USE OF DIGITAL EDUCATIONAL TOOLS IN DEVELOPING THE SKILL OF PLAYING BY NOTES

Abdulatif Abdujabbor-ugli Esonaliev
State Conservatory of Uzbekistan

Abstract: This article examines the effective use of digital educational tools in developing students' ability to play by notes during the music education process. Additionally, mechanisms for creating an individual educational trajectory using digital educational tools, activating students' independent work activities, and increasing educational efficiency are substantiated. The research results demonstrate that the integration of digital technologies into music education practice accelerates the process of forming the ability to play by notes, increases student motivation, and serves to enhance performance skills.

Keywords: digital educational tools, interactive learning, musical literacy, piano performance, musical listening, multimedia technologies, mobile applications

Introduction

The digital transformation occurring in the education system today, along with all disciplines, is introducing new approaches to the content, methodology, and practical performance process of music education. In particular, combining theoretical knowledge with practical performance in teaching musical art, as well as the comprehensive development of students' musical hearing, rhythmic sensitivity, creative thinking, and performance skills, is emerging as an important pedagogical task. From this perspective, forming the skill of playing by notes is one of the main components of music education, which plays a special role in developing the student's musical literacy, performance culture, attention stability, memory, and artistic-aesthetic perception.

Playing by the sheet music is not a simple technical skill, but a complex psychological, pedagogical, and musical process. Because the student performs several activities at the same time, such as seeing the text of the note, understanding it, perceiving the pitch and duration of the sound, feeling the rhythmic structure, coordinating the movement of the fingers, and enriching the performance with artistic content. This process requires not only theoretical knowledge from the student but also quick thinking, auditory control, motor accuracy, and a creative approach. Therefore, the effective formation of the skill of playing by notes requires thorough methodological preparation, a step-by-step approach, and the use of modern pedagogical tools from the music teacher.

In traditional music education, the skill of playing by notes is primarily formed under the teacher's guidance through oral explanation, demonstration, repetitive exercises, and individual supervision. Of course, this approach has not lost its didactic significance. However, in modern educational conditions, students' information perception style, cognitive activity, the need for independent learning, and their direct connection to the digital environment require a new organization of the educational process. Today's student must have the opportunity to master musical texts not only during lessons but also through digital applications, electronic musical notation programs, audio-visual materials, interactive exercises, and online platforms.

Digital educational tools open up extensive pedagogical opportunities in developing the ability to play by the sheet music. For example, electronic music editors allow the reader to see, hear, and analyze the text of a note; metronomes and rhythm trainers develop rhythmic accuracy; and mobile applications activate the student's individual practice activities. Furthermore, the harmonious presentation of notes, sound, movement, and visual imagery through multimedia tools enhances the student's musical perception. This ensures the interconnected operation of the visual, auditory, and motor analyzers during the process of playing by note.

Another important aspect of digital tools is that they serve to personalize the educational process. Each student has a different level of musical preparation, speed of reading notes, ability to feel the rhythm, and performance technique. Approaching all students at the same pace during a traditional lesson process can sometimes cause difficulties in learning. Digital learning tools allow students to practice at their own pace, listen to complex passages over and over again, record and analyze their performance, and work independently on mistakes. As a result, the student becomes an active participant in the educational process.

At the same time, the use of digital technologies does not diminish the role of the music teacher; on the contrary, it further expands their methodological activities. The teacher performs the task of selecting digital tools appropriately, adapting them to the age and individual characteristics of students, developing a system of exercises, analyzing performance results, and providing pedagogical guidance. Consequently, digital educational tools should be viewed not as a substitute for the teacher, but as a didactic tool that supports their pedagogical activity and increases educational efficiency.

The use of digital tools in developing the ability to play by ear also serves to increase students' musical motivation. Interactive tasks, audio-visual instructions, game-based exercises, level-based assessment, and rapid feedback increase the student's interest in music. Especially for primary school students, it is very important to master musical material visually, audibly, and in connection with movement. Such an approach increases students' self-confidence, develops qualities such as not being afraid of the sheet music text and striving to read and perform a musical piece independently. The use of digital educational tools in developing the ability to play by ear is considered one of the important methodological directions aimed at improving the quality and effectiveness of music education. Studying this issue from a scientific and pedagogical perspective allows for the determination of the role of digital technologies in developing students' musical literacy, performance technique, auditory control, and independent creative activity. Therefore, the main objective of this article is to analyze the pedagogical possibilities, methodological advantages, and practical application methods of digital educational tools in forming the skill of playing by notes.

Developing the skill of playing by notes in piano lessons

Developing the ability to play by ear in piano lessons is one of the important factors in developing a student's musical literacy, performance culture, and independent musical thinking. The piano is distinguished from other instruments by its wide range, simultaneous active participation of two hands, and the ability to perform various textures and sound layers. Therefore, the process of playing a note on the piano is more complex than simple reading, requiring visual, auditory, and rhythmic sensations, as well as finger movements, attention, and the harmonious activity of memory.

In piano performance, playing by note begins with the correct perception of the musical text. The student must be able to understand musical notation not only as a separate sound sign, but also as a whole artistic text related to musical thought, rhythmic structure, tonal quality, dynamic sign, and performance character. In this process, the teacher explains to the student that each note sign represents a specific pitch, duration, stress, phrase, and performance method. As a result, the student gradually rises from mechanical reading of the sheet music text to the level of conscious musical analysis.

In piano lessons, students' musical literacy is strengthened at the initial stage of developing the skill of playing by notes. In this process, it is important to recognize the notes in the violin and bass keys, determine their placement on the keyboard, and master note durations, pauses, measure, rhythmic groups, and simple melodic movements. Especially in piano performance, the need to work with two keys requires more attention and quick perception from the student. Therefore, it is advisable to teach the student to read the right-hand and left-hand parts separately during the initial sessions, and later to play them together.

An important condition for the skill of playing by note is the ability to pre-observe the text of a note with the eyes. An inexperienced reader often stares at the note they are playing and cannot foresee subsequent sounds. This leads to pauses in performance, rhythm disturbances, and the interruption of musical thought. Therefore, in piano lessons, it is necessary to teach the student to visually observe the musical text one or two beats in advance. Such a skill is formed gradually: first through simple rhythmic and melodic exercises, then through short studies, simple developments of folk melodies, and small-scale pieces.

Hand movements and finger coordination play a special role in playing the piano according to the notes. The student must read the text of the note and immediately convert it into an action on the keyboard. In this process, the order of the fingers, the position of the hand, the freedom of the wrist, the feel of the keyboard and the economy of movement are important. In the process of each exercise, the teacher must teach the student to position their fingers correctly, avoid unnecessary strain, not play by searching for notes, but to find the location of sounds on the keyboard through intuition. Particularly, finger independence is developed through gamma-like movements, arpeggio elements, two-voice exercises, and simple chords.

Rhythmic precision is one of the key components of playing by the sheet. If a student finds the pitch correctly but fails to perform the rhythmic structure accurately, the content of the musical piece will be distorted. Therefore, special attention must be paid to rhythmic exercises during piano lessons. In this process, effective results are achieved by counting time, feeling the rhythm by striking with the hand, working with a metronome, reading rhythmic sections separately, and simplifying the explanation of complex rhythmic groups. Through digital metronomes, rhythm simulators, and interactive programs, the student can also practice rhythmic stability independently.

Auditory control is also important in the process of playing by note. The student must hear the sound they are playing, feel the wrong note, rhythmic error, or dynamic mismatch. To develop this skill in piano lessons, the teacher can give the student tasks such as listening to and repeating short melodic phrases, finding mistakes, listening to and evaluating their own performance, and comparing it with audio recordings. Digital technologies provide great assistance in this process:

by recording and re-listening to their performance, the student identifies errors and strives to eliminate them.

In piano lessons, the principle of step-by-step is crucial for developing the skill of playing by notes. Initially, the student is given a simple rhythm and melodies in a narrow range. In subsequent stages, two-handed performance, various registers, simple chords, dynamic symbols, articulation, phrasing, and tempo changes are introduced. The level of difficulty should be increased in accordance with the student's preparation. A very difficult sheet music text evokes fear and insecurity in the reader, while a very simple material does not provide sufficient impetus for development. Therefore, the teacher must carefully select the educational material methodologically.

The sequence "seeing - understanding - performing - listening control" is considered the primary methodological mechanism in developing the skill of playing by ear. The student first sees the text of the note, understands the symbols in it, turns them into a movement on the piano keyboard, and controls the performance result by listening. If any link in this chain is poorly developed, the overall quality of performance decreases. For example, if the reading is slow, the performance will be interrupted; if finger coordination is insufficient, it will be difficult to play even if the note is read correctly; if auditory control is weak, errors will not be corrected in time.

Utilizing digital learning tools in piano lessons allows for a more efficient organization of the process of playing according to the notes. Electronic music programs allow the reader not only to see but also to hear the work, change the tempo, and repeat complex parts separately. Through mobile applications, students perform independent exercises on notation, rhythm reading, and listening to intervals and chords. Interactive platforms quickly evaluate a student's results, point out mistakes, and help determine the direction of individual training. Such tools enhance the student's independent extracurricular activities.

However, the use of digital tools should not be aimless or random. They should be selected in accordance with the didactic goal of the piano lesson, the age characteristics of the student, the level of performance, and the complexity of the educational material. For example, while simple interactive applications designed for note recognition and rhythm sensing are effective at the initial stage, working with electronic note editors, audio analysis programs, and metronomes is more effective at the middle stage. At the higher level, tasks such as analyzing complex works, comparing performance recordings, and identifying interpretational differences can be assigned.

The teacher's methodological guidance during piano lessons is of decisive importance. The teacher teaches the student how to read the sheet music, how to think, how to practice, and how to analyze their own mistakes. In this sense, the teacher acts not only as an educator but also as a pedagogue who directs musical thinking, manages the performance process, and encourages the student to develop independently. Particularly when playing by note, the student's mental state, self-confidence, and interest in performance should not be overlooked.

Regularity and systematicity are important in the formation of this skill. Playing by the sheet music should be an integral part of every piano lesson, rather than a supplementary exercise performed only in certain lessons. In each lesson, a short note-reading exercise, a new melodic passage, a rhythmic task, or a small two-handed study will gradually develop the student's ability to read and perform quickly. In this case, a consistent increase in complexity expands the student's performance experience.

Analytical discussion

In piano education, the ability to play by the notes is considered one of the essential criteria for developing students' musical literacy and performance competence. This skill is characterized by the student's ability to quickly and correctly perceive the musical text, understand it as a musical image, and apply it effectively during the practical performance process. The experience of modern music pedagogy indicates that the insufficient development of the ability to play by the notes limits students' independence and creative activity in piano performance. As a result, the student becomes accustomed to performing works mainly by memorizing them, encounters difficulties in mastering new musical material, and the possibilities for choosing an independent repertoire narrow.

Analysis indicates that in traditional piano lessons, playing by note is often viewed as a secondary task, with the primary focus placed on perfecting finished works. Although such an approach serves to develop students' performance techniques, it does not fully form their competencies for rapid reading of musical notation and independent mastery of new works. As a result of pedagogical observations, it was established that most students are accustomed to reading musical notes as separate symbols, while the ability to perceive a musical text as a holistic structure is insufficiently developed. This situation leads to rhythmic interruptions, technical errors, and inconsistent expression of musical thought during the performance process.

Scientific research in music pedagogy and psychology confirms that the process of playing by the notes is a complex cognitive activity. In this process, visual perception, auditory perceptions, musical memory, attention distribution, and motor actions operate simultaneously. The student must see the notes, associate them with musical sounds, feel the rhythmic structure, and simultaneously control the movement of the fingers. Therefore, the development of the ability to play by notes is inextricably linked not only with technical exercises but also with the development of musical thinking and hearing.

Another important aspect identified during analytical observations is that students' difficulties in reading sheet music are often related to the perception of rhythmic structure. Many students cannot perform rhythmic forms accurately even if they correctly determine the pitch of the sound. As a result, the logical structure of the musical work is disrupted, and the quality of performance decreases. This situation indicates the need to develop rhythmic skills not separately from the ability to read notes, but as an integral part of it. In particular, working with a metronome, rhythmic dictations, and rhythm-feeling exercises based on hand movements serve to effectively develop the ability to play by note.

Today, the widespread implementation of digital educational tools in music education is creating new opportunities for developing the skill of playing by the sheet music. Electronic musical notation programs, mobile applications, interactive platforms, and educational resources with artificial intelligence elements significantly enhance the student's ability to work with musical notation text. As a result of the analysis, it was found that students who regularly use digital tools have higher indicators of note recognition speed, rhythmic accuracy, and independent practice compared to students who study using traditional methods. The main reason for this is the ability of digital tools to provide rapid feedback, automatically detect errors, and create an individual learning trajectory.

Digital technologies also have a positive impact on the motivational sphere of students. Long-term repetitive exercises in traditional classes can sometimes lead to a decrease in interest. Interactive elements, game technologies, and visual-audio materials encourage students to take an active part. In particular, for young pianists, the graphical display of results, virtual assessment systems, and competition elements enhance the attractiveness of the educational process. This manifests as one of the important factors accelerating the process of forming the ability to play by notes.

However, the conducted analysis also shows that there are some problems in the use of digital tools. In particular, in some cases, students may become overly attached to technological tools, develop poor skills for independent analysis of musical text, or focus more on technical results instead of a deep sense of the musical image. Therefore, it is advisable to use digital educational tools not as a substitute for teacher activity, but as a pedagogical tool that complements it. The integration of technological capabilities and the achievements of traditional performance schools in the educational process ensures high results.

The results of the discussion show that forming the ability to play by notes in piano lessons requires a systematic and comprehensive approach. At the same time, musical literacy, rhythmic preparation, auditory control, coordination of technical actions, musical thinking, and digital competencies must be developed in an interconnected manner. In particular, the rational use of the didactic capabilities of modern digital educational tools serves to activate students' independent activities, increase educational efficiency, and elevate their ability to play by the sheet music to a qualitatively new level.

Thus, the results of the analytical discussion show that the combination of traditional pedagogical methods and digital educational technologies is the most effective approach to developing the skill of playing by notes in piano lessons. This integrative approach can be recognized as an important factor in developing students' musical literacy, performance independence, and professional competencies.

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