
THE REFLECTIONS OF THE DIGITAL AGE ON THE *KANUN* EDUCATION: THE USE OF QR CODES

Dijital Çağın Kanun Eğitimine Yansımaları: Karekod Kullanımı

Muattar Demet DOĞRUÖZ *

ABSTRACT

Instrument training is a fundamental component of music education, aiming to enhance musical understanding, develop skills, and foster creativity through learning to play an instrument. Over the past decades, rapid technological advancements have impacted various fields, particularly education, leading to new approaches, applications, and innovations. The widespread adoption of digitalization, an outcome of technological progress, has expanded and diversified educational tools, requiring educators to integrate them into their teaching methods. The Covid-19 pandemic in 2020, which posed serious health risks, made adaptation to digital education essential. The increasing integration of technology in education has enabled the development of new teaching and learning methods. One such approach, blended learning, combines face-to-face and online environments, merging traditional classroom activities with digital resources such as online study materials. In this context, the present study examines the role of QR codes in *kanun* education, a traditional Turkish musical instrument, within the framework of digitalization. Following a case study, the research analyzes previous studies on QR code use in *Kanun* instruction. The study explores the effects of QR codes through sample exercises on digital platforms. Moreover, beginner-level exercises incorporating audiovisual support are proposed to enrich *kanun* education and foster a more interactive learning experience.

Anahtar Kelimeler: Education, Music Education, Blended Education, Instrumental Education, *Kanun* Education, QR Code.

ÖZ

Çalgı eğitimi, müzik eğitiminin bir boyutu olarak bireylerin çalgı öğrenme yoluyla müzikal anlayışı artırmayı, müzikal becerilerini ve yaratıcılığını geliştirmeyi hedefleyen bir süreçtir. Son yarım asırda teknolojinin ivme kazanarak gelişmesi birçok alana yansımış, özellikle eğitim uygulamalarında yeni yaklaşımlara, uygulamalara ve açılımlara sebep olmuştur. Teknolojinin getirdiği olan dijitalleşmenin yaygınlaşmasıyla eğitim araçları çoğalmış, çeşitlenmiş ve eğitimciler için bu araçları kullanma gereği doğmuştur. 2020 yılında ortaya çıkan Covid-19 virüsünün insan sağlığını tehdit etmesi sonucunda yaşanan pandemi nedeniyle, eğitimcilerin dijital eğitim sürecine adapte olmaları zaruri hale gelmiştir. Teknolojinin eğitim alanında yaygınlaşması, öğrenme ve öğretme yöntemlerine dair yeni yaklaşımların ortaya çıkmasına olanak sağlamıştır. Bu yaklaşımlardan biri olan harmanlanmış eğitim, yüz yüze ve çevrim içi öğrenme ortamlarını birleştirerek, geleneksel sınıf ortamındaki eğitim etkinlikleri ile çevrim içi çalışma materyalleri gibi dijital kaynakların birarada kullanılmasını incelemektedir. Bu belirlenimlerden yola çıkılarak gerçekleştirilen araştırmanın amacı, Türk müziği çalgılarından biri olan Kanun eğitiminde, dijitalleşme çerçevesinde öğrenme öğretme sürecini zenginleştirmek amacıyla geliştirilen karekod kullanımının incelenmesidir. Bu araştırma teorik boyutta özel bir durum çalışmasıdır. Araştırma kapsamında Kanun eğitimine ilişkin karekod kullanılarak yayınlanmış çalışmalar incelenerek kavramsal çerçeve doğrultusunda örnek egzersizlerle dijital platformda kullanılan karekod uygulamasının Kanun öğretim sürecindeki etkileri/katkıları tartışılmıştır. Bunlara ek olarak, başlangıç düzeyindeki egzersiz örnekleri, görsel-işitsel kayıtlarla desteklenerek Kanun eğitiminde kullanılmak üzere önerilmiştir.

Anahtar Kelimeler: Eğitim, Müzik Eğitimi, Harmanlanmış Eğitim, Çalgı Eğitimi, Kanun Eğitimi, Karekod.

Araştırma Makalesi/Research Article Geliş Tarihi/Received Date: 09.02.2025 **Kabul Tarihi/Accepted Date:** 05.05.2025

* **Sorumlu Yazar/Corresponding Author:** Asst. Prof., Aydın Adnan Menderes University, m.dogruoz@adu.edu.tr, ORCID: 0000-0001-5909-7212

GENİŞLETİLMİŞ ÖZET

Geçtiğimiz yüzyılda yaşanan hızlı teknolojik gelişmeler, insan yaşamını derinden etkilemiş, özellikle eğitim alanında yeni yaklaşımlar, yöntemler ve araçlar geliştirilmesine olanak sağlamıştır. Teknolojinin sağladığı yaygın dijitalleşme, eğitim kaynaklarını çeşitlendirmiş ve bunların eğitimciler tarafından kullanılmasını kaçınılmaz hale getirmiştir. 2020 pandemi süreci, dijital eğitim süreçlerine uyum sağlama gerekliliğini gözler önüne sermiş, özellikle uzaktan müzik eğitiminde dijital platformlar üzerinde destekleyici kaynakların ihtiyacını ortaya koymuştur. Bu değişim, ilgili eğitim yöntemlerine uygun altyapının hızlı bir şekilde gelişmesini de hızlandırmıştır.

Makamsal yapısı ve icra özellikleri nedeniyle özgün bir üslup olarak tanımlanan Türk müziği sözlü kültür ürünü olduğundan, aktarımının sağlanmasında meşk yöntemini kullanmıştır. Bu yöntem, deneyimli ustalardan daha az deneyimli bireylere bilgi ve becerinin aktarılmasını içermekte ve sanatsal anlamda kapsamlı bir intikal sağlamaktadır. Geleneksel eğitim temeli olan meşk sisteminin yanı sıra -son yüzyılda özellikle Türk müziğinin yükseköğretim kurumlarına dâhil edilmesiyle birlikte- yazılı metinler çoğalmaya başlamış, aktarım yöntemlerinde çeşitlenmeler görülmeye başlanmıştır. Özellikle pandemi süreci ile birlikte eğitimde ivedilikle uygulanması icap eden teknolojiler, dijital çağın yaygınlaşmasını sağlamış ve Türk müzik kültürünün aktarımında yeni yöntem arayışlarını da beraberinde getirmiştir.

Araştırmanın amacı, kanun eğitiminde dijitalleşme çerçevesinde öğrenme öğretme sürecini zenginleştirmek hedefiyle alanyazında kullanılan karekod kullanımlarının incelenmesi ve örnek egzersizlerle dijital platformda kullanılabilecek materyallerin öğretim sürecinde beklenen etkileri/katkılarını değerlendirmektir. Araştırmanın amacı doğrultusunda; Kanun eğitiminde dijital platforma adapte edilebilen ders materyallerinin alan yayınlarında kullanılıp kullanılmadığı, ilgili materyallere ulaşılabilirlik durumu, Türk müziği geleneğinin aktarılmasında faydalanan meşk sistemine katkıları ve harmanlanmış eğitim modelinde ilgili materyallerin nasıl değerlendirilebileceği hususları araştırmanın alt amaçlarını oluşturmaktadır. Araştırma, nitel bir yaklaşımla, teorik bir durum çalışması çerçevesinde gerçekleştirilmiştir. Veriler, araştırmacı tarafından geliştirilen egzersizlerden oluşmaktadır ve *Kanun Eğitimi-1* kitabından (Doğruöz, 2024) elde edilmiştir. Bu araştırma, kanun eğitimi için destekleyici eğitim materyallerinin geliştirilmesinin ve bunların harmanlanmış öğrenme ortamlarına uyarlanmasının önemini vurgulamaktadır.

Harmanlanmış öğrenme, çevrim içi eğitimi geleneksel yüz yüze eğitim ile birleştiren bir yaklaşımdır. Teknoloji destekli ve yüz yüze öğrenmeyi entegre eden bu model, teorik bilgi ve uygulamalı becerilerin birlikte öğrenilmesi gereken çalgı eğitimi gibi disiplinler için özellikle etkili olmaktadır. Harmanlanmış öğrenme, etkileşimli platformlar aracılığıyla öğrencilere ek kaynaklar sunarak öğrenme deneyimini zenginleştirir. Doğru planlama, uygun teknolojik altyapı ve etkili yönetim ile bu eğitim modeli hem öğrenciler hem de öğretmenler için hem teorik hem de uygulamalı bilgi gerektiren disiplinlerde oldukça etkili olabilir. Ancak bu yaklaşımın başarısı, öğrencinin öz disiplini ve motivasyonunun yanı sıra, eğitimcinin hem dijital hem de geleneksel öğretim yöntemlerindeki yetkinliğine bağlıdır.

Kanun eğitimi, teknik becerilerin kazanılmasını, repertuvar öğrenimini ve geleneksel üslubu kapsayan bir süreçtir. 1976 yılında kurulan ilk Türk müziği konservatuvarından bu yana, kanun eğitimi yüz yüze ve uygulamalı bir yaklaşımla sürdürülmüştür. Bugün kanun eğitimi uygulamalarında, hızla güncel yaşama entegre olan dijitalleşme süreciyle beraber dijital destekli metodlar da yayınlanmaya başlamıştır (Aydoğdu & Aydoğdu, 2004; Karaduman, 2012; Baktagir, 2021; Baktagir, 2022).

Mobil bir teknoloji olan QR kodlar, çalgı eğitiminde ve kanun eğitimi içerikli kitaplarda da yer bulmaya başlamıştır (Baktagir, 2021; Baktagir, 2022). QR kodlarla desteklenen eğitim materyallerinin geleneksel nota sistemine ek olarak görsel-işitsel demolar sunarak öğrencilerin uygulamalı çalışma sürecini zenginleştirdiği, harmanlanmış eğitim gibi öğretim uygulamalarına alt yapı hazırlayacağı düşünülmektedir. Bu minvalde araştırmacı tarafından geliştirilen egzersiz örnekleri, görsel-işitsel kayıtlarla desteklenerek karekodlar yoluyla bu araştırma kapsamında sunulmuştur. Araştırmada ilk örnek olarak sunulan oktav egzersizinde nota metninde yer alan oktav tremolo tekniği, bağlı icrâ ve glissando nüansları karekod yoluyla uygulamalı olarak sunulmuştur. Araştırmada ikincil olarak sunulan arpej egzersizi örneğinde ise kanun icrâ tekniklerinde sıklıkla rastlanan sağ mızrap ana ezgide uygulanırken sol el eşliğinde mızrapsız çalım tekniği örneklendirilmiştir. Oktav ve arpej içeren bu ve benzeri tekniklerle tasarlanmış örneklerin aktarımında, müzik metni daha çok hatırlatma amacıyla kullanılabilmekte, uygulamada usta-çırak ilişkisi yani meşk sistemi etkin olarak kullanılmaktadır. Bu doğrultuda ilgili uygulamaların görsel-işitsel kayıtlarla desteklenmesinin öğrencinin derslere ön hazırlık sürecinde ve ders sonrası pratiklerinde etkili olacağı ve harmanlanmış eğitim yaklaşımına katkı sağlayacağı düşünülmektedir.

Ders materyallerinin karekod uygulamasıyla zenginleştirilmesinin, öğrencinin ders hazırlık aşamasını güçlendireceği, buna ek olarak yüz yüze eğitim sonrası özel çalışmalarını esnek ortamlarda da destekleyeceği öngörülmektedir. Ayrıca, öğrencinin sağlık sorunları gibi çeşitli durumlardan kaynaklı yüz yüze derslere katılım sağlayamadığı koşulları iyileştireceği düşünülmektedir. Bunlara ek olarak, yüz yüze eğitimin aksayabileceği deprem, pandemi ve benzeri olumsuz koşullara hazır bulunma açısından ilgili materyallerin çoğaltılarak çeşitlendirilmesinin eğitimde aksamaları asgari seviyeye indireceği öngörülmektedir. Bu nedenle, müzik eğitimi materyallerinin dijital platformlara aktarılması, çeşitlendirilmesi ve çoğaltılması, eğitim süreçlerinin verimliliğini artırmak için büyük bir potansiyel taşımaktadır. Bunlara ek olarak, ilgili materyallerin mobil teknoloji vasıtasıyla kolay ulaşılabilirliği dolayısıyla öğrencinin her an yararlanabileceği bir kaynak niteliği taşıdığı söylenebilir.

Sonuç olarak, Türk müziği çalgı eğitiminin geleneksel yöntemlerini harmanlanmış eğitim yaklaşımıyla zenginleştirerek modern teknolojilere entegre etmek, eğitimin etkinliğini artırmanın yanı sıra kültürel mirasın korunmasına da katkı sağlayacaktır. Bu doğrultuda, dijital materyallerin geliştirilmesine yönelik çalışmaların teşvik edilmesi ve yaygınlaştırılması önerilmektedir. Böylece, uzaktan ve yüz yüze eğitim faaliyetlerinin daha etkili, sürdürülebilir ve işlevsel hale gelmesi mümkün olacaktır.

Over the past century, the rapid advancement of technology has influenced many aspects of human life, particularly driving new approaches, applications, and developments in education. With the widespread impact of digitalization, a byproduct of technological advancements, educational tools have expanded and diversified, requiring educators to integrate them into their teaching practices. The 2020 pandemic made it essential for educators to adapt to digital education. In this context, the need for digital platform-based supplementary resources in distance music education became evident. As a product of oral tradition, Turkish music has historically been transmitted through the *meşk* system, a master-apprentice approach used for both cultural transmission and instrumental training. Due to its modal structure and performance-specific nuances, Turkish music can be described as a stylistic form of music. The *meşk* method, as a system of oral transmission, is employed to ensure the stylistic continuity of the tradition. The *meşk* method can be defined as the process in which individuals with fully developed expertise in a particular art form—experienced masters—transfer their knowledge and skills to less experienced learners (Gürbüz, 2010). In addition to the evolving dynamics of the past century, the requirements of the technological age have further highlighted the search for new methods in the transmission of Turkish music culture. Alongside the *meşk* system, which has traditionally been utilized for the transmission of Turkish music culture, notation-based written texts have also started to be used in education over the last century. The integration of music education into higher education institutions has significantly increased the need for written texts and methods. In the tradition of Turkish music, instrumental education has been systematically documented in written methodologies since the mid-20th century.

Instrumental education refers to the systematic acquisition of skills necessary to master a specific musical instrument. The first known method in Turkish music instrumental education dates back to 1910 and was written by Ali Salâhi Bey. The first method for the kanun instruction was authored by İsmail Şençalar in 1976 under the title *Kanun Öğrenme Metodu*. In addition to existing methods for the kanun instruction, the number of theses and academic studies on this subject continues to increase. Today, contemporary performers play the kanun not only with traditional techniques but also in a manner resembling the piano and harp. In Turkey, kanun education is conducted within the scope of "instrument courses" in institutions such as Turkish music state conservatories, faculties of fine arts, faculties of education, fine arts high schools, and municipal conservatories offering professional music education. Additionally, the kanun education is provided in amateur music education institutions (Doğruöz, 2024: 1-2).

This study examines the use of QR codes in kanun education within the framework of digitalization, aiming to enrich the teaching and learning process. Additionally, it designs digital platform-based materials with sample exercises to assess their effects on instruction. In line with this objective, the study also explores whether lesson materials adapted to digital platforms are used in relevant publications on the kanun education, the accessibility of these materials, their contributions to the *meşk* system in transmitting Turkish music traditions, and how these materials can be integrated into the blended learning model.

The research is a theoretical case study. According to Creswell (2007, as cited in Subaşı & Okumuş: 420), a case study is a qualitative research approach in which the researcher conducts an in-depth examination of one or more cases within a defined timeframe using multiple data collection methods (observations, interviews, audiovisual materials, documents, reports) and identifies themes related to the case. The data used in this research consist of etudes and audiovisual recordings developed by the researcher and are drawn from *Kanun Eğitimi-1*

(Doğruöz, 2024). The study is significant in highlighting the development of supplementary educational materials in *Kanun* instruction and their adaptation to digital platforms for use in blended learning model applications.

INSTRUMENTAL EDUCATION WITHIN the SCOPE of BLENDED LEARNING

The foundation of blended learning is the combination of face-to-face and technology-based instruction (Porter et al., 2014: 77). Garrison and Vaughan (2008: 5-7) define blended learning as a "learning experience in which face-to-face teaching and online learning are meaningfully integrated," emphasizing that this model utilizes the strengths of both environments to enhance learning activities. Similarly, Graham (2006: 3-21) describes blended learning as "a combination of online and face-to-face learning environments." He highlights four key advantages of blended learning: "learning flexibility, adaptability to individual needs, increased instructional effectiveness, and cost reduction." Bonk and Graham (2012: 15-18) further assert that blended learning models serve as a bridge in the transition from traditional to online teaching, facilitating adaptation to both pedagogical and technological innovations.

Blended learning, an instructional model integrating face-to-face and online pedagogical methods, has emerged as a transformative approach in instrumental music education. This model facilitates greater flexibility and interactivity, fostering both technical proficiency and independent learning skills among students. According to Arshad et al. (2022: 4937), blended learning enables learners to develop instrumental techniques and musicianship through a self-directed and autonomous learning process. A key advantage of blended learning lies in its ability to merge asynchronous digital resources—such as instructional videos, interactive sheet music applications, and virtual masterclasses—with synchronous, face-to-face instruction. This hybrid approach allows students to refine technical skills independently while receiving real-time, personalized feedback from instructors. Beirnes and Randles (2023) examined music educators' experiences with blended learning during the COVID-19 pandemic, emphasizing its adaptability and pedagogical effectiveness in diverse instructional settings.

Recent studies (Gedik, 2022; Taşkıran, 2023; Sever, 2014; Yungul, 2018) highlight the adaptability of blended learning in instrumental education, demonstrating its potential in addressing the evolving needs of contemporary learners. With proper planning, suitable technological infrastructure, and effective management, this educational model can be highly effective for both students and instructors, especially in disciplines that require both theoretical and practical knowledge. This approach enriches learning processes by providing students with additional resources through interactive platforms. However, successful implementation of this model necessitates a robust technological infrastructure. Additionally, instructors must be proficient in both digital and face-to-face teaching methods. Another crucial aspect of this educational model is that students must demonstrate self-discipline and motivation for independent study. To enhance students' motivation and discipline, hybrid approaches combined with online group studies can be utilized. Furthermore, blended learning fosters self-regulated learning (SRL) by promoting autonomy in practice routines. Through structured digital platforms, students can systematically plan, monitor, and evaluate their progress, thereby enhancing their ability to engage in deliberate practice. Arshad et al. (2022) highlight that blended learning plays a pivotal role in cultivating independent learning behaviors among music students.

Particularly in the field of arts education, and more specifically in instrumental training, blended learning approaches are becoming increasingly diversified (Gedik, 2022; Taşkıran, 2023; Sever, 2014; Yungul, 2018), and the available resources are expanding. When the necessary conditions are met, this approach allows for time- and

location-independent instrumental training, enabling flexible scheduling for individual practice. On the other hand, in face-to-face instrumental education, learning through imitation—observing the instructor’s performance—relies on real-time attention. In the blended learning model, the integration of digital resources as instructional materials alongside face-to-face teaching offers students the opportunity to repeatedly watch and analyze specific exercises or pieces, thus enhancing learning effectiveness.

Furthermore, considering circumstances such as students’ health issues that may prevent in-person attendance, as well as disruptive events like earthquakes, pandemics, or other unforeseen challenges affecting face-to-face education, the digitalization of instrumental training materials within the framework of blended learning is deemed essential.

THE USE of DIGITAL MATERIALS in the KANUN EDUCATION

Instrumental education constitutes a significant part of music education by encompassing various aspects such as mastery of the cultural context of the musical genre represented by the instrument, acquisition of repertoire, and the ability to perform it. The kanun is a key instrument in Turkish music, possessing a rich historical and cultural significance. It occupies a prominent role in both solo performances and ensemble settings, and its complexity, both technically and musically, requires a specialized approach to its education. Effective kanun education involves the development of both technical proficiency and musicality, necessitating an approach that integrates various pedagogical methods to enhance learning outcomes. Since Turkish music was incorporated into academia in 1976, kanun education has been conducted in conservatories and later in faculties of education, faculties of fine arts, and similar institutions, relying on the principles of face-to-face instruction, meaning that it is taught through hands-on practice. At the beginning of kanun education, plectrum exercises and etudes serve as preparatory studies for approximately two academic terms, depending on the student's proficiency level. Once the student is ready to perform pieces, they continue with beginner, intermediate, and advanced-level compositions while simultaneously practicing etudes and plectrum techniques at appropriate levels to gain mastery over the instrument (Doğruöz, 2024: 2).

While traditional teaching methods have long been instrumental in fostering students’ engagement with the instrument, contemporary educational technologies have introduced significant improvements, making kanun education more efficient, accessible, and adaptable. The incorporation of digital materials and online learning tools offers students the opportunity for independent practice, enabling them to revisit technical exercises and refine their musical expression. These digital tools also facilitate personalized learning experiences, as they allow students to progress at their own pace while providing immediate feedback. The integration of such resources into kanun education not only diversifies instructional strategies but also increases the flexibility of the learning process, thus enhancing the overall effectiveness of the educational experience. By blending both traditional and digital teaching methods, kanun education aims to provide a more holistic and dynamic learning environment, catering to the evolving needs of modern learners while preserving the depth and richness of this traditional art form.

The first efforts to integrate digitalization into kanun education as a means of supporting the learning process have emerged in recent years. The first method book for kanun education was published in 1976, coinciding with the official establishment of the first Turkish music conservatory. Over time, the number of method books and instructional materials for kanun education has increased (Aydoğdu, 2004; Karaduman, 2007) and in recent years,

these methods have been supplemented with auxiliary resources such as CDs, VCDs, and DVDs, which can be classified as digital instructional materials.

One of the first digitally supported the kanun method books containing audiovisual recordings is Aydoğdu & Aydoğdu *Kanun Method* (2004), which includes 27 audio recordings. These recordings were provided in CD format, with the first 20 tracks consisting of exercises and the remaining seven featuring improvisations (*taksims*) recorded by the authors on various dates. However, Aydoğdu & Aydoğdu did not record all the exercises in the method, choosing only those they deemed necessary for the instructional process. Additionally, the metronome markings for the exercises are specified in the tracklist (Özel, 2018).

Another example of a digitally supported the kanun method that includes audiovisual recordings is Karaduman's *Kanun Method* (2012), which incorporates a DVD. The DVD menu features four main sections, each containing its own set of subsections. The instructional content was recorded with the author performing on the kanun, supplemented by explanations and demonstrations. At specific points requiring emphasis, the main screen was minimized to the lower right corner while a second recording was displayed on the main screen (Özel, 2018).

Within the scope of kanun specific instructional materials available on digital platforms, Baktagir's *Bestekâr* (2021) book employs a QR code system. The QR codes provide access to the sheet music and performance recordings of 20 *saz semâisi* compositions. In this book, Baktagir offers explanations regarding his compositions, and QR codes containing the sheet music and kanun performance recordings are placed beneath these explanations. Similarly, in *Kanun Günlükleri* (2022), also published by Baktagir, QR codes provide access to etudes and instrumental compositions along with their sheet music and performance recordings.

The incorporation of digital materials into kanun education offers significant advantages by providing enhanced flexibility, accessibility, and opportunities for in-depth learning, complementing traditional pedagogical approaches. Digital platforms present a diverse array of resources and interactive content, facilitating a more effective and individualized learning experience. Through the utilization of online instructional videos, interactive sheet music applications, virtual lessons, and exercises, students are afforded the opportunity to engage in extensive practice on the kanun, an instrument that demands considerable technical proficiency. These digital tools enable learners to revisit and critically analyze their performances, fostering a deeper understanding of their progress. Additionally, the inherent flexibility of digital materials allows students to customize their learning trajectory, aligning it with their specific needs, thereby optimizing both technical skill development and musical comprehension.

In the context of kanun education, digital materials prove especially valuable due to their ability to support the development of both technical and musical expertise. Online platforms grant students access to rich, supplemental content, while instructors can monitor individual progress and provide targeted, personalized feedback. This dynamic fosters a more tailored educational experience, allowing for greater responsiveness to the diverse learning needs of students. Furthermore, digital tools stimulate active engagement in the learning process, encouraging independent practice beyond the confines of formal instruction. These resources also create an interactive and creative environment conducive to the development of musical expression. However, the effective integration of digital materials necessitates a robust technological infrastructure, instructors proficient in digital pedagogical methods, and students who demonstrate self-discipline and motivation for autonomous study. In conclusion, the

strategic integration of digital materials into kanun education serves to enrich the overall learning experience, facilitating both the refinement of technical skills and the cultivation of musical expression. When coupled with traditional face-to-face instruction, this blended approach maximizes the potential for students' growth, creativity, and musical mastery.

QR CODE-ACCOMPANIED EXAMPLES WITHIN the SCOPE of DIGITAL MATERIALS in KANUN EDUCATION

The digital transformation process can be considered as the changes and interactions that occur with the integration of digital technologies such as the internet, mobile technology, artificial intelligence, and virtual reality into daily life. In this context, due to factors such as easy accessibility, mobile technology, and the ability to access mobile technology at any time, QR code applications are observed to be used in various sectors. A QR code is defined as a "two-dimensional barcode." Various elements such as texts, photos, videos, and links can be embedded within QR codes (Eminoğlu, 2022). The term "QR code" is derived from the initial letters of the English phrase "Quick Response." QR codes are matrix-coded symbols designed to be scanned via mobile devices to access digital content (Sahu & Gonnade, 2013).

In this section of the study, sample exercises prepared by the researcher using selected data from the book *Kanun Education-I* (Doğruöz, 2024) are presented. Additionally, the audiovisual recordings available on the digital platform via QR codes are provided as sub-visuals of the relevant exercises.

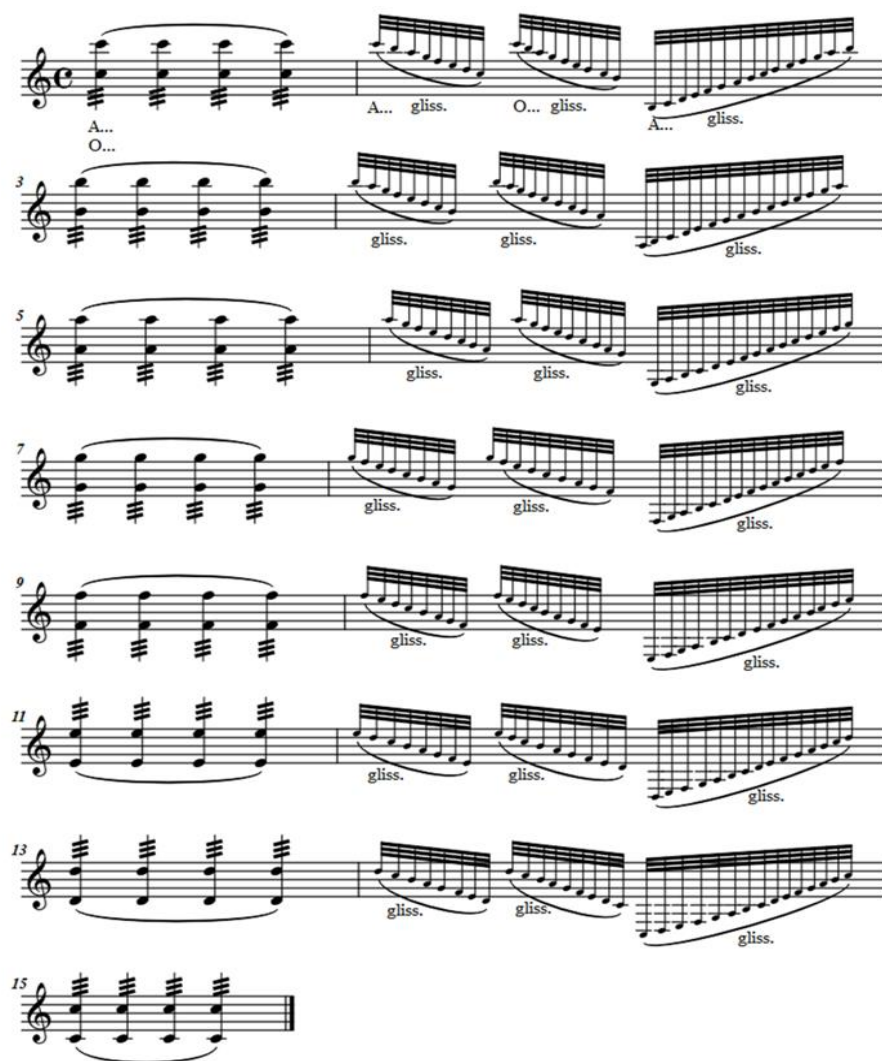


Figure 1. Octave Exercise

Application

In the octave exercise presented in Figure 1, the left hand should be positioned in the octave, while the right hand should be placed in the upper octave. The notes marked as legato and tremolo in the odd-numbered measures should be played with frequent plectrum strokes, ensuring no gaps between the pitches. The thirty-second legato notes in the even-numbered measures should be performed using the scanning technique with the reverse stroke of the right plectrum.

Learning Outcome

Through the octave exercise, performers develop synchronized execution control over the pitches on the *Kanun* with both the right and left plectrum. The application of the tremolo technique—frequent plectrum strokes—on octave sounds enhances finger muscle development. Additionally, performing the glissando sections between octave notes using the scanning technique fosters proficiency in one of the kanun's ornamentation techniques.

Audio-Visual Learning Material



Figure 2. *Arpeggio Exercise QR Code*



Figure 3. *Arpeggio Exercise*

Application

This exercise, in which the left hand is used without a plectrum while the right hand employs one, represents a melodic application of arpeggios in a fourth interval. In this exercise, the first and third fingers of the left hand should be used, while the right-hand plays with a plectrum. The left thumb should push, while the other fingers pull to execute the technique properly.

Learning Outcome

This exercise reinforces the use of arpeggios within a fourth interval and serves as a preliminary preparation for left-hand-accompanied performances.

Audio-Visual Learning Material



Figure 4. *Bûselik Etude Qr Code*

Figure 5. *Bûselik Etude*

Application

The first two measures of this etude, designed in the *Bûselik makam*, are based on plectrum arpeggio performance. In these measures, the plectrum should be used in a right-left sequence until the last three notes, and the sliding technique should be applied with the right plectrum on the last three notes. The *Nim Zirgüle* note in the third measure should be temporarily altered. The tremolo notes at the end of the third and fourth measures should be played with rapid plectrum strikes and in a triplet interval. In the fifth and sixth measures, the arpeggio technique should be applied with the first and third fingers of the left hand.

Learning Outcome

This study focuses on two distinct techniques in interval articulation: one with the plectrum and the other with the fingers. The application of the sliding technique and tremolo notes in a triplet interval is reinforced. Additionally, the use of the plectrum is reinforced in the alternating of the *Rast* note and *Nim Zirgüle* note, which are frequently encountered in the repertoire of the *Bûselik makam*.

Audio-Visual Learning Materialf

Figure 6. *Bûselik Etude*

The QR codes and practice materials developed for the teaching of the *Kanun* not only transcend traditional instructional methods but also make a significant contribution to students' musical development. These digital tools allow students to enhance both their theoretical knowledge and practical skills in a complementary manner, while facilitating a more flexible and personalized progression of their learning processes. The applications accessed through QR codes enable students to engage in active practice outside of class, thus supporting the

continuity of their learning. The clear alignment of each exercise and application with targeted learning outcomes enables students to focus on their musical journey and monitor their progress through tangible data. This innovative approach to *Kanun* instruction not only facilitates the transmission of musical knowledge and technical skills but also fosters the development of competencies necessary for learning in the digital age. Ultimately, in the context of an increasingly digital educational landscape, such integrated methods empower students to maximize both their technical abilities and creative potential.

CONCLUSION and DISCUSSION

In the tradition of Turkish music, instrumental education has historically been rooted in oral culture and transmitted through *the meşk system* within the master-apprentice relationship. This traditional method has remained the fundamental educational model ensuring the continuity of Turkish music. However, since the 20th century, influenced by the academic field, efforts have been made to develop various methodologies to systematize Turkish music education. This process, which began with the publication of the first ud method in 1910, expanded further following the release of the first kanun method in 1976, leading to a diversification and advancement of instructional materials.

Today, the rapid advancement of technology has brought significant changes to educational approaches. In this context, the blended learning model, which combines the advantages of face-to-face instruction with digital platforms, offers an innovative approach to music education, particularly instrumental training. In the specific case of Turkish music instrumental education, the integration of digital tools and technologies such as QR codes enhances learning by providing students with visual and auditory support while facilitating the application process. This hybrid educational approach, supported by online learning materials in addition to face-to-face instruction, is expected to contribute significantly to music education, particularly instrumental training.

In this framework, Aldemir and Öztürk (2023) examined the feasibility of online violin education in institutions training music teachers during the pandemic and emphasized that blended learning environments could be effective for violin instruction. Similarly, Yungul (2018) investigated web-based distance guitar lessons and found that performance-related skills could be effectively developed through this method, suggesting it as a viable alternative to traditional education. In another study, Uludağ and Gülüm (2023), found that the lesson activities prepared on YouTube and the QR-coded lesson notes providing access to these activities increased students' performance and motivation. Eker (2022) highlighted the advantages of distance education and proposed incorporating a blended learning model into formal education. Additionally, Eker recommended using online piano education as an alternative for students unable to attend face-to-face classes in formal settings. In conclusion, the integration of blended learning within instrumental music education represents a paradigm shift that balances traditional and technology-enhanced instruction. By leveraging digital innovations alongside conventional pedagogical methods, this model fosters a more dynamic, flexible, and personalized learning environment. Future research should further investigate the longitudinal impact of blended learning on students' skill acquisition, motivation, and long-term retention of musical competencies.

In the context of instrumental education in Turkish music, the process of digitalization, which has rapidly integrated into contemporary life, has led to the publication of digitally supported methods in kanun education practices. In this regard, exercise examples developed by the researcher have been presented within the scope of this study through QR codes, supported by audiovisual recordings. In the first exercise presented in the study, an

octave exercise, the octave tremolo technique, legato execution, and glissando nuances included in the musical notation were demonstrated practically via QR codes. In the second exercise, an arpeggio study, an example of right-hand plectrum execution in the main melody -commonly used in kanun performance techniques- was demonstrated alongside the left-hand technique of playing without a plectrum. In the transmission of exercises incorporating techniques such as octaves and arpeggios, musical notation serves primarily as a reference, while the master-apprentice relationship, known as the *meşk* system, remains central to the learning process. Audiovisual support is expected to enhance students' preparation and post-lesson practice, reinforcing the blended learning model. Additionally, the ease of accessibility to these materials via mobile technology makes them a readily available resource for students at any time.

Visual-auditory recordings integrated with QR codes represent a significant pedagogical tool in kanun education. These digital materials enhance students' ability to learn both musical concepts and technical skills effectively. By engaging with visual-auditory content, students can comprehend sounds and notes not only through reading but also by listening and observing, thus transforming abstract musical knowledge into something more tangible. The interactive nature of QR codes allows students to access content at any time and from any location, thereby facilitating self-paced learning. One of the primary advantages of this content in kanun education is its ability to guide students in mastering correct techniques. Visual-auditory recordings provide clear visual representations of finger movements and playing techniques, while also fostering the development of auditory perception through sound recordings. Additionally, video or audio materials accessed via QR codes help students refine their ability to perform musical pieces accurately. Moreover, the integration of visual-auditory materials aids in enhancing students' musical expression and their emotional interpretation of the pieces. The sound and video recordings designed for each exercise or piece enable students to better understand the performance styles of renowned artists, allowing them to incorporate these approaches into their own playing. These digital resources, accessed through QR codes, contribute to creating a more dynamic and interactive learning experience, illustrating the effective use of digital technologies in kanun instruction.

In conclusion, enriching instructional materials with QR code applications is anticipated to strengthen students' preparation for lessons and support their independent studies in flexible environments following face-to-face instruction. Moreover, it is expected to improve conditions for students unable to attend in-person lessons due to health issues or other circumstances. Furthermore, in cases where face-to-face education may be disrupted due to emergencies such as earthquakes or pandemics, increasing and diversifying these materials is predicted to minimize interruptions in education. Therefore, transferring, diversifying, and expanding music education materials on digital platforms holds significant potential for enhancing the efficiency of educational processes.

As a result, integrating the traditional methods of Turkish music instrumental education with a blended learning approach and modern technologies will not only enhance the effectiveness of education but also contribute to the preservation of cultural heritage. In this regard, it is recommended to encourage and expand efforts aimed at developing digital materials. This approach is expected to enhance the sustainability and efficiency of both remote and in-person instructional models, fostering a more adaptable and resilient music education system. Future studies could focus on developing a standardized digital curriculum for kanun education, integrating QR-based exercises with adaptive learning technologies.

REFERENCES

- Aldemir, B. & Öztürk, F. G. (2021). Uzaktan eğitimde keman eğitiminin uygulanabilirliğine yönelik öğretim elemanı ve öğrenci görüşleri (Gazi Üniversitesi örneği). *The Journal of Academic Social Science*. (113), 292-305.
- Arshad, S. F., Sulong, M. A., Hashim, Z., & Mazlan, C. A. N. (2022). Perspective on blended learning for instrumental music learning. *Journal of Positive School Psychology*. 6(3), 4936–4941.
- Aydoğdu, T. & Aydoğdu, G. (2014). *Kanun metodu*. Ankara: Yurtrenkleri Yayınları.
- Baktagir, G. (2021). *Bestekâr*. İstanbul: Hayal Gibi Müzik Yayıncılık.
- Baktagir, G. (2021). *Kanun günlükleri*. İstanbul: Hayal Gibi Müzik Yayıncılık.
- Behar, C. (1998). *Aşk olmayınca meşk olmaz*. İstanbul: Yapı Kredi Kültür Sanat Yayınları.
- Beirnes, L., & Randles, C. (2023). Blended learning in music education: Adapting pedagogical practices in a post-pandemic landscape. *Journal of Music Education Research*, 45(2), 178-195.
- Creswell, J. W. (2007). *Qualitative inquiry & research design: choosing among five approaches* (2. Baskı). USA: SAGE Publications.
- Eker, T. Ç. Uzaktan eğitim sürecinde çalgı eğitimi: piyano dersi sistem işlerliğine yönelik öğrenci görüşleri. *Trakya Eğitim Dergisi*. 12(2), 624-636.
- Doğruöz, M. D. (2024). *Kanun eğitimi-I*. İzmir: Ege Üniversitesi Basım ve Yayınevi.
- Eminoğlu, E. (2022). Karekod Nedir? Nereelerde Kullanılır? <https://www.karekod.org/karekod/karekod-nedir.pdf>. Erişim Tarihi: 09.03.2024.
- Garrison, D. R. & Vaughan, N. D. (2008). Blended learning in higher education: Framework, principles, and guidelines (pp. 5-7). USA: Jossey-Bass.
- Gedik, G. (2022). Müzik eğitimi anabilim dalı öğrencilerinin öz-yönetimli öğrenme düzeyleri ile piyano öğrenme stilleri arasındaki ilişki. (Yayınlanmamış yüksek lisans tezi). Pamukkale Üniversitesi Eğitim Bilimleri Enstitüsü, Denizli.
- C. J. Bonk & C. R. Graham (Eds.). (2006). Blended learning systems: Definition, current trends, and future directions. *The Handbook of Blended Learning: Global Perspectives, Local Designs*, (3-16). USA: Pfeiffer a wiley imprint.
- Gürbüz, H. (2010). Meşk sistemi, Türk musikisine katkıları ve günümüze yansımaları. (Yayınlanmamış yüksek lisans tezi). Haliç Üniversitesi Sosyal Bilimler Enstitüsü, İstanbul.
- Karaduman, H. (2012). *Kanun metodu*. İstanbul: Alfa Yayınları.
- Özel, A. E. (2018). Türk Makam Müziğinin Çalgılarından Kemençenin Öğrenimi İçin Dijital Bir Materyal Geliştirme Önerisi. *Journal of Istanbul University Faculty of Theology*, 29(1), 109-130.
- Porter, W. W., Graham, C. R., Spring, K. A., & Welch, K. R. (2014). Blended learning in higher education: Institutional adoption and implementation. *Computers and Education*, (75), 185–195.

- Rowley, K, Bunker, E., & Cole, D. (2002). Designing the right blend: Combining online and onsite training for optimal results. *Performance Improvement*, 41(4), 24-34.
- Sahu, K., S. & Gonnade, S. K. (2013). QR Code and Application In India. *International Journal of Recent Technology and Engineering*, 2(3), 26-28.
- Sever, G. (2014). Bireysel Çalgı Keman Derslerinde Çevrilmiş Öğrenme Modelinin Uygulanması. *Eğitimde Nitel Araştırmalar Dergisi*, (2)2, 27-41.
- Subaşı, M., & Okumuş, K. (2017). Bir araştırma yöntemi olarak durum çalışması. *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 21(2), 419-426.
- Şençalar, G. (1976). *Kanun öğrenme metodu*. İstanbul: Müzik Dünyası Yayınları.
- Usta, E. (2007). Harmanlanmış öğrenme ve çevrimiçi öğrenme ortamlarının akademik başarı ve doyuma etkisi. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi*, 9(2), 1-15.
- Taşkıran, N. D. (2023). Ortaöğretim müzik öğretiminde harmanlanmış öğrenme yaklaşımlarından ters yüz öğrenme modeli uygulaması. (Yayımlanmamış yüksek lisans tezi). Uludağ Üniversitesi Eğitim Bilimleri Enstitüsü, Bursa.
- Uludağ, A. & Gülüm. O. (2019). YouTube destekli müzik dersi platformu ve QR kodlarıyla erişim: Harmanlanmış öğrenme aktiviteleri. *Müzik Eğitim Araştırmaları Dergisi*. 8(1), 45-59.
- Yungul, O. (2018). *Web tabanlı uzaktan eğitimin çalgı (gitar) eğitiminde uygulanabilirliği*. (Yayımlanmamış doktora tezi). Marmara Üniversitesi Eğitim Bilimleri Enstitüsü, İstanbul.