



Research Article

Examining the instructional strengths of Turkish music cello training methods

Gülcan Elibol¹ and Özcan Çetik^{2*}

Turkish Music State Conservatory, Necmettin Erbakan University, Konya, Türkiye

Article Info

Received: 6 November 2024

Accepted: 17 Dec 2024

Available online: 30 Dec 2024

Keywords

Cello education

Cello teaching methods

Instructional strength

Teaching methods

Turkish Music

Abstract

The performance of Turkish music on the cello has developed with the unique styles of artists and has been transmitted to future generations through the meşk system. Since there is no specific method or applied approach written specifically for Turkish music, education has been entirely based on the Western system up to the present day. To outline the current state of cello education and to view the shortcomings in this field from a broader perspective, it is important to evaluate Turkish music cello education in terms of aspects such as method, curriculum, resources, and a common language in education. This study aims to examine the methods used in Turkish music cello education in terms of their use of music pedagogical methods. Since the study was conducted by analyzing the sources available in the literature through the document analysis technique, it is a study in line with the qualitative research method. During the research process, five methods related to Turkish music were identified. The accessible methods include Barış Demirci's book "Turkish Music Scales for Cello", Levent Değirmencioğlu and Hacı Mehmet Andaç's book "Cello Education in Turkish Music", Sıtkı Bahadır Tutu's book "40 Makamsal Etudes for Cello", Taner Topaloğlu's book "Anatolian Melodies with Thumb Technique in Cello Education", and Mehmet Can Çiftçi'başı's book "Turkish Folk Melodies Album for Cello." The content analysis of these books was conducted, and their scope and content analyses were summarized and presented in tables. Through the analyses, it was observed that two of the books are based on the tempered system, while the other books are methods aimed at teaching the fundamental makam and usul of Turkish music through etudes and schematic representation approaches, targeting intermediate levels. In addition to the methods, a review of these written on cello education in the literature concluded that the main issues in Turkish music cello education are curriculum, applied methods, resource and method deficiencies, content inadequacies in methods, the working environment in educational institutions, insufficient lesson hours, and lack of materials. To solve these issues and to elevate cello education to a better level, solution suggestions have been presented.

2717-8870 © 2024 The JIAE.

Published by Genç Bilge (Young Wise)

Pub. Ltd. This is an open access article

under the CC BY-NC-ND license



To cite this article

Elibol, G., and Çetik, Ö. (2024). Examining the instructional strengths of Turkish music cello training methods. *Journal for the Interdisciplinary Art and Education*, 5(4), 247-262. DOI: <https://doi.org/10.5281/zenodo.14504812>

Introduction

Among the traditional methods used in instrument teaching from past to present, the meşk system has been a method where makam, usul, and pieces are taught to students through listening, observing, and imitation within the master-apprentice relationship. This method has helped students develop their hearing, learn the repertoire, and enhance their musical sensitivity. Additionally, methods such as solfège, theory and practice, group lessons, the use of technology, workshops, seminars, concerts, music camps, and master performances have been utilized to achieve educational goals.

¹ Expert in science, Konya, Türkiye. E-mail: gulcanelibol36@gmail.com ORCID: 0000-0002-4836-6760

² Corresponding author: Asst. Prof. Dr. Turkish Music State Conservatory, Necmettin Erbakan University, Konya, Türkiye. E-mail: ozcancer70@hotmail.com ORCID: 0000-0002-5788-4893

The selection of methods in teaching Turkish music depends on factors such as the student's age, level, learning style, and goals. The most effective method is to use and harmonize different approaches, providing the student with comprehensive gains. In teaching Turkish music, the primary aim is to actively engage the student in the process and support their musical development. By using various methods and tools, it is possible to create a learning environment suitable for each student. Alongside the methods used in instrument teaching, there has arisen a need to write methods to systematize and standardize the taught knowledge and techniques, to establish a common language, and to present these scientifically. "The first instrument methods in Ottoman/Turkish music, in the Western sense of virtuosity, emerged in the early 20th century. As the concept of virtuosity began to be integrated into Ottoman/Turkish music, the number of compositions written for instruments used in this music increased, and in parallel with these developments, instrument methods started to be written" (Kaptan, 2022, p. 98).

The strength of a teaching method is associated with concepts such as its effectiveness, depth, learner-centeredness, flexibility, applicability, and efficiency. A teaching method's strength can be evaluated based on these aspects. Among the instruments used in Turkish music, the cello, which is of Western origin in its current form, has started to be included in Turkish music ensembles. It is known that the teaching of this instrument has been carried out not through methodological approaches as in Western music but rather through the *meşk* system. "The cello, which began to be used in Turkish music with the establishment of Mızika-yı Hümayun in the 19th century, was first included in ensembles by Tanbûri Cemil Bey" (Tutu, 2001, p. 24). "Although the cello serves as the tenor instrument in the violin family, it has generally been used in Turkish music to provide bass richness. Therefore, and due to technical limitations in playing, the cello did not play as active a role as other instruments in past performances" (Değirmencioglu, 2006, p. 7).

The performance of Turkish music on the cello has developed through individual creativity and its transmission to future generations via the *meşk* system. Institutionally, its teaching was first included in 1936 in the composition department of the Ankara State Theater, followed by Istanbul Technical University in 1976 and Ege University State Conservatory in 1990. An examination of the processes of Turkish music cello education, which has continued for many years, reveals that traditional Turkish music repertoire, both instrumental and vocal works, has been used as sources. When we analyze the curricula of institutions providing Turkish music cello education, it is observed that resources used at the beginner level are predominantly Western-based. However, the reliance on the same resources for two vastly different systems—Western and Turkish music, which differ significantly in terms of sound systems and performance characteristics—restricts Turkish music education and performance practices.

Today's studies on Turkish music cello education rely on the recordings of prominent performers, theses, and scientific articles that concretize technical and stylistic features. Most of these studies cover intermediate and advanced levels. For beginner-level studies, it is observed that many are based on Western sources or presented in conjunction with them. This study is important for evaluating and addressing the deficiencies in Turkish music cello education from the perspectives of methods, curriculum, resources, and materials. By compiling the written methods and theses in the field, analyzing their content, and highlighting their contributions or areas needing improvement, this research aims to guide educators currently working or planning to work in this area. By identifying contributions and shortcomings, the study also provides suggestions to enhance cello education and elevate it to a better level. This research aims to examine the methods used in Turkish music cello education in terms of their application of music pedagogical methods.

Problem of Study

The main research problem is:

- What are the characteristics of the developed Turkish music cello education methods?

Sub-problems

- What are the objectives, covered levels, teaching methods, and contributions to the field of the method "*Turkish Music Scales for Cello*"?
- What are the objectives, covered levels, teaching methods, and contributions to the field of the method "*40 Makamsal Etudes for Cello*"?
- What are the objectives, covered levels, teaching methods, and contributions to the field of the method "*Cello Education in Turkish Music*"?
- What are the objectives, covered levels, teaching methods, and contributions to the field of the method "*Turkish Folk Melodies Album for Cello*"?

- What are the objectives, covered levels, teaching methods, and contributions to the field of the method "Anatolian Melodies with Thumb Technique in Cello Education"?
- What are the descriptive characteristics of theses written in the field of cello education in Turkey? Here is the direct translation of the provided text:

Method


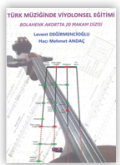



Research Model

This study is in line with the qualitative research method as it was conducted using the document analysis technique, where data was obtained by examining existing sources in the literature. "Document analysis involves finding, reading, taking notes, and evaluating sources aimed at a specific goal. In other words, document analysis is a series of processes carried out during the analysis and evaluation of printed and electronic elements" (Yıldırım & Şimşek, 2021). In our research, content analysis was conducted on the methods written for Turkish music education, and theses written in the field of cello education/teaching were presented as a compilation study to identify deficiencies in the field and offer solutions.

Documents

In our research, only methods containing Turkish music content were analyzed to examine methods written for use in Turkish music cello education (Table 1).

Table 1. Books/methods examined within the scope of the research

Method/Book	Author	Publishing Date	Cover
Türk Müziği Dizileri	Barış Demirci	2013	
Türk Müziği Viyolonsel Eğitimi	Levent Değirmencioğlu-Hacı Mehmet Andaç	2021	
Viyolonsel İçin 40 Makamsal Etüt	Sıtkı Bahadır Tutu	2014	
Viyolonsel Eğitiminde Başparmak Tekniği ile Anadolu Ezgileri	Taner Topaloğlu	2022	
Viyolonsel İçin Türk Halk Ezgileri Albümü	Mehmet Can Çiftçi	2021	

Data Collection and Analysis

In our study: scientific studies written about Turkish Music cello education and performance were reviewed, sources, methods, and curricula used in performance and theory were investigated, a form was created for the analysis of the

printed methods used, content analysis was conducted on the methods written in the field based on criteria such as the level covered, system used, general music information, information about the organology and history of the cello, information on cello and bow hold, theoretical knowledge of Turkish music, *usul* knowledge, scale exercises, etudes, and the number of sample pieces, and the contributions of these methods to the field were revealed.

The analysis of the methods was compared with a created table, strengths and weaknesses were identified, and suggestions were made for both improving the existing methods and providing a framework for newly written methods. The challenges encountered in the specific context of Turkish Music cello education and teaching, primarily due to the lack of methods and the approach to the process, were highlighted. Through this study, a broader perspective on the deficiencies in the field was provided by compiling theses specifically written about Turkish Music cello education, and solutions were proposed for the problems encountered in the education/teaching process.

Findings and Discussion

In this section of our research, the analysis of the methods was carried out, their contributions to the field were revealed, and in light of this information, the deficiencies in the field were identified. To gather all the issues in the field and evaluate them from a broader perspective, the academic studies conducted were presented in the form of a compilation study.

The Book of Turkish Music Scales for Cello

This method aims to introduce the scales related to Turkish Music *makam*, ensuring that the scales are performed on the cello with different *usul* and playing techniques. It is a method that can be used by those who have completed the beginner level on the cello.

The content of the method includes:

- Definitions related to the *makam* and scales used in Turkish music,
- Definitions of the *koma* values used in Turkish music,
- The names and positions of the pitches shown in the treble clef used in the notation of Turkish music,
- Information about bow divisions and techniques,
- Scales and etudes.

The scales in the method are first explained in writing in terms of the nature of the *makam*, its tonic, dominant, key signature, *yedeni*, ascending and descending (*seyr*), and scales specific to Turkish Music. The scales are shown in the treble clef as fourths and fifths within the Arel-Ezgi-Uzdilek sound system.

Figure 1. Example of makam (Demirci, 2013)

Turkish Music scales are classified according to their tonal centers as follows:

Scales with Do as the tonal center: Çargâh Makam,

Scales with Re as the tonal center: Sultânî Yegâh and Şedd-i Arabân Makam,

Scales with Mi as the tonal center: Sûz-i Dil Makam,

Scales with Fa as the tonal center: Acem Aşîrân Makam,

Scales with Fa sharp as the tonal center: Eviç and Evcâra Makam,

Scales with Sol as the tonal center: Mâhur, Râst, Nikriz, Basit Sûzinak, Nihavend, Hicazkâr, Kürdîlihicâzkar, and Neveser Makam,

Scales with La as the tonal center: Uşşak, Hüseyî, Kürdî, Bûselik, Karcîğâr, Hicâz, Zîrgüleli Hicâz, and Sabâ Makam,

Scales with Si as the tonal center: Segâh and Hüz zam Makam.

The scales are presented by classifying them based on their tonal centers, and the *koma* notes within the scales are transcribed into their closest tempered equivalents.

In the writing of the scales, the bass clef was used, and the scales were diversified into one-octave and two-octave versions with quarter, eighth, and sixteenth note values, forming etudes. These scales were later written in Turkish Music *usûls* and diversified with various playing techniques.

Figure 2. Etude example (Demirci, 2013)

This method, which covers intermediate and advanced levels, contributes to the field by introducing Turkish music scales and enabling the performance of Turkish music in a polyphonic manner.

The Book of 40 Makamsal Etudes for Cello

This method aims to meet the technical needs of individuals at different levels in cello education, enhance their skills in performing traditional pitches, *usûls*, and *makams*, and improve their expressive power.

The content of the method includes:

- Explanations about etudes, string numbers, and bow divisions,
- A Makam Index,
- A Usûl Index,
- Etudes.

The etudes are written in *makams* such as Rast, Segâh, Nihâvend, Mâhur, Acemaşîran, Kürdî, Bûselik, Uşşak, Beyâtî, Hüseyî, the Hicâz family, Karcîğâr, Sabâ, Şevkefzâ, Muhayyerkürdî, Hüz zam, Sultanîyegâh, Ferahfezâ, Evcârâ, and

Kürdîlihicâzkâr, and in *usûls* such as Nim Sofyan, Semâi, Sofyan, Türk Aksağı, Yürük Semâi, Sengin Semâi, Devr-i Hindî, Devr-i Tûrân, Müsemmen, Düyek, Aksak, Oynak, Ağır Aksak, Aksak Semâi, and Curcuna.

At the beginning of the etudes written for these *makams*, the scales belonging to the respective *makams* are presented to efficiently utilize the sound range of the cello and establish melodic continuity, exceeding two octaves. Each etude is written in both bass and treble clefs to clarify which region of the sound range the performance will be conducted in and to contribute to the ability of individuals trained in Western music to read the treble clef and transpose.

Figure 3. Etude example (Tutu, 2014)

Figure 4. Etude example (Tutu, 2014)

These etudes, which cover intermediate and advanced levels on the cello, require not only the necessary technical and theoretical knowledge on the cello but also an understanding of *makam*, pitch (*perde*), and *usûl* in Turkish music. The approach of incorporating the logic of Turkish music pitches, *makams*, and *usûls* into the individual contributes to the field by providing an understanding of the melodic flow (*seyir*) logic within the written etudes.

The Book of Cello Education in Turkish Music

This method was created to address the four-tone transposition issues encountered by individuals with a Western music background learning Turkish music, to determine the sound range to be used in the performance of Turkish music works, to create a schematic method for positioning the *makam* scales on the fingerboard, and to teach Turkish *makam* music through short melodic flows of related *makams*.

The content of the method includes:

- The 20 most frequently used *makams* according to TRT statistics,
- Schematic visuals of *makam* scales for cello,
- Explanations and visuals regarding *makam* scales,
- Examples of melodic flows (*seyir*) belonging to the *makams*.

The 20 *makam* scales included in the method are presented schematically to show their positions on the cello in accordance with the Arel-Ezgi-Uzdilek sound system. The theoretical explanations and visuals of the *makams* are directly adapted from İsmail Hakkı Özkan's book "*Türk Müsikişi Nazariyatı ve Usûlleri-Kudüm Velveleleri*." Since the scales alone are insufficient for teaching the *makams*, the melodic flows specific to the *makams* are presented in a way that aligns with the Turkish music sound system.

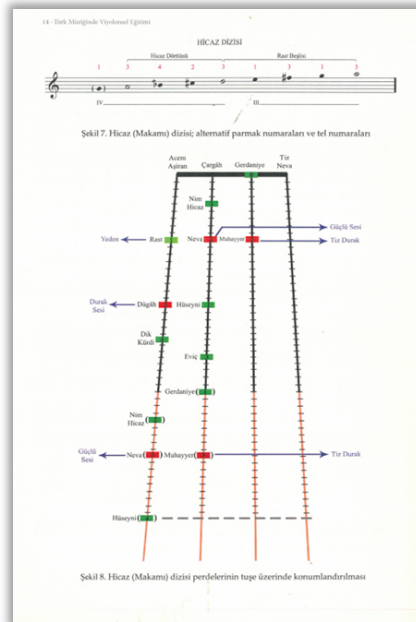


Figure 4. Example of schematic representation (Değirmencioğlu & Andaç, 2021)



Figure 5. Example of left hand position (Değirmencioğlu, 2006)

Levent Değirmencioğlu & Hacı Mehmet Andaç - 17

Hicaz (Makamı) Dizisi Seyir Örneği

Sofyan Levent DEĞİRMENCİOĞLU

Figure 6. Example of seyir (Değirmencioğlu, 2006)

This method, which covers intermediate and advanced levels on the cello, contributes to the field by teaching frequently used *makams* and *usûls* in Turkish music, addressing the challenges faced by Western-based students during their transition to Turkish music education, providing visual support for positioning *makams* on the fingerboard, and explaining Turkish music without relying on the tempered system.

The Book of Turkish Folk Melodies for Cello

This method aims to equip individuals with basic-level technical skills and competencies in cello education while imparting knowledge of *makam* and rhythms in Turkish music. Furthermore, it is expected that individuals will establish a connection with their culture through folk songs, emotionally integrate with their instruments, and develop their memory, performance, and interpretation skills.

The content of the method includes:

- Explanations about the use of the book,
- Scales belonging to the *makams* Çargâh, Kürdî, Beyâtî Şiraz, Segâh, Rast, Mahur, Acemaşîran, Nihavend, Hicâz, Eviç, and Nikriz, which encompass the folk songs in the book,
- Folk songs from various regions of Türkiye.

Viyolonsel İçin Türk Halk Ezgileri Albümü

Kıtapdaki Eserler Ait Makam Dizilerinin Tampere Sistemdeki Gösterimleri

13

Figure 8. Scale studies (Çiftçibaş, 2021)

Bilmem Şu Feleşin

Dizi: Çarğah Yöresi: Orta Anadolu
Uyarlama: Mehmet Can Çiftçibaş

♩=100

mf 4. parmağı basılı tutun.

Lamda da Şişesiz Yanmaz mı

Dizi: Segâh Yöresi: Gaziantep
Uyarlama: Mehmet Can Çiftçibaş

♩=120

mf 3. parmağı basılı tutun.

Figure 9. Example of a piece (Çiftçibaş, 2021)

In this method, which covers the intermediate level, folk songs are included after the presentation of the scales belonging to the relevant *makams*, but no etudes or exercises that could be considered instructional are provided. Therefore, it is regarded as an album.

It is thought that this book, where folk songs from various regions are written in the tempered system and presented as an album, contributes to the field by allowing individuals who continue their cello education within a Western framework to recognize and perform folk songs from their own culture and by introducing our folk songs to the Western world.

The Took of Anatolian Melodies with Thumb Technique in Cello Education

For individuals who experience difficulty in learning the thumb technique in cello education, etudes have been created based on familiar melodies, adhering to teaching principles such as "from known to unknown" and "from local to universal." The aim is to make the learning of this challenging technique easier and more effective.

The content of the method includes:

- Explanations about the use of the book,
- Visual-supported explanations of the positions to be used in the book,
- Basic exercises for positions,
- *Makamsal* exercises for positions,
- Arranged folk songs for positions,
- Information about the folk songs in the book.

BİRİNCİ KONUMA YÖNELİK TEMEL ALIŞTIRMALAR

1

2

3

Figure 10. Example of exercise (Topaloğlu, 2022)

BİRİNCİ KONUMA YÖNELİK DÜZENLENMİŞ TÜRKÜLER

Daldalan
Hüseyinî (Mi Karar) İki Viyolonsel İçin Düzenleme
Taner TOPALOĞLU

Cello I

Cello II

I

II

I

II

Figure 11. Example of Folk Song (Topaloğlu, 2022)

In this technique, called the "Pus position," four different positions are introduced through exercises, and 14 folk songs in *Hüseyinî* and *Kürdî makams* selected from the Turkish Folk Music repertoire of the Turkish Radio and Television Corporation are presented for the practiced positions.

In this method, which covers intermediate and advanced levels, the exercises and folk songs are written in the tempered system. It is considered that the method contributes to the field by enabling individuals continuing their cello education within a Western framework to acquire the thumb technique, recognize folk songs from our regions, and perform them polyphonically.

The scope and content analyses of the methods are presented below in tabular form.

Table 2. Analysis of Turkish music cello teaching method books (1)

Methods	Book 1	Book 2	Book 3	Book 4	Book 5
Covered Level	Intermediate/Advanced	Intermediate	Advanced	Advanced	Intermediate
System Used	Turkish Music	Turkish Music	Turkish Music	Tempered	Tempered
General Music Information	+	-	-	-	-
Information About the Organology of the Cello	-	-	-	-	-
History of the Cell	-	-	-	-	-
Information on Cello and Bow Holding	-	-	-	-	-
Theoretical Knowledge of Turkish Music	+	+	-	-	-
Usûl Information	-	-	-	-	-
Scale Studies	+	-	+	-	+
Etudes/Exercises	+	+	+	+	-
Example Pieces	-	-	-	+	+
Number of Etudes	25	21	40	9	0
Number of Pieces	0	0	0	13	21
Makam	1 Çargâh Etude 1 Sultani Yegâh Etude 1 Şedd-i Arabân Etude 1 Sûz-i Dil Etude 1 Acem Aşîrân Etude 1 Evîç Etude 1 Evcâra Etude 1 Mahûr Etude 1 Rast Etude 1 Nikriz Etude 1 Basit Sûzinak Etude 1 Nihavend Etude 1 Hicâzkâr Etude 1 Kürdîlîhicâzkâr Etude 1 Neveser Etude 1 Uşşâk Etude 1 Hüseyîni Etude 1 Büselik Etude 1 Karçıgar Etude 1 Hicâz Etude 1 Zîrgüleli Hicâz Etude 1 Saba Etude 1 Segâh Etude 1 Hûzzâm Etude	1 Hicâz Etude 1 Humâyûn Etude 1 Nihâvend Etude 1 Hûzzâm Etude 1 Kürdîlîhicâzkâr Etude 1 Rast Etude 1 Uşşâk Etude 1 Hüseyîni Etude 1 Muhayyerkürdi Etude 1 Mâhur Etude 1 Hicâzkâr Etude 1 Segâh Etude 1 Karçıgar Etude 1 Basit Sûzinak Etude 1 Acem Kürdi Etude 1 Acemaşîran Etude 1 Muhayyer Etude 1 Büselik Etude 1 Nikriz Etude 1 Beyati Etude	5 Rast Etude 2 Segâh Etude 3 Nihavend Etude 1 Mahur Etude 1 Kürdîlîhicâzkâr Etude 1 Rast Etude 2 Büselik Etude 5 Uşşâk Etude 1 Beyâtî Etude 2 Hüseyîni Etude 5 Hicâz Etude 2 Karçıgar Etude 2 Sâbâ Etude 1 Şevkefzâ Etude 1 Muhayyerkürdi Etude 2 Hûzzâm Etude 1 Sultânîyegâh Etude 1 Ferahfezâ Etude 1 Evcâra Etude 1 Kürdîlîhicâzkâr Etude	10 Hüseyîni Pieces 6 Hüseyîni Etude 3 Kürdi Pieces 3 Kürdi Etude 1 Acemaşîran Etude 1 Kürdi Etude 2 Büselik Etude 5 Uşşâk Etude 1 Beyâtî Etude 2 Hüseyîni Etude 5 Hicâz Etude 2 Karçıgar Etude 2 Sâbâ Etude 1 Şevkefzâ Etude 1 Muhayyerkürdi Etude 2 Hûzzâm Etude 1 Sultânîyegâh Etude 1 Ferahfezâ Etude 1 Evcâra Etude 1 Kürdîlîhicâzkâr Etude	9 Çargâh E Pieces 8 Segâh Pieces 6 Kürdi Pieces 2 Mahûr Pieces 2 Acemaşîran Pieces 4 Evîç Pieces 2 Nihavend Pieces 14 Hicâz Pieces 2 Nikriz Pieces
Usûl	Up to 12 Beats	Up to 10 Beats	Up to 10 Beats	Up to 10 Beats	Up to 12 Beats

Book 1: Viyolonsel İçin Türk Müziği Dizileri **Book 2:** Türk Müziğinde Viyolonsel Eğitimi **Book 3:** Viyolonsel İçin 40 Makamsal Etüt **Book 4:** Viyolonsel Eğitiminde Başparmak Tekniği İle Anadolu Ezgileri **Book 5:** Viyolonsel İçin Türk Halk Ezgileri Albümü + Includes - Does Not Include

The scope and contents of the methods are summarized in the table 1 provided above. Accordingly, it is observed that the existing methods cover intermediate and advanced levels, there is no beginner method, and since cello education starts on a Western basis, the content, scope, and system used by the methods cannot be attributed to a specific source. Even the methods written specifically for the Turkish music system differ in terms of theoretical knowledge, and the number of *makams* and *usûls* used in intermediate and advanced-level methods is insufficient for the targeted level. It is also observed that the information and explanations provided about the *makams* and *usûls* in the methods are inadequate. It is believed that methods developed or created considering these criteria will elevate Turkish music cello education to a better level and address the need for a method that teaches Turkish music without relying on the tempered system.

Theses on Cello Education/Teaching in Türkiye

Thesis 1. Cello Education in Music Education Departments of Faculties of Education in Türkiye

In this doctoral thesis, the general state of cello education in the music education departments of Türkiye's faculties of education (Gazi, MU Atatürk EF, Dokuz Eylül University Buca EF, Uludağ University, Selçuk University, Karadeniz Technical University, İnönü University, Atatürk University Kazım Karabekir EF, Abant İzzet Baysal University, Niğde University, Anadolu GSL) was investigated through interviews, surveys, and source scanning methods conducted with 14 faculty members, 3rd- and 4th-year undergraduate students, 8 faculty members conducting teaching practice, 10 heads of main art branches of instrument education, and 10 heads of music education departments. The current state during the 1996–1997 academic year was revealed, showing that only 7% of teaching staff included works of

contemporary Turkish music in cello education, while 29% of instructors utilized Turkish-language resources. A significant deficiency noted was the lack of traditional and contemporary Turkish music works in the cello music repertoire (Demirbatır, 1998).

Thesis 2. A study on the views of violoncello teachers and students aimed at violoncello education in anatolia fine arts high school in Turkey

In this master's thesis, teacher and student opinions on cello education in music departments of Anatolian Fine Arts High Schools (Ankara, Balıkesir, Eskişehir, Isparta, Kayseri, Kırıkkale, Malatya, Samsun, Sinop, Uşak, Van) were gathered through surveys and source scanning. The findings highlighted insufficient lesson hours, a lack of sufficient and qualified cellos in schools, an inadequate environment and equipment for practice, a lack of full-time cello instructors, and that 45.45% of teachers never used Turkish music scales in their lessons (Özgün, 2006).

Thesis 3. A research about the violoncello education and playing systems in Turkish classical music

This master's thesis aimed to identify and evaluate practices related to Traditional Turkish Classical Music (TTCM) cello teaching and performance in Türkiye. The study revealed that TTCM cello instructors and performers heavily utilized Western cello methods, instrumental pieces, and vocal pieces from TTCM, as well as specific etudes prepared for TTCM cello education. It concluded that no written method exists for TTCM cello education, theoretical knowledge is not separately addressed in TTCM cello lessons, and creating a method incorporating the experiences of Western music cello education could make TTCM cello teaching more systematic and organized (Değirmencioğlu, 2006).

Thesis 4. Research of the place significance and usage patterns of Turkish Music in Cello Studies at Musical Teaching departments of Education Faculties

This doctoral thesis tested the use of makamsal etudes and exercises in cello education courses at Selçuk University's Music Education Department. Findings revealed that 33.33% of students found makamsal etudes and exercises harder to decipher compared to tonal system works, 50% enjoyed playing them, 58% were more easily motivated while playing them, 16% included makamsal etudes and works in their repertoire, and 25% believed they contributed to the cello education process (Kaya, 2010).

Thesis 5. Introducing a systematic approach to modal violoncello teaching method

This doctoral thesis aimed to develop a systematic, scientific teaching method to address the problem of method deficiency in makamsal cello education and determine its impact on student success. A teaching method was developed, a lesson plan was created based on this method, and it was applied to an experimental group. The results showed positive improvements in students' solfege reading, accurate performance of *koma* pitches, and correct rhythm and intonation (Değirmencioğlu, 2011).

Thesis 6. The Seyr-i Nâtik created in the 15th century used in Turkish music from the makams assessment of the availability of cello teaching

This doctoral thesis developed a new model for the cello using 50 pieces, each 16 measures long, in the Aksak Semâi *usûl*, considered a study and exercise resource for Turkish musical instruments. Expert opinions indicated that the Seyr-i Nâtik example positively impacted cello students in terms of performance, interpretation, and knowledge of *makam*. The 50 *makams* provided a sufficient resource for cello study, reflected the style of classical Turkish music combined with international cello performance techniques, and had 89.33% usability in education (Karaca, 2016).

Thesis 7. The evaluation of Turkish pieces' place and necessity in violoncello training applied in education faculty fine arts education department's music education programs

This master's thesis investigated the necessity and sufficiency of cello works containing Turkish motifs in cello education, based on the opinions of cello instructors and students. Survey data showed that most students were not adequately aware of Turkish music elements in cello works, most instructors had insufficient access to works composed with Turkish music motifs, and both instructors and students faced challenges due to technical and makamsal structures and the unsuitability of the works for their levels (Özer, 2017).

Thesis 8. A study on the use of Kangal and local folk songs in violoncello education

In this master's thesis, based on the lack of folk music examples in cello education, Kangal and its region's folk songs were arranged in the tempered system to be performed using cello playing techniques. It was concluded that the arranged folk songs are suitable for the content of lessons based on the respective levels and periods (Eroğlu, 2018).

Thesis 9. The assessment of books used based on the curriculum of fine arts high schools cello course in terms of their Turkish music learning outcomes

In this master's thesis, Fine Arts High School cello teaching books were examined and teacher and student opinions were collected to evaluate the books used in the Fine Arts High School cello course curriculum in terms of Turkish music outcomes. It was concluded that teachers found the order of the *makam* process suitable in the books written in the tempered system, preferred the tempered sound system when teaching *makams*, used the bass clef in the teaching of Turkish music pieces, and thought that the issues in performing Turkish music pieces with both right and left hands stemmed from the lack of sufficient etudes and their incompatibility with traditional patterns. Additionally, students had difficulty transposing Turkish music pieces, and the curriculum and teaching books were generally found inadequate for the teaching process of Turkish music (Bilir, 2018).

Thesis 10. A study on the use of Kütahya folk songs for violoncello education

In this master's thesis, to test the usability of folk songs from the Kütahya region in cello education, the folk songs were analyzed in terms of *makam*, structure, and technique. Difficulties were identified, such as rhythmic patterns and the abundance of small note values, as well as *koma* sounds. Positions, finger numbers, ties, and nuances were rewritten and adapted for the cello (İşler, 2019).

Thesis 11. Problems and solution proposals at the beginning level in Turkish music violoncello education

In this master's thesis, a source review and survey were conducted to evaluate the challenges faced by beginner students during basic cello education and to assess the outcomes of Turkish music cello education. It was found that there is a necessity to use Turkish works and the need to present these methods effectively during the education process. The study highlighted the widespread use of Western music methods as a significant issue. Despite the abundance of *makams* and works attributed to Tanburi Cemil Bey, it was concluded that there is insufficient care and inclusion of these in the education process (Sulukaya, 2019).

Thesis 12. Adaptation of bow techniques used in cello education to Turkish music and its evaluation

In this doctoral thesis, bow techniques used in cello were adapted to Turkish music melodies and added to the literature. Bow techniques were adapted to selected folk dances from the TRT Turkish Folk Music repertoire and applied to an experimental group consisting of Gazi University Education Faculty Fine Arts Department students during the 2018-2019 spring semester. The study concluded that the experimental group showed positive contributions in terms of knowing and applying these bow techniques, as well as acquiring knowledge about *makam* scales (Çınardal, 2020).

Thesis 13. An investigation on the evaluation of undergraduate level of Turkish music cello education programs and trainer's views

This proficiency in art thesis aimed to evaluate Turkish music cello education and educator opinions in conservatories providing Turkish music education. In addition, the study aimed to identify bow and left-hand techniques for pieces to be performed in exams in Turkish music cello teaching. Data from surveys and interviews revealed that educators agreed on the objectives, course content, and primary and supplementary resources for cello education. It was concluded that Turkish music theoretical and practical outcomes align with program outputs in the 8-semester teaching plan. The study also emphasized the necessity of writing more methods specifically for Turkish music cello education, creating a repertoire suitable for the instrument's physical and technical features, and incorporating improvisations by prominent performers like Tanburi Cemil Bey into education (Kılıç, 2020).

Thesis 14. Evaluation of cello education in teacher training institutions in line with the views of instructors and students

This master's thesis evaluated cello education in the Marmara region based on the opinions of faculty members and students. It was found that students mainly faced issues with bow techniques, left-hand intonation, and the *pus* technique. Additionally, insufficient practice was attributed to a lack of motivation, the size and transport difficulties of the cello, and the heavy workload of other courses. Most resources used by instructors for methods, pieces, and exercises were Western-based. One instructor suggested that Turkish music pieces should not be played due to the negative effects of *koma* sounds on positions, intonation, and tonal perception, but cited examples of Turkish works that could be played, such as Şinasi Çilden's "Anatolian Melodies for Two Cellos" and arranged folk songs (Kale, 2021).

Thesis 15. Violoncello education in Turkish maqam music: Etudes for beginner level

This master's thesis highlighted the lack of beginner methods in conservatory, fine arts high school, and private music course curricula. Etudes and exercises were created based on simple *makams* to parallel education. As a result, students achieved the level to perform basic works written in simple *makams* (Sığırtmaç, 2022).

Thesis 16. The opinions of academic musicians on teaching technics and methods used in violoncello education of 8-11 age children

This master's thesis explored teaching methods and resources for beginner cello education for 8-11-year-olds through faculty opinions. The interviews revealed that the Suzuki method was predominantly used, with methods adapted to individual student capacities, supported by solfege, rhythmic studies, and technology. It was concluded that beginner methods were solely Western-based (Azad, 2023).

Thesis 17. Higher education institutions that provide Turkish music education and faculty's opinions on traditional cello education in these institutions

In this master's thesis, faculty opinions on curricula, written resources, and clefs used in cello education in 12 higher education institutions providing Turkish music education were collected. Ten instructors emphasized the necessity of teaching Turkish music using the treble clef, while 11 suggested starting with Western-based cello education for the first two semesters before transitioning to Turkish music. Instructors noted the absence of written methods for Turkish music cello education and highlighted the lack of updated resources specific to Turkish music as of 2023 (Ayhan, 2023).

Thesis 18. A study on arrangement of Turkish folk music and children's songs in cello education

This master's thesis focused on arranging Turkish folk music and children's songs to help beginner cello students start more effectively. Folk songs familiar to students were arranged with specific positions, bows, and finger numbers to minimize difficulties at the beginner level. The study found that the arrangements included intervals such as thirds, fifths, and sixths for children's songs, and fourths to ninths for folk music pieces. Performance techniques such as *détaché*, *legato*, *pizzicato*, *arco*, and *staccato* were emphasized, aligning with the objectives of fine arts high school cello curricula (Karadurmuş, 2024).

Thesis 19. A comparative analysis of cello education in Turkey in the context of western music and Turkish music

This doctoral thesis aims to provide general information about Turkish and Western music, outline their history, technical and theoretical aspects, differences, and reasons for these differences, as well as the curriculum documentation of the institutions where these two fields are applied. The research concludes that the two fields are culturally and artistically very distinct and foreign to each other. Specifically, for Turkish music: it is recommended to continue using the treble clef for all instruments and human voices due to its traditional use; the late start of the written tradition has hindered the development of notation compared to Western music, highlighting the need for further work in this area; and the existence of multiple alternative notation systems without a consensus creates challenges in overcoming notation issues. For Western music: the problem of transposition can be resolved by using different clefs, and the lack of traditional Turkish music pieces or knowledge in classical Western music education curricula results in those trained in

classical Western music having no knowledge of traditional Turkish music, whereas those trained in traditional Turkish music possess at least basic knowledge of classical Western music (Ünver, 2024).

Conclusion

Method of Turkish Music Scales for Cello

This method, specifically written for Turkish music scales for cello, covers intermediate and advanced levels. It benefits individuals who have completed their cello education based on the Western system by introducing Turkish music scales and basic *usûls*. However, the arrangement of scales according to the tempered system and their presentation based on the Arel-Ezgi-Uzdilek system limit the learning to the schematic understanding of scales. The method does not address *koma* sounds or the melodic characteristics of *makams*, thereby failing to fully convey the theory and practice of Turkish music. The method serves individuals continuing their cello education based on the Western system and who wish to perform Turkish music melodies polyphonically in the tempered system.

Method of 40 Makamsal Etudes for Cello

This method offers studies for performers at different levels to gain mastery in Turkish music, especially in scales, *usûls*, and *makams*. Considering the lack of beginner-level methods in Turkish music cello education, the study concludes that individuals starting their education with the Western system can understand the fundamental differences between Turkish and Western music through examples of the same etudes presented within two different systems. The etudes, written with consideration of the melodic characteristics of *makams*, are instructional. However, the limitation of *usûls* to those with up to 10 beats and the need for improvement in the structuring of these *usûls* in the etudes are noted to facilitate better understanding.

Method of Cello Education in Turkish Music

The method addresses the problem of transposition encountered by individuals who begin cello with a Western foundation and later wish to perform Turkish music. It clarifies this issue and identifies the sound range to be used in Turkish music performances. Additionally, the method creates a schematic approach by positioning the *makam* scales on the fingerboard, enabling the realization of Turkish music performance. The method concludes that arranging the *makams* without considering details like their tonic or key signature can create difficulties during the learning phase. For understanding this intermediate and advanced-level method, knowledge of Turkish music theory, especially the names of pitches, is necessary. While presenting pitches with visually supported diagrams facilitates understanding their positions, auditory support is essential to achieve accurate pressure on the fingerboard.

Method of Turkish Folk Melodies Album for Cello

It has been concluded that this book, aimed at the intermediate level, was written in the tempered system and presented as an album to introduce folk songs from our culture to individuals. However, it does not provide any information about Turkish music education.

Method of Anatolian Melodies with Thumb Technique in Cello Education

It has been concluded that etudes were developed for individuals experiencing difficulty with the thumb technique in Turkish music, following a progression from the known to the unknown and using melodies assumed to be familiar to their ears. This approach aims to make the *pus* technique more learnable. This method, addressing intermediate and advanced levels, includes 14 folk songs in the Hüseyinî and Kürdî *makams*. While it carries the title of Turkish music, it was written specifically within the tempered system and only utilized melodies and pieces from Turkish music, thus lacking instructional value about Turkish music itself.

Analysis of Theses on Cello Education in Türkiye

Upon examining academic research, one of the main issues specific to Turkish music is the curriculum. Theses examining the curricula of institutions providing cello education reveal that there is no written, consistent curriculum shared among all institutions. Other issues include insufficient lesson hours, a lack of Turkish music theory and practice in course content, the absence of Turkish music etudes, pieces, composers, and performers in lessons, insufficient

theoretical knowledge, etudes, and works related to Turkish music in textbooks, and a reliance on the tempered system that does not fully reflect Turkish music or achieve desired outcomes.

Moreover, due to the late start of the written tradition and the underdevelopment of notation compared to Western music, a methodology on the path to creating a "school" has not yet been developed. While many academic studies could serve as methods, they remain academic works without being structured and presented as methods. The issues encountered in the proposed teaching materials and written methods include a lack of a common language, the reliance on the tempered system in many of the etudes and models created, the absence of a teaching method when forming the methods, and the disregard for criteria such as level, age, and technique.

When examining the written methods, the lack of a beginner-level method emerges as a major issue. Starting with Western-based books at the beginner level and transitioning to Turkish music after reaching a certain level creates problems due to the significant differences between the two music systems. The inability of *koma* sounds in Turkish makam music to correspond in the tempered system, differences in clefs, and the four-note discrepancy between the two systems make this transition process extremely difficult, even hindering the establishment of a system for Turkish music education.

It has been concluded that there is a necessity to create a beginner-level method, design methods with consideration for level criteria, convert academic studies into methods with some effort and care, and emphasize the importance of using a common language in method creation.

Recommendations

- Establishing a written curriculum and a monitoring system for learning outcomes in institutions providing cello education, forming a committee composed of educators and officials responsible for curriculum development and supervision,
- Increasing the lesson hours allocated for cello classes in educational institutions, ensuring adequate facilities and materials for cello practice, and allocating necessary budgets for this purpose,
- Writing a comprehensive beginner-level method to avoid starting Turkish music cello education with Western-based methods,
- Writing beginner, intermediate, and advanced methods or a series of methods that incorporate positions, intervals, basic *makams*, and fundamental *usûls* according to the modal system and requirements of Turkish music in cello education,
- Avoiding confusion by ensuring that cello methods written specifically for Turkish music are not based on the tempered system but instead reflect the theory and performance of Turkish music,
- Creating methods that cater to all ages, considering criteria such as age, level, and technique,
- Employing a common language, technique, and method in the creation of methods,
- Including not only *makam* scales but also the melodic characteristics of *makams* and exercises to develop pitch control in methods,
- Incorporating basic to compound *makams*, small to large rhythmic *usûls*, and various instrumental and vocal forms in the methods while considering the students' level,
- Including interpretative elements in methods to enhance style and expression, drawing on the performances of established figures to create various exercises with a shared language,
- Using the treble clef commonly used in Turkish music sound systems and compositions, ensuring education is conducted with the treble clef,
- Transforming academic studies in education, teaching methods, and methods into teaching materials rather than leaving them as theses and articles,
- Organizing symposia, workshops, and training sessions among cello educators, instructors, and teaching staff in educational institutions to share knowledge and develop a common ground.

Limitations of Study

This research is limited to methods specifically written for Turkish music cello education and academic studies providing information about methods, curricula, sources, and teaching processes in cello education. All cello methods with the term "Turkish Music" were included in this study. Five books written in this field were accessible.

Biodata of Author



Gülcan Elibol was born in 1998 in the Meram district of Konya. Between 2012 and 2015, she received awards in both ensemble and solo performance categories at the "Youth Centers Inter-Turkish Music Competition." In 2016, she graduated from Konya Çimento Fine Arts High School. She completed her undergraduate studies in 2020 in the Music Teaching Department at Necmettin Erbakan University's Ahmet Keleşoğlu Faculty of Education. In February 2023, she completed her master's degree in the Department of Turkish Music at the Social Sciences Institute of Necmettin Erbakan University. She is currently pursuing her doctoral studies in the Department of Turkish Music at the same university's State Conservatory.



Dr. Özcan Çetik was born in 1990 in the Karapınar district of Konya. He completed his primary and secondary education in Nevşehir and his high school education at Aksaray Anatolian Fine Arts High School. He earned his undergraduate degree in 2013 from the Music Teaching Department at Necmettin Erbakan University's Ahmet Keleşoğlu Faculty of Education. In 2012, he received an honorable mention award in the young instrumentalists' performance competition organized by Gazi University's Turkish Music State Conservatory. Between 2012-2013, he served as a cellist in the TRT Ankara Radio Youth Choir, and in 2013-2014, in the TRT Istanbul Radio

Youth Choir. In 2017, under the supervision of Prof. Leyla Pınar Tansever, he completed his master's degree in the Turkish Music Department at Haliç University's Social Sciences Institute, Conservatory of Turkish Music. In 2019, he was admitted to the doctoral program in the Music Education Department at Necmettin Erbakan University's Institute of Educational Sciences in Konya. He completed his doctoral education in the Turkish Music Department at the same university in 2022. In 2023, he earned the title of Assistant Professor. He currently continues his duties as an Assistant Professor in the Instrument Education Department at Necmettin Erbakan University's Turkish Music State Conservatory, where he performs his art and pursues his academic studies.

References

- Akpara, K. (2019). *Türk müziği eğitimi verilen konservatuvarlarda viyolonsel eğitim öğretiminin yeri, önemi ve kullanım durumu (The place, importance and use of cello education in the conservatory given Turkish music education)*. Master thesis. Selçuk University. Konya, Türkiye.
- Ayhan, L.E. (2023). *Türk müziği eğitimi veren yükseköğretim kurumları ve bu kurumlarda yürütülen geleneksel viyolonsel eğitime ilişkin öğretim elemanı görüşleri (Higher education institutions that provide Turkish music education and faculty's opinions on traditional cello education in these institutions)*. Master thesis. Gazi University. Ankara, Türkiye.
- Azad, D. (2023). *8-11 yaş grubu çocuklarda viyolonsel eğitiminde kullanılan öğretim yöntemleri ve metotlara yönelik öğretim elemanı görüşleri (The opinions of academic musicians on teaching technics and methods used in violoncello education of 8-11 age children)*. Master thesis. Bursa Uludağ University. Bursa, Türkiye.
- Bilir, F.U. (2018). *Güzel Sanatlar Lisesi Çello Dersi Öğretim Programına Dayalı Kullanılan Kitapların Türk Müziği Kazanımları Açısından Değerlendirilmesi (The assessment of books used based on the curriculum of fine arts high schools cello course in terms of their Turkish music learning outcomes)*. Master thesis. Van Yüzüncü Yıl University. Van, Türkiye.
- Çiftçi, M. C. (2021). *Viyolonsel İçin Türk Halk Ezgileri Albümü (Turkish Folk Melodies Album for Cello)*. Ankara: Gece Kitaplığı.
- Çınardal, L. (2020, Haziran). *Viyolonsel Öğretiminde Kullanılan Yay Tekniklerinin Türk Müziğine Uyarlanması Ve Değerlendirilmesi (Adaptation of bow techniques used in cello education to Turkish music and its evaluation)*. Doctoral thesis. Gazi University. Ankara, Türkiye.
- Değirmencioğlu, L. (2006). *Geleneksel Türk Sanat Müziği Viyolonsel Öğretim ve İcra Yöntemleri Üzerine Bir Araştırma (A research about the violoncello education and playing systems in Turkish classical music)*. Master thesis. Erciyes University. Kayseri, Türkiye.
- Değirmencioğlu, L. (2011). *Makamsal Viyolonsel Öğretim Yöntemine Sistematik Bir Yaklaşım (Introducing a systematic approach to modal violoncello teaching method)*. Doctoral thesis. İnönü University. Malatya, Türkiye.

- Değirmencioglu, L., & Andaç, H. M. (2021). *Türk Müziğinde Viyolonsel Eğitimi Bolabenk Akortta 20 Makam Dizisi (Cello Training in Turkish Music 20 Makam Series in Bolabenk Tuning)*. Ankara
- Demirbatır, R.E. (1998). *Türkiye'deki Eğitim Fakülteleri Müzik Eğitimi Bölümlerinde Viyolonsel Eğitimi (Cello Education in Music Education Departments of Education Faculties in Türkiye)*. Doctoral thesis. Gazi University. Ankara, Türkiye.
- Demirci, B. (2013). *Viyolonsel Eğitiminde Geleneksel Türk Müziğine Yönelik Bir Çalışma Modeli. (A Study Model for Traditional Turkish Music in Cello Education)*. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 28(1), 117-129.
- Demirci, B. (2013). *Viyolonsel İçin Türk Müziği Dizileri (Turkish Music Series for Cello)*. Ankara: Pegem Akademi.
- Eroğlu, Ö. (2018). *Kangal Ve Yöresi Türkülerinin Viyolonsel Eğitiminde Kullanılmasına İlişkin Bir Çalışma (A study on the use of Kangal and local folk songs in violoncello education)*. Master thesis. Gazi University. Ankara, Türkiye.
- İşler, Ş. (2019). *Kütahya Türkülerinin Viyolonsel Eğitiminde Kullanılması Üzerine Bir Çalışma (A study on the use of Kütahya folk songs for violoncello education)*. Master thesis. Gazi University. Ankara, Türkiye.
- Kale, A. F. (2021). *Öğretmen Yetiştiren Kurumlardaki Viyolonsel Eğitiminin Öğretim Elemanı Ve Öğrenci Görüşleri Doğrultusunda Değerlendirilmesi (Evaluation of cello education in teacher training institutions in line with the views of instructors and students)*. Master thesis. İstanbul Okan University. İstanbul, Türkiye.
- Kaptan, Z. (2022). *Türk müziği çalgılarında öğretim metot ve metodoloji üzerine bir inceleme. CUJOSS (Cumburiyet Universtiy) Faculty of Letters Journal of Social Sciences*, 46(1), 95-101.
- Karaca, T. (2016). *Türk müziği'nde 15. Yy.'da kullanılan makamlardan oluşturulan seyr-i nâtik örneğinin viyolonsel öğretiminde kullanılabilirliğinin değerlendirilmesi (The Seyr-i Nâtik created in the 15th century used in Turkish music from the makams assessment of the availability of cello teaching)*. Doctoral thesis. Gazi University. Ankara, Türkiye.
- Karadurmuş, F. (2024, Ağustos). *Viyolonsel Eğitiminde Türk Halk Müziklerinin Ve Çocuk Şarkılarının Düzenlenmesi Üzerine Bir Çalışma (A study on arrangement of Turkish folk music and children's songs in cello education)*. Master thesis. Sivas Cumhuriyet University. Sivas, Türkiye.
- Kaya, E. E. (2010). *Müzik Öğretmeni Yetiştiren Kurumlarda Makamsal Etüd Ve Egzersizlerle Viyolonsel Eğitiminin Uygulanabilirliği (Research of the place significance and usage patterns of Turkish Music in Cello Studies at Musical Teaching departments of Education Facuties)*. Doctoral thesis. Selçuk University. Konya, Türkiye.
- Kılıç, A. (2020). *Lisans Düzeyi Türk Müziği Viyolonsel Eğitimi Programlarının Değerlendirilmesi Sonucu Elde Edilen Bulgulara Yönelik Eğitimci Görüşleri Üzerine Bir Araştırma (An investigation on the evaluation of undergraduate level of Turkish music cello education programs and trainer's views)*. Art competency thesis. Afyon Kocatepe University. Afyonkarahisar, Türkiye.
- Küçükahmet, L. (2017). *Öğretim İlke ve Yöntemleri (Teaching Principles and Methods)*. İstanbul: Nobel Publishing.
- Özen, N. (2004). *Çalgı Eğitiminde yararlanılan müzik eğitimi yöntemleri (music education methods used in instrument training)*. *Gazi Eğitim Fakültesi Dergisi*, 24(2), 57-63.
- Özer, S. (2017). *Eğitim Fakültesi Güzel Sanatlar Eğitimi Bölümü Müzik Eğitimi Anabilim Dalı Öğretim Programında Uygulanan Viyolonsel Eğitiminde Türk Eserlerinin Yerinin ve Gerekliğinin Değerlendirilmesi (The evaluation of Turkish pieces' place and necessity in violoncello training applied in education faculty fine arts education department's music education programs)*. Master thesis. Bursa Uludağ University. Bursa, Türkiye.
- Özgün, Ö. (2006). *Türkiye'deki Anadolu Güzel Sanatlar Liseleri Müzik Bölümlerinde Viyolonsel Eğitime Yönelik Öğretmen ve Öğrenci Görüşleri (A study on the views of violoncello teachers and students aimed at violoncello education in anatolia fine arts high school in Turkey)*. Master thesis. Gazi University. Ankara, Türkiye
- Siğirtmaç, G. (2022). *Türk Makam Müziği'nde Viyolonsel Eğitimi: Başlangıç Seviyesi İçin Etütler (Violoncello education in Turkish maqam music: Etudes for beginner level)*. Master thesis. İstanbul Technical University. İstanbul, Türkiye.
- Sulukaya, V. (2019). *Türk Müziği Viyolonsel Eğitiminde Başlangıç Seviyesinde Karşılaşılan Sorunlar ve Çözüm Önerileri (Problems and solution proposals at the beginning level in Turkish music violoncel education)*. Master thesis. Van Yüzüncü Yıl University. Van, Türkiye.
- Topaloğlu, T. (2022). *Viyolonsel Eğitiminde Başparmak Tekniği ile Anadolu Ezgileri. (Anatolian Melodies with Thumb Technique in Cello Training)*. Konya: Eğitim Publishing.
- Tutu, S. B. (2001). *Türk Müziğinde Viyolonsel Eğitimi (Violoncello education in Turkish music)*. Master thesis. Ege University. İzmir, Türkiye.
- Tutu, S. B. (2014). *Viyolonsel İçin 40 Makamsal Etüt (40 Modal Etudes for Cello)*. İzmir: Ege University Publishing.
- Uçan, A. (2012). *Eduard Zuckmayer ve Cumburiyet Müzik Eğitimi (Eduard Zuckmayer and Republic Music Education)*. Ankara: Müzik Eğitimi Publishing.
- Ünver, Ş. C. (2024). *Çok Sesli Müzik ve Türk Musikisi Bağlamında Türkiye'de Çello Eğitiminin Karşılaştırmalı İncelenmesi (A comparative analysis of cello education in Turkey in the context of western music and Turkish music)*. Art competency thesis. Anadolu University. Eskişehir, Türkiye.
- Yıldırım, A., & Şimşek, H. (2021). *Sosyal bilimlerde nitel araştırma yöntemleri (qualitative research methods in social sciences)*. Ankara: Seçkin.