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A Challenge to Traditional Vibraphone Pedagogy: Four-Mallet Technique in Early Non-Formal Music Education

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Annotation. Traditionally, early-stage non-formal music education with melodic percussion instruments has relied almost exclusively on the two-mallet technique, especially when introducing young learners to the vibraphone. The aim of this paper is to assess the impact of introducing the four-mallet technique in early non-formal music education by comparing its effectiveness to the traditional two-mallet approach among young vibraphone students. This study represents the first quasi-experimental research in this area.

Keywords: *four-mallet technique, non-formal music education, vibraphone, quasi-experiment.*

Introduction

Contemporary music pedagogy is increasingly focusing not only on the technical education of students but also on fostering their creativity, self-expression, and motivation (Schiavio et al., 2022; Shaohan & Dong, 2025). In this context, non-formal music education is becoming an important medium in which children are free to explore, experiment, and discover their relationship with music. Many studies (Balčytis, 2012; Blåndul, 2015; Dodge, 2007; Skirmantienė, 2013; Byrne et al., 2024; Storsve, 2024) have

highlighted that children's engagement and progress in this area are not determined by a rigid methodology, but by experiential learning, the creativity of teachers, and the joy of learning. The aim of non-formal music education is, therefore, to help children feel like full participants, to develop their talents and creativity. In addition, non-formal music education contributes to the development of life skills and personal and social competences (NVŠ Concept, 2023).

In Lithuania, children are usually enrolled in music schools at the age of 5–7, depending on the program. Early music education programs focus on play-based music education, while primary music education programs (grades 1–3) aim to assess and develop rhythmic, aural, and vocal skills. Nevertheless, some areas of music, such as vibraphone teaching, remain underdeveloped. It is important to note that children who are new to the vibraphone have more favorable conditions than those who play other instruments. There are no problems with intonation or difficult finger control; the keys are wider and allow more precise technical tasks. At the same time, coordination and rhythmic sensitivity are developed, as well as a basic understanding of harmony, melody, and musical writing. The vibraphone is therefore an excellent instrument for starting out on the musical path, provided that the educational strategy is targeted, the methodology is sound, and the teaching objectives are clear.

Historically, the vibraphone appeared early in Lithuania – earlier than in many other European countries – but it was not fully integrated into the country's music culture. In the post-war and Soviet periods, no specialized methodology was developed, and the instrument was used in a fragmented way, often with low-quality equipment (Šinkūnas, 2022). For these reasons, vibraphone teaching has not reached international standards, and pedagogical methods still rarely cover more complex techniques, from jazz harmony to various techniques of damping or articulation.

Moreover, the pedagogy of melodic percussion instruments in Lithuania, as internationally, typically relies on the traditional two-mallet technique for beginners. Globally, the four-mallet technique is generally reserved for more advanced students and is not commonly taught to beginners. In Lithuania, this practice is reflected in the fact that the four-mallet technique is usually introduced only to older students who have already developed basic skills. This approach assumes that the four-mallet technique is too complex for novices and therefore delays its introduction until a later stage of education.

However, this belief is increasingly questionable. International pedagogical practice as well as recent research (e.g., Cheesman, 2012a; McLean, 2015; Zirkle, 2003a) shows that the four-mallet technique can be not only appropriate but also useful for the initial stage of music education, if applied in a systematic and methodologically sound way. The four-mallet technique develops not only technical proficiency but also rhythmic awareness, motor coordination, perception of sound articulation, polyphonic thinking, and musical independence. This approach not only broadens students' musical horizons

but also supports the development of cognitive (see Schlaug et al., 2005), sensory-motor (see Hyde et al., 2009), and social competencies (see Vygotsky, 1978).

This is particularly relevant in the Lithuanian context, where the four-mallet technique is still seen as potentially difficult to access at the initial learning stage. In addition, educators are often faced with a lack of methodological materials and repertoire, and the teaching system itself often does not meet the needs of the modern child.

The aim of this paper is to present a quasi-experimental study aimed at evaluating the effectiveness and reliability of the application of the four-mallet technique in early informal music education. The study focuses not only on the practical application of the method but also on a broader pedagogical reflection: how this technique can transform the traditional approach to teaching the vibraphone to beginners.

Research Methods and Data Collection

To determine the advantages of the four-mallet technique compared to the two-mallet technique, this study decided to use a quasi-experiment. Like an experiment, a quasi-experiment is an empirical intervention study used to assess the causal effect of an intervention on a target audience (Cook & Campbell, 1979). The main difference from an experiment is that in a quasi-experiment, the experimental and control groups are not assigned randomly (Cook & Campbell, 1979). Assignment to certain conditions occurs either voluntarily or is made by an administrative staff member, i.e., teachers, bureaucrats, legislators, therapists, doctors, or others who decide which individuals should participate in the experimental group (Cook & Campbell, 1979).

A quasi-experiment was chosen as the most suitable method for this study, considering that technically random assignment was not possible – that is, it was impossible to randomly select or assign students to the initial class in the primary music school, as they were already assigned there by the school administration.

However, the researcher who chooses a quasi-experiment can still control the selection and planning of measures/methods, for example, deciding which randomly selected group will be the experimental or control group (Campbell & Stanley, 1963).

Quasi-experiments can be conducted with a single group or with two non-equivalent groups (Jhangiani et al., 2019). For this precise research, an Interrupted Time-Series Design with Nonequivalent Groups was chosen as the repeated measurements before and after the intervention allow researchers to observe trends and changes attributable to the treatment, while the inclusion of nonequivalent control groups helps to control external factors and strengthens causal inference (see Jhangiani et al., 2019). Such a design is particularly useful when random assignment is not feasible, and it provides more robust evidence of intervention effects than simpler pretest-posttest designs.

Although it is not possible to completely equalize the parameters of the experimental and control groups in a quasi-experiment (Kardelis, 2017), efforts were made to follow the principles of equivalence when forming the groups (see Kardelis, 2017):

1. The number of participants in each group is the same.
2. The gender, race, and ethnicity of the participants in both groups are matched, and the age difference is minimal.
3. At the initial stage, the abilities of the participants are the same.

Quasi-Experiment

The entire quasi-experiment can be divided into three main stages:

1. The stage before the quasi-experiment: strategy selection, initial level assessment, and self-reflection.
2. A 6-month quasi-experiment featuring both an interim assessment at the midpoint and a final assessment at the conclusion of the study.
3. Self-reflection after the quasi-experiment.

Both the experimental and control groups participated in all stages.

To implement the quasi-experiment, the teaching program, i.e., the teaching strategy, was first carefully planned:

1. The mallet-holding technique was selected.
2. The musical instrument was chosen.
3. The musical pieces were selected.
4. The participants were divided into groups.

The four-mallet holding technique. The experimental group was taught Gary Burton's four-mallet holding technique: the inner mallets held at the bottom, the outer mallets held at the top, with the mallets crossed in the traditional manner (Burton, 1968; 1975).

Three of the most popular four-mallet holding techniques were considered: the traditional Musser grip, the Stevens grip, and the Burton grip. The Stevens grip was deemed unsuitable because the child could not effectively control the mallet length due to their smaller size and the instrument's distance, which prevented the child from reaching the pedal. The Musser grip was also found to be inappropriate because the mallets are dependent on each other, limiting independent control. In contrast, the Burton grip was preferred as it allows for better control of the mallet length.

In the control group, participants played in the usual manner, as specified in music school curricula. The two-mallet playing technique was applied: "both hands in succession," later incorporating fragments of American rudiments: R – right hand, L – left hand (e.g., RLRLRL RRLLRRLL RLRRLRLL, various hand combinations) (Goldenberg & Cirone, 2002).

As mentioned earlier, when playing with two mallets, the mallets should be held so that a triangular shape is formed in the middle between the right and left mallets,

tapering toward the mallet tips. The upper part of the hand – the palm – should be held parallel to the keyboard, with elbows half-bent in front of the body. The mallets protrude on the palm side by the width of two fingers.

Melodic Percussion Instrument. Both groups (experimental and control) played one of the melodic percussion instruments – the vibraphone, the instrument closest to the piano, which has a foot-operated sound-damping mechanism, i.e., a pedal. Additionally, the vibraphone has the most damping methods among all melodic percussion instruments (damping with mallets, fingers, and pedal).

The vibraphone was chosen for this quasi-experiment due to several important advantages:

1. At the initial stage of musical education, when a child does not yet know how to sustain sound using tremolo, the long notes produced on the vibraphone sound rich and create a sense of fullness.
2. The keyboard is at one level (sharps and naturals), so the mallets do not get caught on the upper keys. This creates a flat surface effect and makes it easier for the child to remember the musical text or scales.
3. Adjustable instrument and pedal height.
4. The instrument's range is 3 octaves. Since pieces at the initial stage of musical education are usually limited to 3 octaves, it is easier for the child to understand where each octave is located.
5. The keys widen at the bottom, making it easier to hit the notes when playing with four mallets. In the third octave, the width of the keys is sufficient for even a less skilled player to strike the keys accurately with a mallet.
6. Due to the possibility of sustaining long sounds, the vibraphone's structural features (metal bars) from the very first lessons develop a harmonic sense, as when playing a melody, the bass note is allowed to ring as a whole note.

Musical Piece. The same piece by Fernando Soro, "Vorkspiel," was selected for both the experimental and control groups. It is a melodic solo piece characterized by a prominent melody, simple yet expressive harmony, accompanied by a clear bass line. The time signature is 4/4. The piece can be performed using either two or four mallets.

To perform the piece with four mallets, basic knowledge is required: the ability to hold four mallets (Burton technique), familiarity with sound production principles, and basic sound-damping pedal technique.

Participants and Their Skills Assessment. The quasi-experiment involved 8 students from grades 2–3 (ages 8–9) at the Music School X in Vilnius. The school has five percussion instrument classes, and one of these classes teaches both rhythmic and melodic percussion instruments.

The quasi-experiment was conducted with students studying in a combined percussion instrument class, i.e., the only class where rhythmic percussion instruments are taught alongside melodic percussion instruments.

In this class, percussion students are initially introduced to basic music theory: rhythm theory, scales, arpeggios, and inversions. The greatest attention at the initial stage is given to correct mallet holding and body posture at the instrument.

The youngest students by age/grade were selected for the study. Eight students from grades 2–3 and their parents agreed to participate in the study. They were asked whether they preferred to play with two or four mallets. This way, two equal groups were formed – experimental and control – each with four students.

Both the experimental and control groups consisted of four boys holding Lithuanian citizenship, differing slightly only in age:

1. All boys assigned to the experimental group were 8 years old (2nd grade).
2. The control group included two boys aged 8, one aged 9, and one aged 10.

Before the start of the study, all students played all technical exercises and pieces using two mallets. During the first year of instruction, as mentioned earlier, all attention was focused on correct two-mallet holding and proper body posture at the instrument (both vibraphone and snare drum: the snare drum playing at the initial stage of music education is closely related to mastering the vibraphone/xylophone).

Before the quasi-experiment, their skill levels were assessed by an expert teacher (percussion instruments), who evaluated several aspects:

a) Sight-reading on the snare drum (performance of an unknown piece).
b) Playing major and minor scales up to three sharps on the vibraphone.
c) Control of two mallets when performing various technical tasks on the snare drum and vibraphone.
d) Use of the vibraphone pedal during the piece performance.

While observing how the participants performed these tasks, the expert teacher filled out a questionnaire, the data from which were later included in the study.

After assessing all 8 participants according to the selected criteria, the expert teacher concluded that the musical abilities of the participants were equal.

The quasi-experiment took place under natural conditions, conducted in a natural educational environment, with lessons held in real-life settings and situations. Participants in both the quasi-experimental and control groups were taught for half a year.

The quasi-experiment was integrated into a 45-minute lesson, with 25 minutes allocated to the regular lesson and 20 minutes dedicated to the quasi-experiment.

During the first 45-minute lesson, each participant in the experimental group was first introduced to several theoretical aspects:

1. Four-mallet handling technique (Burton technique):

- Grip, body posture at the instrument.
- Sound production principles: articulation.
- Pedal technique: pedaling according to the length of the bass note.

2. Participants in the control group were instructed during the first lesson as follows:

- Two-mallet technique: grip, body posture at the instrument.
- Sound production principles: articulation.
- Pedal technique: pedaling according to the length of the bass note.

The main difference between the groups was the use of either two or four mallets.

To analyze the progress and speed of mastering the four-mallet technique, assess body posture while playing, and the pace of learning the piece, each lesson was recorded on video.

Additionally, a journal was kept with various notes related to the participants' progress – these are useful when analyzing each case individually and comparing the progress of the experimental and control groups.

The 6-month experiment was divided into three parts: the first part took place in May 2024; the second part continued after the summer break – from September to early November 2024; the third part was conducted from early November to the end of January (31). This period included a three-month summer vacation, a one-week autumn break, and a three-week winter holiday (during the vacation periods, the children did not have the opportunity to play the vibraphone. None of the experiment participants had their own instrument at home).

A total of 256 videos were recorded – each child was recorded 32 times. The total recorded footage amounts to 78 hours and 40 minutes.

Each participant in both groups had 16 lessons before the first assessment and 16 later. The assessment lesson for both the experimental and control groups consisted of three parts:

1. Performance of the entire musical piece on the vibraphone with pedaling, at the designated metronome tempo.
2. Snare drum performance (sight-reading) of an unfamiliar text, specifically Etude No. 56 from B. Estrin's "Step by Step" snare drum etudes.
3. Execution of technical exercises on the snare drum.

The first part lasted 10 minutes, the second part 5 minutes, and the third part 5 minutes.

During the first part, the tempo was set identically for all participants. Observations were made regarding how the control and experimental groups performed the musical piece, specifically which group found the tempo comfortable and free of technical obstacles (such as mallet control, pedaling, and correct hand and overall body posture at the instrument). Additionally, it was assessed whether the child remembered the musical text (i.e., which notes to play) during the performance. If it was observed that the set (uniform) tempo was too fast for any participant, the student was asked to perform at a tempo that was comfortable for them. Once the piece was performed, the actual tempo was determined using a metronome and recorded in the participant's profile. First task: singles RLRLR.

During the second part, the correct (classical) two-mallet grip, proper hand and overall body posture in front of the musical instrument, as well as the ability to sight-read new musical notation, were observed and evaluated. Second task: doubles RRLL RRLL RRLL.

During the third part, observations were made regarding any changes or consistency in mallet grip, hand, and body posture in front of the instrument while performing three different tasks at varying tempos. Third task: paradiddle RLRR LRLL.

The second and third tasks were designed to determine the impact of applying the four-mallet technique (experimental group) on the two-mallet grip. Specifically, the study aimed to assess whether the four-mallet grip (G. Burton's method) in the initial stage of informal education facilitates the development of a correct two-mallet holding technique.

This article presents the experimental data up to the first assessment, i.e., the results of observing 16 lessons in selected aspects.

Research Ethics

Social research places strong emphasis on ethical considerations. Before the quasi-experiment began, written consent was obtained from the students' parents or guardians for the filming of lessons. Parents were provided with detailed information about the purpose of the video and audio recordings, the conditions under which they would be used, and contact details in case they did not consent to the material being used for teaching and learning purposes.

The study adhered to key ethical principles outlined in the methodological literature, including respect for personal dignity, the right to avoid harm, confidentiality, and anonymity (King, 2021; Moriña, 2021). To ensure compliance with these principles, all participants in the quasi-experiment were assigned codes: students in the experimental group were labeled with the letter E (e.g., E1, E2, E3, E4), and those in the control group with the letter C (e.g., C1, C2, C3, C4). This approach ensured the anonymity and confidentiality of all participants.

The Results of the 3 Selected Criteria over the Course of 15 Lessons

As mentioned earlier (Section 2.1), the experiment participants played the vibraphone only during the designated time. While learning the same piece, they practiced producing articulated sound, correct mallet grip, and proper body posture at the instrument. During the remaining time, the children played the snare drum and performed the pieces, etudes, and technical exercises prescribed in the percussion curriculum.

Prior to the first phase (assessment) of the quasi-experiment, which took place for all participants during the sixteenth quasi-experiment lesson, the following were observed, recorded, and noted in the log:

1. The lesson number at which the first part of the piece was learned (considered learned when the musical text is performed smoothly, without errors, at the tempo set by the metronome).
2. The lesson number at which the entire musical piece was learned and when the first and second parts of the piece were connected smoothly, as required by the composition (considered learned when the musical text is performed smoothly, without errors, at the tempo set by the metronome).
3. The lesson number at which learning to play using the vibraphone pedal began, pedaling according to the harmony of the piece, in this case based on the length of the lowest note (pedaling is introduced once both parts of the musical piece are learned, mallet grip and body posture at the vibraphone are correct, and the metronome tempo is stable, with minimal tempo fluctuations unrelated to emerging technical challenges, and the student feels comfortable performing the entire piece from memory).

Results of the Experimental Group

When evaluating three main aspects – how many lessons it took to learn to play half of the piece, how many lessons it took to learn to play the entire piece, and how many lessons were needed to master pedalization – the following results are evident:

1. For the four members of the experimental group, it took an average of 5.5 lessons to learn half of the piece (see Fig. 1).
2. To learn the entire piece, they needed an average of 7.5 lessons (see Fig. 1).
3. The participants mastered pedalization in an average of 11.25 lessons (see Fig. 1).

As illustrated in the chart above, half of the piece was learned relatively quickly by the participants. Most participants achieved similar results in this category, with E1[1], E2, and E3 requiring 6 lessons. Notably, E4 learned half of the piece in just 4 lessons, which contributed to lowering the overall average number of lessons needed for all four participants.

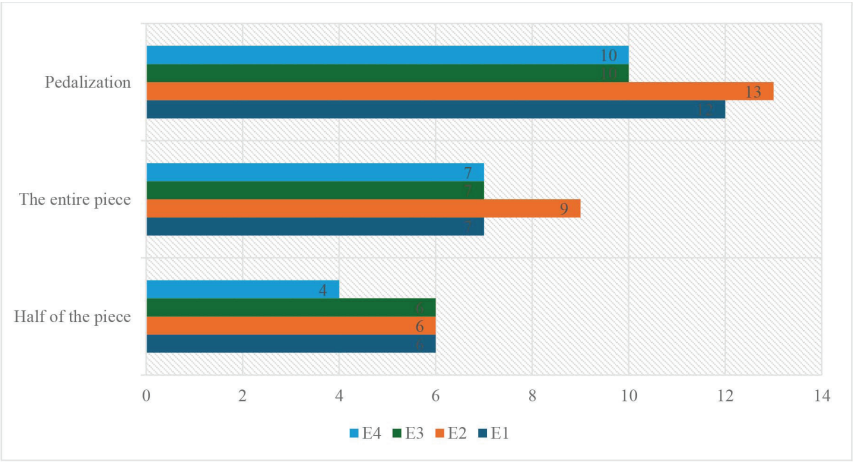
The entire piece shows very similar values for E1, E3, and E4 (all at 7), with E2 slightly higher at 9. Comparing these results with the previous data, it is noteworthy that although E4 learned half of the piece in just 4 lessons, they required the same number of lessons as E1 and E3 (7 lessons) to learn the entire piece.

Pedalization was introduced after the participants had already learned the piece's text, but mastering this technique required the greatest effort. This is the reason why pedalization has the highest overall values among the three categories, with E2 leading at 13.

[1] In the figure, "E" represents an individual from the experimental group, and the number corresponds to the participant's identification number.

Figure 1

The Rate of Learning Pedalization, Half of the Piece, and the Entire Piece Measured in Lessons: the Experimental Group[2]



Among the four participants, E4 emerged as the top performer, demonstrating the highest level of proficiency in both the performance of the first half of the piece and pedalization. This indicates a strong overall mastery of the material and advanced technical coordination. Participant E3 exhibited the most consistent performance across all three tasks, suggesting stable progress and balanced skill development. In contrast, E2 showed comparatively weaker results, particularly in the task involving the performance of half of the piece, highlighting an area that may require further instructional support or practice.

Results of the Control Group

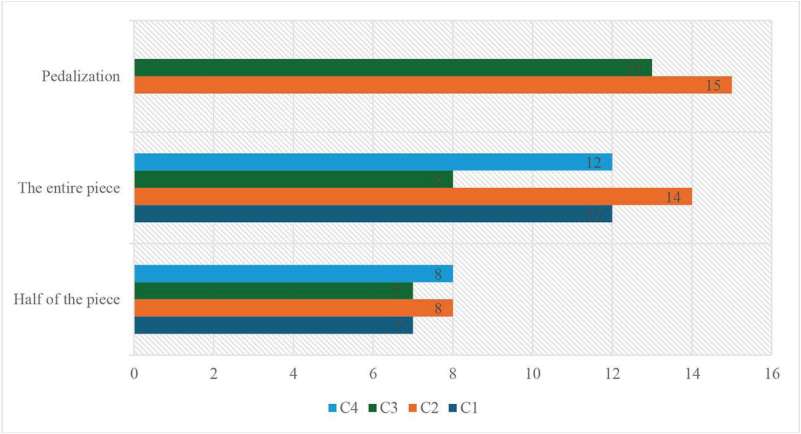
The results of the control group, as shown in Figure 2, were also compared across three aspects: the number of lessons needed to learn half of the piece, the entire piece, and pedalization (see Fig. 2):

1. For the four members of the control group, it took an average of 7.5 lessons to learn half of the piece (see Fig. 2).
2. To learn the entire piece, they needed an average of 11.5 lessons (see Fig. 2).
3. Two participants mastered pedalization in an average of 14 lessons (see Fig. 2), while the remaining two participants did not manage to master this aspect within the given timeframe.

[2] The numbers indicated in the figure represent the number of lessons.

Figure 2

The Rate of Learning Pedalization, Half of the Piece, and the Entire Piece Measured in Lessons: the Control Group



All participants required 7–8 lessons to learn half of the piece, indicating relatively uniform progress at this early stage. C2[3] required the most lessons, suggesting more difficulty with the full piece, while C3 progressed more quickly than the others. Only C2 and C3 succeeded in mastering pedalization, requiring a high number of lessons (average 14), while C1 and C4 did not reach this stage within the study period.

Participant C3 demonstrated the highest efficiency, requiring the fewest lessons to complete the entire piece and successfully mastering pedalization. In contrast, C2 faced the greatest challenges, as evidenced by the highest number of lessons needed across all tasks, although all objectives were eventually achieved. Participants C1 and C4 exhibited inconsistent progress; while both managed to complete the entire piece, they were unable to master pedalization within the designated timeframe.

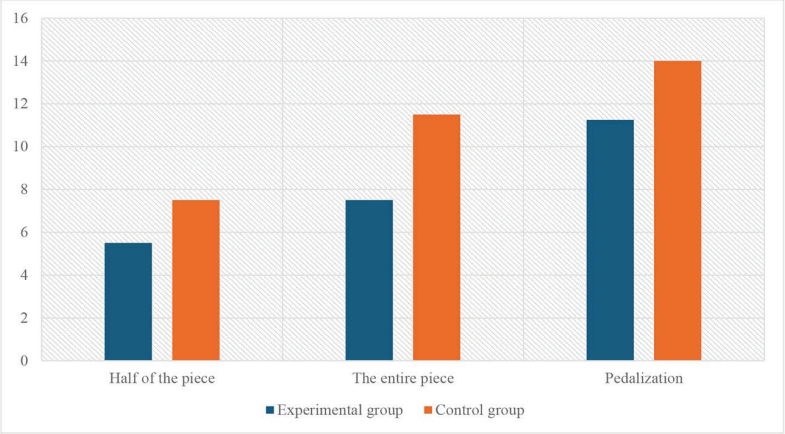
Comparison of Experimental and Control Groups

The experimental group outperformed the control group in all three aspects, suggesting that the applied teaching method (likely involving the four-mallet technique) enhanced learning efficiency and technical skill acquisition (see Fig. 3).

[3] In the figure, "C" represents an individual from the control group, and the number corresponds to the participant's identification number.

Figure 3

Comparison of Learning Progress Between Experimental and Control Groups



The experimental group demonstrated faster acquisition of the initial material, requiring an average of 5.5 lessons compared to 7.5 lessons for the control group, and they completed the full piece significantly quicker as well, needing only 7.5 lessons versus 11.5 lessons.

All participants required a greater number of lessons to master pedalization than to learn the musical piece itself (see Sections 3.1 and 3.2), underscoring the necessity for specialized pedagogical approaches when instructing beginners in this technique. Notably, the experimental group demonstrated greater efficiency in mastering pedalization, achieving this skill in an average of 11.25 lessons compared to 14 lessons in the control group. Moreover, while all members of the experimental group successfully acquired pedalization within the given timeframe, two participants in the control group were unable to do so, further emphasizing the disparity in technical achievement and the effectiveness of the experimental teaching methods.

The data reveal notable individual differences in the rate of learning within the experimental group. For example, one participant (E4) acquired half of the piece in just 4 lessons – significantly faster than their peers – thereby reducing the group's average learning time for this task. However, this initial rapid progress did not correspond to a faster overall mastery of the entire piece or the pedalization technique, suggesting that early gains may not reliably predict success in more complex or technically demanding aspects of the repertoire. In contrast, participants in the control group generally required more lessons to learn both the foundational and advanced material, with some failing to master pedalization within the study period. This contrast underscores that, despite individual variability, the pedagogical approach employed with the experimental group appears to facilitate more consistent and sustained progress through progressively challenging learning stages.

Despite some individual variation, the majority of participants in the experimental group achieved similar results in learning both half and the entire piece, indicating that the four-mallet technique can be systematically taught to young learners with consistent outcomes. In contrast, the control group exhibited greater variability in learning rates and overall progress, with some participants requiring significantly more lessons and others unable to master key technical components such as pedalization within the study timeframe. This comparison suggests that the structured introduction of the four-mallet technique may contribute to more uniform and effective skill acquisition among beginners.

This comparison provides evidence that the four-mallet technique, when introduced systematically and with appropriate pedagogical support, is accessible to young beginners and can accelerate their technical and musical development. Future research should further explore long-term outcomes and refine methods for teaching advanced techniques such as pedalization in early music education.

Discussion and Conclusions

Worldwide, melodic percussion instruments have been an integral part of music education at the primary stage for decades: these instruments are played not only in specialized music schools but also in primary or secondary education institutions. Various countries have deep traditions of playing melodic percussion instruments (Funk, 1936; Payson & McKenzie, 1976; Hertel, 2005; Menter et al., 2011; Pickering, 2020).

In Lithuania, melodic percussion instrument traditions in schools are underdeveloped due to: 1) a lack of beginner-level methodological materials (textbooks, repertoire), forcing teachers to adapt methods from rhythmic percussion; 2) an insufficient inventory, with the vibraphone largely unknown; 3) improper techniques limiting instrument potential; and 4) instruction limited to specialized university students.

These factors delay four-mallet technique training until late specialized schools (ages 15–16) or early university, later than optimal. This situation underscores the need for innovative approaches in early vibraphone education, precisely addressing the research gap highlighted earlier – no prior studies, neither in Lithuania nor internationally, have examined four-mallet introduction at initial stages.

This quasi-experimental study's findings on introducing the four-mallet technique at the early stages of non-formal vibraphone education reveal both alignments and divergences from prior research, while substantiating a novel pedagogical shift. Existing literature predominantly positions the four-mallet technique as an advanced skill for university-level students, emphasizing its technical applications in marimba performance – such as Zirkle's (2003b) analysis of Bach works, Brooks' (2007) exploration of music theory integration, Zirkle's (2012b) arrangements, McLean's

(2015) focus on tone accuracy via chorales, Shaw-Rutschman's (2018) chord-playing methods, and Morales' (2020) classical adaptations. Methodological resources like Burton (1968, 1975), Minchin (2021), Peters (1995, 2017), Shaefer (1985), and Schietroma (1991) further support four-mallet mastery but target later stages, with few exceptions like Eyles (2000), Whaley (2002), and Martin (2009), adaptable to beginners. Notably, no prior studies – neither in Lithuania nor internationally – have examined four-mallet introduction in initial vibraphone instruction, making this research the first to bridge this gap.

The results confirm theoretical claims about the technique's potential for enhanced hand independence and expressivity (e.g., as implied in Cheesman, 2012b; Morales, 2020) but refute the prevailing assumption of its excessive complexity for novices. After 15 lessons, all experimental group participants successfully performed the selected piece using four mallets, demonstrating faster progress than traditional two-mallet methods. This aligns with observations of greater versatility: equipped with four mallets, learners more readily tackle technical challenges and musical interpretation, fostering rhythmic precision and creativity early on. However, progress varies by task complexity – some pieces prove demanding regardless of mallet count, echoing challenges in two-mallet literature (e.g., McLean, 2015) – yet the four-mallet approach ultimately accelerates proficiency through its broader technical framework.

Practically, these outcomes hold significant implications for vibraphone pedagogy, particularly in non-formal early education settings. By embedding four mallets from the outset, educators can cultivate advanced skills without prolonging basic training, enhancing students' expressive range and preparing them for complex repertoire. This challenges conservative curricula and supports integration into Lithuanian music education, where vibraphone resources remain underdeveloped.

Although progress has been achieved, the study remains limited for now, as only the first interim assessment after 15 lessons out of the planned 32 has been analyzed. Additionally, this part of the study does not yet present qualitative data – learner motivation is planned to be described later, after analyzing the collected material.

In Lithuania, conducting studies with large numbers of beginners is impossible, as vibraphone instruction is available only in major schools where this instrument is included in percussion programs. That is, vibraphone instruction is not available in all music schools due to a lack of methodological materials, resources, and qualified teachers.

To address unresolved challenges – like variable task difficulty and access to beginner-friendly materials – pedagogues should develop graded four-mallet curricula, incorporating hybrid two/four-mallet progressions and digital tools for home practice. These recommendations aim to elevate vibraphone education quality, promoting inclusive, technique-rich training from day one.

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Iššūkis tradicinei vibrafono pedagogikai: keturių lazdelių metodikos taikymas ankstyvajam neformaliajam muzikiniam ugdymui

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Santrauka

Šio tyrimo tikslas – įvertinti keturių lazdelių metodikos poveikį pradiniame neformaliojo ugdymo muzikos etape: nustatyti metodikos veiksmingumą, lyginant ją su tradicine dviejų lazdelių metodika. Tai yra pirmas tokio pobūdžio kvazieksperimentas, kuriame dalyvavo eksperimentinė ir kontrolinė mokinių grupės: eksperimentinė grupė mokyta naujovišku keturių lazdelių metodu, o kontrolinė – tradicine dviejų lazdelių technika.

Pirmieji kokybinio tyrimo rezultatai parodė, kad pradiniame etape taikoma keturių lazdelių metodika yra ne tik lengvai ir natūraliai įvaldoma, bet ir gali labiau padėti tobulinti techninius įgūdžius bei muzikinę ekspresiją.

Tyrimo pabaigoje daromos tokios išvados:

1) Keturių lazdelių technika yra taikytina pradiniame neformaliojo muzikinio ugdymo etape: ji yra natūraliai įvaldoma, veiksminga, skatina greitesnę mokymosi pažangą.

2) Keturių lazdelių technika padeda mokiniams geriau valdyti rankas, o tai, palyginti su tradicine dviejų lazdelių technika, suteikia galimybę išraiškingiau atlikti kūrinius.

3) Keturių lazdelių taikymas pradiniame neformaliojo ugdymo muzikos etape gali pakeisti tradicinį požiūrį į vibrafono mokymo pradžią ir padėti plėtoti techninius bei muzikinius gebėjimus nuo pat pirmųjų žingsnių.

Esminiai žodžiai: *keturių lazdelių metodika, neformalusis muzikinis ugdymas, vibrafonas, kvazieksperimentas.*

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