

Group-Based Differentiated Instruction Improves Guitar Chord Skills Among SMAN 3 Semarang Students

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Abstract

Music instruction in senior high schools frequently faces differences in students' musical abilities, particularly in developing practical guitar skills. Such variations in prior knowledge and playing experience may create difficulties in providing learning experiences that are equitable, effective, and meaningful for all students. This study investigates the effectiveness of a differentiated group learning model in improving students' ability to perform guitar chords. The research employed Classroom Action Research (CAR) through two cycles with 36 students from Grade XI 10 at SMA Negeri 3 Semarang during the 2025/2026 academic year. Data were obtained through participatory observations, practical guitar performance assessments, student reflection questionnaires, and documentation. Students' performance was assessed using a rubric covering

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fingering accuracy, strumming accuracy, chord transition ability, and overall musicality. The results revealed a progressive improvement in students' guitar chord performance throughout the research process. The average score in the pre-cycle was 74.5, with 38% of students achieving the required mastery level. After Cycle I, the average score increased to 87, accompanied by a classical mastery rate of 52.7%. At the completion of Cycle II, students achieved an average score of 96.5, while classical mastery increased to 83.4%. This improvement was facilitated by flexible grouping according to students' initial abilities, differentiated scaffolding, and peer-teaching practices that encouraged students to support one another during learning activities. The findings suggest that differentiated group learning is effective in responding to differences in students' abilities while increasing active participation and practical guitar competence. Thus, this learning model provides a relevant approach for creating more inclusive, adaptive, and sustainable guitar learning in senior high school music education.

Keywords: Differentiated Group Learning; Guitar Chord Skills; Music Education; Classroom Action Research; Differentiated Instruction.

INTRODUCTION

Music education at the senior high school level plays an important role in developing students' creativity, aesthetic appreciation, musical competence, and ability to express ideas through musical activities. One practical activity that is relevant to students' characteristics is guitar instruction. The guitar is a familiar instrument among adolescents because it is widely accessible and can be used to perform both melodies and harmonies through chords. Learning to play the guitar in music education is not limited to instrumental performance skills; it can also support the development of motor coordination, concentration, self-confidence, interaction, and cooperation through musical activities (Rizal et al., 2023). Therefore, guitar instruction can serve as a medium for developing students' musical abilities as well as complementary competencies.

In practice, guitar instruction in schools does not always take place with the same level of readiness among all students. Differences in previous experience mean that some students are already familiar with playing the guitar, whereas others still require an introduction to basic techniques. These variations can be observed in students' abilities to position their fingers correctly, produce clear string sounds, perform strumming patterns, and transition between chords. Such differences in ability present a challenge for teachers because uniform instructional treatment may not adequately address the needs of students with different levels of readiness.

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Febriyani and Sukmayadi (2023) suggest that students' characteristics and learning readiness need to be considered in instructional planning so that the learning process provides opportunities for all students to develop.

This condition was observed in music instruction at SMA Negeri 3 Semarang based on initial observations conducted during the first semester of the 2025/2026 academic year. Of the 36 students in Grade XI 10, 14 students (38%) were able to play basic chords, namely C, Am, F, and G, with relatively accurate finger positioning and chord transitions. In contrast, 22 students (62%) still experienced difficulties in determining finger positions, producing clear notes, and transitioning between chords. These initial findings demonstrate considerable differences in students' levels of readiness within the classroom. This situation indicates that a uniform instructional strategy has not fully addressed the learning needs of all students. This finding is consistent with Suprobo and Ratnawati (2024), who explain that practical skills instruction involving students with diverse abilities requires flexible instructional management that responds to students' individual conditions.

Differentiated instruction can be considered an alternative approach to addressing such diversity. According to Tomlinson (2001), differentiation is an approach that enables teachers to adjust learning content, processes, and products according to students' readiness, interests, and learning profiles. Through this approach, students do not necessarily receive identical learning experiences but are still directed toward achieving the established learning competencies. Differentiated instruction is also consistent with student-centered learning because it allows teachers to provide support based on students' characteristics and levels of readiness. Several studies have demonstrated that differentiated instruction can positively influence students' motivation, engagement, and learning achievement at the secondary education level (Wuryani et al., 2023; Sutrianto & Asyhar, 2024). The approach can also help students develop understanding that is more appropriate to their individual abilities and learning needs (Rohimat et al., 2023).

The implementation of differentiation in guitar instruction can be facilitated through flexible student grouping. Grouping students according to their initial abilities enables teachers to provide different forms of assistance, practice, and challenges for each group. Within this process, scaffolding can be provided gradually according to students' needs, while peer learning can be utilized to encourage students to support one another during practice. Flexible grouping combined with collaborative learning has the potential to create a more active learning environment because students learn not only from the teacher but also through interaction with their peers. In the context of arts education, Nabawi and Murbiyantoro (2025) found that



differentiated instruction can support active participation, creativity, and the development of students' practical skills. Learning activities that emphasize cooperation can also strengthen communication and social interaction among students throughout the learning process (Harefa et al., 2023).

Although research on differentiated instruction has continued to develop, its specific application to guitar skills instruction at the senior high school level remains relatively limited. Previous studies have tended to focus on differentiation in general academic subjects or on overall learning outcomes. Meanwhile, practical music instruction requires strategies that can adjust the level of practice, support, and challenges to students' individual technical abilities. This condition represents an important research gap, particularly concerning the use of ability-based grouping, differentiated scaffolding, and peer learning in developing guitar chord skills.

Based on these conditions, this study focuses on the implementation of differentiated group learning as an effort to improve the guitar chord skills of Grade XI 10 students at SMA Negeri 3 Semarang. The study addresses two research questions: (1) How is differentiated group learning implemented in guitar chord instruction for Grade XI 10 students at SMA Negeri 3 Semarang? and (2) To what extent can the implementation of this model improve students' guitar chord skills through two cycles of Classroom Action Research? The findings are expected to provide an alternative music education strategy that can accommodate differences in students' abilities while creating a more active, collaborative, and adaptive learning process.

LITERATURE REVIEW

Differentiated Instruction

Differentiated instruction is a learning approach that responds to the diversity of students' abilities, learning needs, interests, and prior experiences. Tomlinson et al. (2003) explain that differentiation involves adjusting the learning content, process, product, and classroom environment based on students' readiness, interests, and learning profiles. The goal of this approach is not to set different learning objectives for each student, but rather to provide appropriate learning opportunities and support so that students starting from different points can still achieve the expected competencies. (Zulaikha & Laeli, 2023)

The implementation of differentiated instruction begins with identifying students' learning readiness. Initial assessment enables teachers to understand variations in students' knowledge, skills, and learning needs before designing learning activities. The results of this assessment can then be used to determine appropriate learning activities, task difficulty levels, and scaffolding.



Consequently, differentiated instruction encourages teachers to design learning that responds to individual student characteristics rather than applying a one-size-fits-all approach to the entire class. (Kurnila et al., 2025)

This approach has strong relevance to music education because students generally possess different levels of musical knowledge and experience when participating in learning activities. Some students may have acquired instrumental skills through extracurricular activities, private lessons, family environments, or independent practice, while others may have little or even no prior experience. Differences in musical readiness may affect students' ability to participate in practical activities at the same pace. Therefore, differentiated instruction provides teachers with an opportunity to accommodate such diversity while maintaining the overall learning objectives. (Carioti et al., 2019)

Differentiated Group Learning

Differentiated group learning integrates the principles of differentiated instruction with collaborative learning through the formation of flexible learning groups. Students can be grouped based on their initial level of competency, specific learning needs, or skills that require further development. Such grouping is not intended to permanently categorize students according to their abilities, but rather to facilitate learning activities that are appropriate to their level of readiness at a particular point in time. (Ameko et al., 2025)

Through flexible grouping, teachers can provide more targeted support to students. (Lee & Hung, 2025) Students who are still developing basic competencies can receive more intensive explanations, demonstrations, and guided practice, while students who have demonstrated higher levels of competency can be provided with more challenging activities. This arrangement enables students to work on tasks that are appropriate to their level of ability, ensuring that the tasks are neither too difficult nor too easy. (Palieraki & Koutrouba, 2021)

The implementation of differentiated group learning can be further strengthened through *scaffolding* and *peer learning*. *Scaffolding* refers to temporary support provided to help students perform tasks that they are not yet able to complete independently. As students' competencies develop, such support can gradually be reduced. (Wu, 2026) Meanwhile, *peer learning* provides students with opportunities to exchange knowledge, demonstrate techniques, provide feedback, and support one another. These strategies are particularly relevant to practical music learning because instrumental skills require repeated practice, observation, correction, and immediate feedback. ("Peer Learning in University-Level Piano Pedagogy," 2026)



Guitar Chord Skills

Guitar chord skills encompass the ability to form, produce, and play chords accurately and consistently. Chord playing requires coordination in finger placement, finger pressure on the strings, strumming technique, sound production, rhythm control, and transitions from one chord shape to another. Developing these abilities requires systematic practice, as weaknesses in any one component can affect the overall quality of performance. (Garg et al., 2019)

In basic guitar learning, several major and minor chords, such as C, Am, F, and G, are commonly introduced as fundamental chord shapes. However, the ability to memorize chord shapes does not fully demonstrate mastery of practical skills. Students must also be able to produce clear sounds, maintain appropriate rhythmic patterns, and transition between chords with increasing fluency. Therefore, the assessment of guitar chord skills should consider several interrelated aspects of performance rather than focusing solely on the ability to recall chord positions. (Moura et al., 2024)

In this study, guitar chord skills are assessed based on four indicators: fingering accuracy, strumming accuracy, chord transitions, and musicality. Fingering accuracy refers to the ability to place the fingers correctly when forming a chord. Strumming accuracy relates to the ability to play rhythmic patterns consistently and appropriately. Chord transitions indicate the ability to move accurately and smoothly from one chord position to another. Meanwhile, musicality describes the overall quality of performance, including rhythmic stability, fluency, consistency, and musical expression. (Pratama & Asmarani, 2026)

Differentiated Instruction in Music Education

Music education integrates conceptual understanding with practical skills. In instrumental music learning, students need opportunities to observe demonstrations, engage in repeated technical practice, receive feedback, identify mistakes, and make improvements. (McPherson & Blackwell, 2025) These needs become more complex when students in the same class have different levels of experience and technical competence. (Yang, 2025)

Previous studies have shown that differentiated instruction can contribute to increased student engagement, motivation, creativity, and learning outcomes by providing learning experiences that are tailored to individual needs (Hasibuan et al., 2025) In arts education, differentiated instruction can also encourage students to participate more actively and develop practical skills according to their respective levels of competency. These findings further support the relevance of differentiated instruction as an approach to practical music learning. (Nur Intang et al., 2025)



In guitar learning, differentiated group learning can be implemented through several stages. First, the teacher identifies students' initial abilities in forming and playing basic chords. Second, students are flexibly grouped according to their level of readiness. Third, each group is provided with practice activities and learning support tailored to its needs (Zhang et al., 2026). Students who experience difficulties with finger placement can receive more intensive guidance, while students with stronger skills can be provided with exercises involving smoother chord transitions or more varied rhythmic patterns. Furthermore, *peer learning* can complement teacher guidance by providing students with opportunities to demonstrate techniques to one another, observe each other's performance, and provide feedback. ("Peer Learning in University-Level Piano Pedagogy," 2026)

Theoretical Frameworks

The theoretical foundation of this study emphasizes the relationship between differentiated group learning and the development of students' guitar chord skills. Students begin the learning process with different levels of prior knowledge and practical experience. These differences are first identified through an initial assessment and then used as the basis for forming flexible learning groups. Each group subsequently receives learning activities, practice tasks, and *scaffolding* tailored to its respective level of readiness. (Ardenlid et al., 2025)

During the learning process, interactions among students provide additional opportunities to observe demonstrations, practice together, exchange feedback, and collaboratively address technical difficulties. Through repeated practice with appropriate support, students are expected to improve their mastery of various aspects of guitar chord playing techniques. (Sebelum Kogoya, 2026)

The conceptual framework of this study can be illustrated as follows:

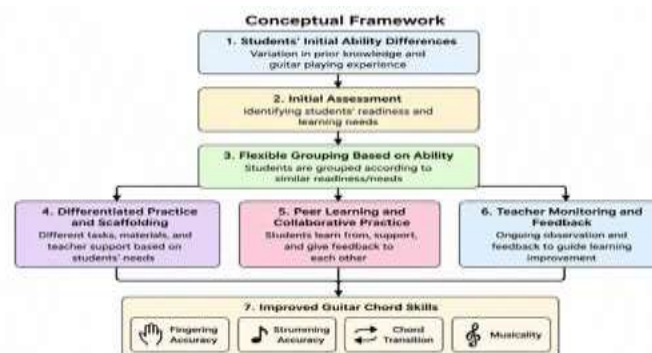


Figure 1: Conceptual Framework

Based on this framework, differentiated group learning is positioned as the instructional approach employed in this study, while guitar chord skills represent the learning outcome targeted for improvement. The integration of flexible grouping, differentiated *scaffolding*, and *peer learning* is expected to create a learning environment that is more responsive to the diversity of students' readiness levels while supporting the gradual development of practical guitar skills.

RESEARCH METHODS

Research Design

This study employed Classroom Action Research (CAR) using the Kemmis and McTaggart action research model. The model consists of four interconnected stages in each cycle: planning, action, observation, and reflection. CAR was selected because the study aimed to improve the quality of guitar instruction through the implementation of differentiated group learning while simultaneously evaluating changes in students' guitar chord skills.

The research was conducted in two cycles, with each cycle consisting of two meetings. Each meeting was allocated two lesson periods. The research procedure was implemented systematically to allow the instructional intervention to be observed, evaluated, and improved from one cycle to the next. The success criterion was established at a minimum of 80% classical mastery, with an individual mastery score of at least 75. If the success criterion had not been achieved by the end of Cycle II, further improvement cycles would have been considered.

Research Setting and Participants

The study was conducted at SMA Negeri 3 Semarang, Indonesia, during the 2025/2026 academic year. The participants were 36 students of Grade XI 10 who participated in music education as part of the Arts and Culture subject. The participants consisted of 15 male and 21 female students.

The class was selected purposively based on the results of the preliminary diagnostic assessment. The assessment indicated considerable differences in students' initial guitar-playing abilities. Some students had previous experience playing the guitar, while others had limited or no experience with basic guitar chords. This variation made the class appropriate for implementing differentiated group learning.

Research Focus and Operational Definition

The focus of the study was students' guitar chord skills in practical music learning. Guitar



chord skills were operationally defined as students' ability to perform basic guitar chords, particularly C, Am, F, and G, accurately and fluently.

Students' guitar chord performance was assessed using four indicators:

1. Fingering accuracy, referring to the accuracy of finger placement on the appropriate strings and frets when forming chords.
2. Strumming accuracy, referring to the ability to perform the required strumming pattern with appropriate rhythm and consistency.
3. Chord transition, referring to the ability to move from one chord to another smoothly without disrupting the rhythmic flow of the performance.
4. Musicality, referring to the overall quality of performance, including rhythmic stability, tempo consistency, dynamics, fluency, and musical expression.

Each indicator was assessed using a performance rubric. The total score represented the students' individual guitar chord skill achievement. An individual score of ≥ 75 was established as the mastery criterion.

Research Instruments and Materials

The research instruments and learning materials were prepared before the implementation of the action. The instruments consisted of:

1. a diagnostic guitar performance test to identify students' initial abilities;
2. a guitar chord performance rubric;
3. a structured observation sheet;
4. a student reflection questionnaire; and
5. field notes and documentation.

The learning materials consisted of basic guitar chord exercises involving C, Am, F, and G. Acoustic or classical guitars were used as the main practical instruments. Student worksheets were also provided to guide chord formation, fingering practice, strumming patterns, and chord transitions. Photographs and video recordings were used as supporting documentation of the learning process.

Research Procedures

The research began with a preliminary assessment to identify students' initial guitar-playing abilities. Students were asked to perform basic chords and simple chord transitions. The results were used to determine students' readiness levels and to design differentiated learning

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activities.

The first cycle consisted of four stages. In the planning stage, the researcher prepared lesson plans, student worksheets, differentiated practice materials, grouping arrangements, observation sheets, and assessment rubrics. Students were grouped according to their initial level of guitar competence.

In the action stage, differentiated group learning was implemented. Students practiced guitar chords in groups according to their learning needs. Students with limited basic skills received more intensive teacher guidance and step-by-step demonstrations, while students with stronger skills were given more challenging chord-transition and rhythmic exercises. Peer learning was incorporated by encouraging students to demonstrate techniques, provide feedback, and assist group members.

In the observation stage, the collaborating teacher observed students' participation, group interaction, practice behavior, and implementation of peer learning. The researcher also recorded relevant classroom events through field notes and documentation.

In the reflection stage, the researcher and collaborating teacher reviewed the observation results and students' performance scores. Difficulties identified during Cycle I were used as the basis for improving the instructional strategy in Cycle II.

Cycle II followed the same four stages but incorporated revisions based on the reflection from Cycle I. Improvements focused on providing more targeted scaffolding, adjusting group activities according to students' progress, increasing opportunities for repeated practice, and strengthening peer-teaching activities. At the end of Cycle II, students completed a guitar performance assessment using the same assessment indicators.

Data Collection

Data were collected using four techniques. First, practical performance tests were administered during the preliminary assessment and at the end of each cycle to measure students' guitar chord skills. Students performed the designated chords and chord transitions, which were assessed using the established performance rubric.

Second, participatory observation was conducted by the collaborating teacher using a structured observation sheet. The observation focused on student participation, engagement in group activities, cooperation, learning behavior, and peer-teaching interactions.

Third, student reflection questionnaires were administered to obtain information about students' perceptions of the differentiated group learning process, including their learning



experiences, difficulties, confidence, and perceived benefits of peer support.

Fourth, documentation and field notes were collected throughout the research process. Photographs, video recordings, and field notes were used as supporting evidence to describe the implementation of the intervention and changes in classroom learning behavior.

Data Analysis

The collected data were analyzed using quantitative and qualitative approaches. Quantitative data were obtained primarily from students' practical guitar performance scores. Descriptive statistics were used to calculate the mean, minimum score, maximum score, and percentage of students achieving mastery.

The mean score was calculated using:

$$\text{Mean} = \Sigma X / N$$

where ΣX represents the total score obtained by all students and N represents the total number of students.

Individual mastery was determined when a student obtained a score of ≥ 75 . Classical mastery was calculated using the following formula:

$$\text{Classical Mastery (\%)} = (\text{Number of Students Achieving } \geq 75 / \text{Total Number of Students}) \times 100$$

The intervention was considered successful when at least 80% of students achieved the individual mastery criterion.

Qualitative data obtained from observations, student reflections, and field notes were analyzed using the interactive model proposed by Miles, Huberman, and Saldaña (2014). The analysis consisted of three interconnected activities: data condensation, data display, and conclusion drawing/verification. Data condensation involved selecting and organizing information relevant to students' participation, group interaction, peer learning, and learning difficulties. The condensed data were then displayed in a structured form to identify patterns and changes across the research cycles. Finally, conclusions were drawn and verified by comparing qualitative findings with the quantitative results from each cycle.

The results from the preliminary assessment, Cycle I, and Cycle II were then compared to determine the extent to which differentiated group learning contributed to changes in students' guitar chord skills. The comparison focused on both the improvement in average performance scores and the increase in classical mastery.



RESULT**Pre-Cycle Results**

The pre-cycle assessment was conducted to identify students' initial skills in playing basic guitar chords before the implementation of differentiated group learning. The assessment focused on the students' ability to play the basic chords C, Am, F, and G, including fingering accuracy, strumming accuracy, chord transitions, and musicality.

The initial assessment showed that 14 out of 36 students achieved the minimum mastery criterion (KKM), while 22 students had not yet achieved the criterion. The mean score of students' guitar chord-playing skills was 74.5, with a classical mastery level of 38.9%. The results are presented in Table 1.

Cycle I**Table 1. Students' Guitar Chord-Playing Skills in the Pre-Cycle**

Indicator	Result
Number of students	36
Students achieving KKM	14
Students not achieving KKM	22
Mean score	74.5
Classical mastery	38.9%

Table 2. Cycle 1 Action Design

Group	Pretest	Treatment	Posttest
Grade XI 10	O1	X1 (Group-Based Differentiated Learning)	O2

Note: O1 = pre-cycle assessment result; X1 = Cycle I intervention; O2 = Cycle I assessment result.

The results of the Cycle I intervention indicated an improvement in students' learning outcomes. The mean score increased to 87.0, with 19 students (52.7%) achieving the mastery criterion, while 17 students (47.3%) had not yet achieved the criterion.



Table 3. Distribution of Cycle I Results

Score Interval	Level	Frequency	Percentage
90 – 100	Very High	3	8,3%
75 – 89	High	19	52,8%
60 – 74	Low	10	27,8%
< 60	Very Low	4	11,1%

Cycle II

Table 4. Cycle II Action Design

Group	Pretest	Treatment	Posttest
Grade XI 10	O2	X2 (Improved Differentiated Learning)	O3

Note: O2 = Cycle I results; X2 = Cycle II intervention; O3 = Cycle II results.

The results of Cycle II showed a significant improvement in students' learning outcomes. The class mean score increased to 96.5, with 30 students (83.4%) achieving the minimum mastery criterion (KKM), while 6 students (16.6%) had not yet achieved the criterion.

Table 5. Distribution of Cycle II Results

Score Interval	Level	Frequency	Percentage
90 – 100	Very High	12	33,3%
75 – 89	High	20	55,6%
60 – 74	Low	4	11,1%
< 60	Very Low	0	0%



Summary of Learning Outcome Improvement

Table 6. Summary of Learning Outcome Improvement

Indicator	Pre-Cycle	Cycle I	Cycle II
Mean score	74,5	87	96,5
Highest score	95	95	95
Lowest score	65	85	85
Students achieving mastery	14 (38%)	19 (52,7%)	30 (83,4%)
Students not achieving mastery	22 (62%)	17 (47,3%)	6 (16,6%)

Graphic Learning Outcome Improvement Graph

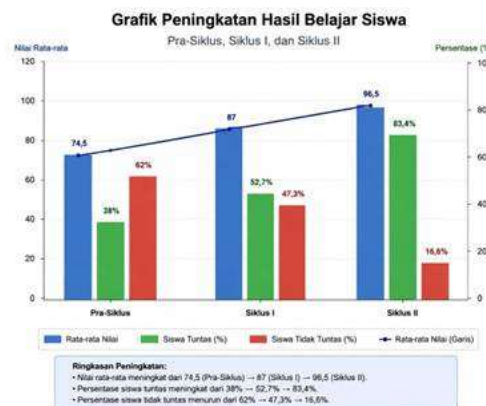


Figure 2. Learning Outcome Improvement Graph

DISCUSSION

The findings indicate that the implementation of differentiated group learning was followed by an improvement in students' guitar chord-playing skills. The learning approach accommodated differences in students' initial abilities by providing learning activities and assistance according to their respective levels of readiness.

This approach is particularly relevant to practical music learning because students enter the classroom with different levels of musical experience. Some students may already have experience playing guitar outside school, whereas others may have limited or no prior experience. Therefore, differentiated grouping provides opportunities for students to practice according to their individual learning needs.

The implementation of flexible grouping also facilitated peer interaction and collaborative learning. Students with stronger guitar-playing skills were able to assist peers who experienced difficulties in positioning their fingers, producing accurate sounds, and transitioning between chords. This peer-teaching process created opportunities for students to actively participate in the learning process rather than relying solely on teacher demonstrations.

The improvement in students' performance can be observed from the increase in the mean score from 74.5 in the pre-cycle to 87.0 in Cycle I and 96.5 in Cycle II. Classical mastery also increased from 38.9% to 52.8% and subsequently to 83.3%. These findings indicate that the implementation of the intervention was accompanied by an increase in the number of students achieving the predetermined mastery criterion.

The improvement was also supported by the use of scaffolding. During the learning process, the teacher provided demonstrations, technical guidance, corrections, and gradual assistance according to students' difficulties. In guitar learning, such assistance was particularly useful for correcting finger placement, maintaining strumming patterns, and improving chord transitions.

The findings suggest that differentiated group learning can serve as an alternative strategy for addressing heterogeneous abilities in practical music classes. Rather than treating all students with the same instructional treatment, the approach allows teachers to provide learning support based on students' readiness while maintaining collaborative interaction within the classroom.

This study therefore contributes to the implementation of differentiated learning in music education, particularly in practical guitar instruction at the senior high school level. The strategy may also be adapted for other musical instruments by adjusting the learning indicators, grouping criteria, and forms of scaffolding according to the characteristics of each instrument.

CONCLUSION

The study concludes that differentiated group learning can improve students' guitar chord-playing skills in Grade XI at SMA Negeri 3 Semarang. The learning strategy was implemented through ability-based grouping, differentiated scaffolding, and peer teaching during practical



guitar activities.

Students' mean scores increased from 74.5 in the pre-cycle to 87.0 in Cycle I and 96.5 in Cycle II. Classical mastery also increased from 38.9% in the pre-cycle to 52.8% in Cycle I and 83.3% in Cycle II. The achievement of 83.3% classical mastery indicates that the predetermined success criterion of at least 80% was achieved in Cycle II.

These findings indicate that differentiated group learning can be an alternative instructional strategy for music teachers in managing heterogeneous student abilities in practical music learning. Future research may examine the application of differentiated learning to other musical instruments and investigate the specific contribution of scaffolding and peer teaching to different aspects of musical skills.

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