in this article as the offering branch because the music technology division resides under the department as seen on the institution's own website.

Table 1. Izmir Dokuz Eylül University, Faculty of Fine Arts, Department of Musical Sciences, Music Technology Division, Music Technology Program, Semester 5.

DEU SEMESTER 5								
NAME OF THE COURSE	COURSE CATEGORY	CREDITS				% PER COURSE	ARRANGED DISTRIBUTION	
		T	P	TOTAL	ECTS		TOTAL	CATEGORY
Studio Equipments I	Music Tech	3	0	3.0	3.0	12.5	83.3	Music Tech
Performance I	Performance	1	0	1.0	5.0	4.2	12.5	Music History & Literature
Studio I	Music Tech	3	3	6.0	4.0	25	4.2	Performance
Turkish Popular Music History	Music History & Literature	3	0	3.0	3.0	12.5		
Electives	Music Tech	8	3	11.0	15.0	45.8		
		18	6	24	30	100	100	
Multiplier Coefficient (MC) = 100 / 24 = 4.16								

As stated by Işıkhhan, Izmir Dokuz Eylül University, Faculty of Fine Arts, Department of Musical Sciences, Music Technology Division, Music Technology Program is the first program that offered education in the field of music technology in Turkey. In Table.1, the courses, total credits and the weights of the credits within semester total credits are included. When we look at Dokuz Eylül University's fifth semester program, we see that courses belonging to music technology category form 83.3 percent of the program in terms of credit weight as indicated in Table 1. 'Music History & Literature' and 'Performance' categories have 12.5 and 4.2 percent of the overall term credits respectively.

The fifth semester curriculum of Malatya İnönü University, Faculty of Fine Arts and Design, Music Department, Music Technology Division, Music Technology Program, is given in Table 2. The courses are listed under four different field categories as 'music technology', 'performance', 'music theory' and 'other'.

Table 2. Malatya Inonu University, Faculty of Fine Arts and Design, Music Department, Music Technology Division, Music Technology Program, Semester 5.

INONU UNIVERSITY, SEMESTER 5								
NAME OF THE COURSE	COURSE CATEGORY	CREDITS				% PER COURSE	ARRANGED DISTRIBUTION	
		T	P	TOTAL	ECTS		TOTAL	CATEGORY
Piano V	Performance	1	0	1.0	6.0	6.7	20.0	Performance
Reading/Dictation/Theory V	Music Theory	2	0	2.0	4.0	13.3	26.7	Music Theory
Electronics	Music Tech	2	0	2.0	2.0	13.3	40.0	Music Tech
Sound Design	Music Tech	2	0	2.0	4.0	13.3	13.3	Other
Harmony III	Music Theory	2	0	2.0	3.0	13.3		
Voice Ensemble III	Performance	1	2	2.0	3.0	13.3		
Field Elective	Music Tech	1	1	2.0	4.0	13.3		
Free Elective	Other	1	2	2.0	4.0	13.3		
		12	5	15	30	100	100	
Multiplier Coefficient (MC) = 100 / 15 = 6.66								

The most significant differences between the fifth semester of Dokuz Eylül University, Music Technology undergraduate program and that of Inonu University, Music Technology Division's is that the latter forms of one more category than the previous one. According to Table 2, performance category courses have the credit weight at 20 percent in Inonu University's fifth semester curriculum where 40 percent of the total credit weight amount belongs to music technology courses. In the extended thesis research, it can be seen that the whole four-year undergraduate curriculum, music theory and performance category courses have a significant amount of credits in Inonu University's program. The other field category we observe in the fifth semester curriculum of this program is the 'other' category with a percentage of 13.3.

In Table 3, the curriculum of fifth semester of Sivas Cumhuriyet University, Faculty of Fine Arts, Music Technology Division, Music Technology Program is presented. The courses are grouped and evaluated into four main in the table.

Table 3. Sivas Cumhuriyet University, Faculty of Fine Arts, Music Technology Division, Music Technology Program, Semester 5.

CUMHURİYET UNIVERSITY, SEMESTER 5								
NAME OF THE COURSE	COURSE CATEGORY	CREDITS				% PER COURSE	ARRANGED DISTRIBUTION	
		T	P	TOTAL	ECTS		TOTAL	CATEGORY
Chorus III	Performance	2	2	3.0	0.0	15.0	20.0	Performance
Piano V	Performance	1	0	1.0	2.0	5.0	25.0	Music Tech
Sound Synthesis Software II	Music Tech	2	0	2.0	0.0	10.0	45.0	Music Theory
Studio II	Music Tech	1	0	1.0	9.0	5.0	10.0	YÖK
Recording Techniques II	Music Tech	2	0	2.0	2.0	10.0		
Theory and Applications of Turkish Music III	Music Theory	2	0	2.0	2.0	10.0		
Harmony III	Music Theory	3	0	3.0	0.0	15.0		
Musical Dictation	Music Theory	2	0	2.0	0.0	10.0		
Accompaniment and Arrangement I	Music Theory	2	0	2.0	0.0	10.0		
Turkish - I	YÖK	2	0	2.0	2.0	10.0		
		19	2	20	17	100	100	
Multiplier Coefficient (MC) = 100 / 20 = 5								

Considering the ten field groups listed in the introduction section above, it can be seen that the courses in this term of Cumhuriyet University's music technology program are accumulated into the main field categories of 'performance', 'music technology', 'music theory' and 'YÖK'. According to the field groups, the music theory field courses share 45 percent, music technology field courses share 25 percent, performance field courses share 20 percent and finally YÖK courses share 10 percent of the total credits of the fifth semester curriculum of this particular program.

The fifth term of undergraduate music technology education in Sivas Cumhuriyet University is similar, although not the same, with that of Inonu University Music Technology program in terms of the field categories and their number. However, they are different from the ones that are offered by Dokuz Eylül University Music Technology Division. None of the programs are similar in terms of the credit weights per field categories they include in their fifth semester curriculum.

The curriculum of the fifth semester of Istanbul Technical University, Turkish Classical Music Conservatory, Music Technologies Department, Sound Recordings Division, Music Technology Program is presented in Table 4. The courses are separated into three main groups according to the table below.

Table 4. Istanbul Technical University, Turkish Classical Music Conservatory, Music Technologies Department, Sound Recordings Division, Music Technology Program, Semester 5.

ITU, SEMESTER 5								
NAME OF THE COURSE	COURSE CATEGORY	CREDITS				% PER COURSE	ARRANGED DISTRIBUTION	
		T	P	TOTAL	ECTS		TOTAL	CATEGORY
Knowledge of Instrument I	Music Tech	2	0	2.0	4.0	10.5	63.2	Music Technology
History of Turkish Revolution	YÖK	4	0	4.0	4.0	21.0	21.0	YÖK
Individual Project Studies I	Music Tech	2	2	3.0	5.0	15.8	15.8	Other
<u>Studio Course V</u>	Music Tech	0	0	3.0	6.0	15.8		
<u>Professional Technology Courses V</u>	Music Tech	0	0	2.0	5.0	10.5		
Elective	Music Tech	0	0	2.0	3.0	10.5		
Elective from Humanities	Other	0	0	3.0	4.0	15.8		
		8	2	19	31	100	100	
Multiplier Coefficient (MC) = 100 / 19 = 5.26								

In Table.4, fifth semester curriculum is shown along with the percentage credit weights of each individual course besides of each field category. For this particular program, the fifth semester multiplier coefficient is derived as 5.26. Music technology category courses have a share of 63.2 percent among the whole semester credit weight. YÖK courses have 21 percent and the courses under the category of 'other' have a 15.8 percent share in the fifth semester. The percentage weights of these four groups are indicated in Table 4.

Conclusion

The four undergraduate music technology programs examined in the extended study differ from each other in respect to both credit distribution per field categories and the number of credits offered in each semester of the four year education. The fifth semester is selected to exemplify these differences in this article.

In terms of total number of credits offered in the fifth semester of each program, Dokuz Eylül University with 24 credits, Cumhuriyet University is the second with 20 credits, ITU is the third with 19 credits and is followed by İnönü University which is the fourth and the last with 15 credits in the ranking.

Dokuz Eylül University Music Technology Program is the one that spares the most credits in the field of music technology both in the fifth semester and during the whole undergraduate study. 83.3 percent of the whole fifth semester courses belong to the music technology category in this particular program. ITU follows Dokuz Eylül University as it allocates 63.2 percent of the fifth semester courses to music technology category. İnönü University follows ITU with 40 percent music

technology courses where it is followed by Cumhuriyet University which spares 25 percent of its fifth semester curriculum to music technology field category.

Performance category courses are included in the fifth semester curriculum by İnönü, Cumhuriyet and Dokuz Eylül universities with percentages of 20, 20 and 4.2 respectively. Cumhuriyet and İnönü universities offer courses in music theory with percentages of 45 and 26.7 respectively.

Credits allocated for YÖK courses in the fifth semester are 21 and 10 percents and are offered by ITU and Cumhuriyet University respectively where ITU and İnönü University are institutions each of which have an elective from humanities evaluated under 'other' category.

Each of the four programs includes courses that fall under the ten field categories in their four-year undergraduate curriculum. However, each university has a different approach to the distribution of the courses along the semesters. For example, YÖK courses are provided in the early semesters by Dokuz Eylül and İnönü universities where ITU and Cumhuriyet University provide YÖK courses in the later terms.

The universities and their faculties, departments and divisions are autonomous in designating their own curriculums. This principle is denoted by the regulations and directives set forth by each university in Turkey. Shortly, there are no standards determined about the credit weights of field categories listed in this article. Yet, it is reasonable to expect that the overall credits allocated to music technology courses within the time frame of the undergraduate study in the music technology departments should not be less than the credits allocated to the other nine field categories listed in this article. However, looking at the undergraduate music technology curricula offered between the years 2009- 2011 by different universities, one can see that this expectation has not been met during that time. It was seen that the 'Music Technology' field has less credit weight within the overall credits than the other fields. Malatya İnönü University music technology curriculum used to offer 32 percent performance courses and only 25 percent music technology courses, Sivas Cumhuriyet University music technology curriculum used to allocate 28.4 percent of music theory and 24.4 percent to music technology and finally Istanbul Technical University used to allocate 38 percent to music theory and only 28.5 percent to music technology courses between 2009- 2011. My recent study shows that the undergraduate music technology curriculum is significantly being changed and designated by the universities as if to include more music technology category courses in the recent years, however, the answer for the questions "How much of the total credit weight should be spared to music technology category in the undergraduate music technology curriculum?" or "Should at least minimum amount, say it 30 or 40 or whatever percent, be decided for the credit allocation of a specific field category which gives its name also to the department?" have not been replied yet.

The credit weights of courses in music technology field in the curriculum should be increased and compulsory courses in the other field groups should be decreased if the credits allocated for music technology is less than any other field category. In a student's point of view, it would not be reasonable I suppose to attend to a program which has the name 'music technology' where most of the instruction takes place in another field. Although each university and department is autonomous in deciding its own curriculum, attention should be paid to what name the department or program carries and to how much of the courses belong to the field that also gives its name to that department.

In each one of the listed four music technology programs, there are different application opportunities besides differences among their resources like studios, instructors and courses offered by these instructors etc. Students or academicians can well take benefit of these opportunities and differences among the programs by participating in the national exchange programs such as Farabi Exchange Program.

In my opinion and according to my experience in university instruction, curricula of music technology should be supported more with compulsory core courses such as Acoustics, Physics, Audio Electronics, Mathematics and Computer Programming for the music and audio industries are shifting towards demanding these qualifications from the graduates more and more each passing day because of the accelerated developments in technology.

Music technology is a highly practice based field, that's why it is thought to be highly beneficial if university could provide internship opportunities by improving the relationship with industry and media. The theoretical and practical courses related to visual and interactive media industries should be added into the program as well. None of the undergraduate music technology curriculums listed above embodies any courses related to game audio in example. We must provide our graduates the opportunity to be competitive in employment in the industries coming out around the emerging technologies.

This article is only a part from my PhD thesis where the comparison takes places not only among domestic programs, but also among the foreign equivalent music technology curricula. Both studies aim to prove that it is possible to make deductions about whether a program fulfills the necessities of its name or not, by calculating how much of its curriculum is allocated to the main field of instruction that is also the name of the department. However, it is accepted that credit allocation is just one of the parameters that can be used to determine the quality of education. Further research is needed to be conducted about how music technology education should be executed, how curriculum can be formed and which disciplines and field categories should be emphasized more in execution, which and in what ways resources can be allocated according to the institutions agenda and to meet the needs of the industry. However, the interdisciplinary nature of music technology should always be thought as the main concern in designing the curriculum. According to Boehm, "In order for interdisciplinary subjects such as 'music technology' to flourish, without prejudice and discipline-specific cultural constraints, teaching and research have to be allowed to happen at the brink of and in the spaces between disciplines, spaces where new theories emerge out of inquiry and where they are informed but not bound by pre-existing schools of thought" (Boehm 2007:19). Indeed, more research should take place about all the resources of the institutions and the effectiveness in their usage as well as questionnaires and interviews should be conducted among department heads, instructors, students and alumni in order to come to a more solid conclusion about the quality of the overall undergraduate education in music technology in Turkey.

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