The Use of Powerpoint-Based Interactive Plywood Gamelan in Learning Local Sound Art in Elementary Schools

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Abstract: Students' low interest and learning achievement towards the Local Sound Art is the main problem in this study. As a step to improve learning, classroom action research was conducted. The purpose of this study is to describe students' interest and achievement in Local Sound Art after applying Interactive plywood gamelan based on PowerPoint to elementary school students. The research applied classroom action research methods. The steps taken are by carrying out the learning cycle I to cycle II. Students learn each material interactively in PowerPoint until they arrive at the gamelan playing menu. The menu will be connected to plywood gamelan, which guides students to play the notes in the macapat and dolanan songs independently. The PowerPoint-based plywood gamelan media is proven to increase students' interest and learning achievement. Data from research used observational data and assessment data of song material. The student activity was increased from the early stages. The number of good categories was eight students (40%) and fewer categories 12 students (60%). This research concludes that PowerPoint-based interactive plywood gamelan is effective in learning local sound arts in elementary schools because students' interests and learning outcomes are on average completed.

Keywords: plywood gamelan, powerpoint, local sound arts

INTRODUCTION

The 2013 curriculum or K13 provides a particular domain for developing the area's potential where the education unit is located. This particular area is clearly stated in Permendiknas No. 22 of 2006 concerning content standards that provide space for local content subjects. This local content is characterized and patterned on the potential and characteristics of the area. The potential of one area will certainly not be the same as the potential of other regions. This inequality is a source of cultural wealth that characterizes the area. Some are characterized by tourist areas, cultural areas, industrial areas, agriculture, and others. The form of curriculum packaging that regulates this potential is local content subjects. This local content curriculum is grouped into three: provincial content, district content, and school content.

Central Java applies this local content as an essential lesson. So that starting from the Elementary School (SD) to the High School (SMA) level, they will receive local content lessons. Javanese language lessons are compulsory provincial content lessons for the elementary school level. For district contents, the lessons provided will vary from one district to another. The district content applied in Rembang Regency is the Local Sound Art for the author's area. This Local sound art or SSD raises learning material for macapat and dolanan songs. Tembang in Javanese means singing. The super lofty regional wealth received special attention to maintain and develop its existence. Through this song, it is hoped that the formation of character will be formed because the positive contents in this poem will affect the daily life of students. Besides this, it is hoped that this SSD will give its color as a particular cultural characteristic possessed by Central Java in general.

The empirical reality in SSD learning is experiencing severe obstacles. The results of discussions with several fellow teachers through the KKG forum and similar forums found that teachers still have difficulty teaching this SSD material. The delivery of this material is directly related to songs that students must sing adequately and correctly. The tones in this song are not the same as do, re, mi, but slendro and pelog, which can only be obtained from the sound of the Javanese gamelan. Interest and learning achievement are still not optimal. Students are still low in SSD learning achievement. They seem lazy and have no motivation to learn this material. As a result of the low learning achievement of the SSD, it is inevitable that students are lazy and not enthusiastic in lessons. Alternatively, if you follow the lesson, the results are not maximal and not as desired.

Similar conditions also occur in the school where the author teaches. Some fellow teachers even have difficulty developing these teaching materials. It is pretty difficult if there are no tools to teach macapat or dolanan songs. Gamelan in the writer's school and the surrounding environment is still a rare item.

Considering gamelan is also not cheap, so for a small school and far from the city will be a different obstacle for the school. Based on these conditions, the author makes and develops plywood gamelan based on PowerPoint. It is hoped that this media can increase students' interest and achievement in learning.

This media is made from several simple materials and existing applications by highlighting the functionality and accuracy of use for elementary school students and can facilitate SSD learning. It is hoped that this media can be used in learning so that students' interest and learning achievement in Local sound arts can increase. The PowerPoint-based interactive plywood gamelan media will teach macapat and dolanan songs in Class VI in Local Sound Arts lesson in the first semester of the 2020/2021 academic year. In general, this research was formulated to determine the extent of interest and achievement in learning Local sound arts using interactive gamelan plywood based on PowerPoint. This research aims to describe students' interests and achievements based on PowerPoint in learning Local Sound Arts for elementary school students.

This research is expected to foster motivation and create interesting, challenging, and fun learning, increase students' motivation and learning achievement, cultivate a sense of love for one's own culture and traditional arts, especially the macapat and the dolanan songs, and train students to learn independently, actively, and creatively. It also helps teachers continue to improve the quality of teaching and learning. Teachers become more aware of their strengths and weaknesses when teaching in the classroom. It can be used as a means and facility for teachers to constantly develop themselves and motivate teachers to create interesting and fun learning designs. It is also hoped to contribute to the model of innovation in learning in schools to improve the quality of schools by creating innovative learning. It can be used as a source of inspiration and motivation for school environmental performance as a school reference. It is also expected to create a pleasant learning climate for students and other school members and add learning media reference materials for schools.

The selection of suitable media will be very effective for the success of a lesson because it will attract students' attention and facilitate the teacher's explanation to students. Thus, it is explained by Susilana and Riyana (2009) that the media in learning has a unique and essential function as a means for learning to take place effectively and efficiently. The plywood gamelan media is expected to help facilitate learning to determine the level of specific notes in the macapat song. Besides this, it is hoped that learning will be more fun and challenge students to be more active and creative in receiving lessons. Plywood gamelan comes from the words gamelan and plywood. Two terms are combined into one because it becomes a term for learning media. Subagio (2013) explained that gamelan comes from the word gamel which means to beat or hit the tones of slendro and pelog. So, in general, gamelan can be described as a set of traditional Javanese musical instruments that are used to play slendro and pelog notes that are played by hitting them. This gamelan consists of various musical instruments, including peking, saron, bonang, drums, gongs. Along with its development, gamelan instruments are limited to hitting to play them. Some are plucked, such as zither, and some are blown, like flutes.

Plywood is a means to create learning media that is designed in such a way as to create a form of gamelan made of plywood. The gamelan made here represents another form of gamelan as the type of saron. Plywood is wood made by a manufacturer made by gluing three or odd layers of wood together, with the advantages of being lightweight, easy to use, cheap, recyclable, flexible, and easy to shape. Thus, the plywood gamelan here is an imitation of gamelan whose primary ingredients are plywood. This is solely made to learn media to teach Javanese songs. PowerPoint is a basis for plywood gamelan that has been prepared. PowerPoint functions as software of plywood gamelan media. Winarno and Zaki (2015) explained that PowerPoint is software used to convey information to the audience so that it is easy and fast to understand, using symbols, text, graphics, images, animations in the form of specific points on a slide presentation. So, PowerPoint-based plywood gamelan is a unified learning media whose functionality can be optimized if connected between hardware (plywood gamelan) and software (PowerPoint) on a laptop or mobile phone. The role of this media is as a substitute for gamelan in its actual form.

Interest in learning is a factor from within or internal factor that becomes the driving force for learning towards change for the better and learning success. This interest arises from the conscience of a person influenced by the environment, motivation, hobbies, or direction from others. Although external factors, the most expected also influence on this interest is the interest that arises from oneself. Susanto (2013) explained that learning outcomes would be effectively achieved if students had a strong personal interest without any external coercion. This close relationship between interest and learning achievement is like a law of cause and effect. Although the success factor in learning achievement is not solely an interest in learning, it is inevitable that if interest in learning is low, learning achievement will also be below. However, if interest in learning is high, learning achievement is likely to be high. Thus, Hakim (2015) explained that a person's learning achievement could be used as a benchmark to determine a person's interest. Learning achievement is one indicator of interest in learning. This learning achievement can be known from the expected behavioral changes or specific skills as expected. Measurements are carried out by giving tests and are known by

obtaining numbers compared to before. Thus, according to Darmadi (2017), learning achievement is data obtained from measuring learning outcomes and poured or described in symbols and explanations of particular descriptions within a certain period.

Local Sound Arts or SSD is one of the local content subjects in Rembang Regency, Central Java. This subject learns about several Javanese songs. The Javanese songs in question are the types of macapat and dolanan songs. The compiled competency standards are that students can recognize, know and mention about macapat and dolanan song, recognize, know, and mention about slendro and pelog, and sing the macapat and dolanan songs. Macapat is a short song that has existed since the Majapahit era and developed along with the influence of walisongo in Java. According to Honggowiyono (2015), macapat is a short song, apart from other songs, such as kekawin, ageng, and tengahan.

Macapat is bound by every line, rhyme, and syllable, just like the old literature of pantun. The terms in macapat are called guru lagu (vowel letters at the end of the line), guru wilangan (number of syllables per line), and guru gatra (number of lines in each paragraph). There are eleven types of macapat songs (mijil, maskumambang, asmaradana, dandhanggula, gambuh, pangkur, sinom, megatruh, pocung, kinanti, and durma). Apart from the macapat mentioned above, the SSD content also learns about several types of dolanan songs. This type of tembang is a free prose genre because stipulations do not bind the verse. The essence of this song is to teach about manners, the spirit of studying, social, friendship, love for the environment, and other moral teachings. Some examples of dolanan songs that are taught are Central Java folk songs, such as gundul-gundul pacul, prau layar, suwe ora jamu, gambang suling, gajah-gajah, nyata kowe wasis, and others.

Mustika et al. (2020) stated that the designation of traditional gamelan musical instrument media developed with an android application supports cultural arts learning activities in schools as an alternative medium for introducing traditional musical instruments. Product models are designed according to student learning needs, are easy to use, attractive to students, and have similarities with the original product. According to Zhoga (2019), gamelan has multiple uses to support school learning, including learning mathematics. The existing gamelan and art forms can be used in contextual mathematics learning. Learning by playing gamelan is interesting and can develop the growth of children's social spirit through cooperation (Kurniawati et al., 2021). Hidayati and Nur (2017) and Asmara et al. (2020) stated that learning innovations in schools that use gamelan provide a culture-based learning atmosphere to foster the spirit of student nationalism. The purpose of this study is to find out students' interest and achievement in Local Sound Art (SSD) after learning by applying Interactive plywood gamelan based on PowerPoint to elementary school students. Interest and student learning outcomes become a measure of the effectiveness of the media developed in this study. The gamelan in question is an interactive plywood instrument developed with PowerPoint media.

METHODS

This study used a classroom action research (CAR) method with two cycles referred to by Sugiyono (2016), emphasizing observing interest in teaching and learning achievement. The media used in learning is plywood gamelan based on PowerPoint. Students in groups study this material by playing a PowerPoint that the teacher has prepared. The teacher acts as a facilitator, mentor, and inspiration. Students actively study the material independently and collaboratively with their fellow groups. To learn macapat and dolanan songs, teachers are usually very tired of delivering this material because they only rely on the lecture method. Students only imitate the tone spoken by the teacher. This method is very ineffective because students lack exploration in learning, and the teacher is only a single actor in learning. With this media, the teacher's role is a facilitator and guide in learning. It is expected that students can explore creativity in sound art.

This learning process is observed by observers demonstrated by research colleagues who will observe students' interest in learning when using this media. This media starts with opening a PowerPoint containing SSD materials—starting from knowledge about the tunes of songs to some basic knowledge about macapat. The advantage of this media is that students can learn to demonstrate and sing macapat and dolanan songs independently. The plywood gamelan played by students will lead students to know how precisely the notes will be played. With this independent guidance, teachers can save more energy and act as mentors, facilitators, and inspirations for students. During the learning process, the researcher was assisted by the observer. This observer is from a co-worker, namely a class V teacher. The instrument used to observe the learning process specifically determines student activities during learning, hoping to measure student interest in learning before and after using gamelan plywood media.

There are eight aspects used in this observation instrument. Observation includes active learning, exploration activities, discussion activities, asking questions, answering questions, working together in groups, presentation activities, and making conclusions. At the same time, the assessment categories are Very Good

(VG) for the range 25-32, Good (G) for the range 17-24, Poor (P) for the range 9-16, and Very Poor (VP) less than 8. It considers the criteria for a score of 1 for Very Poor, 2 for Poor, 3 for Good, and 4 for Very Good.

RESULT AND DISCUSSION

Making this learning media is the basic idea when researchers will teach the *macapat* song for the SSD subject. Due to the unfamiliarity of the tones or the pitch, it is not very easy for students to catch the songs taught by the teacher. Less effective and efficient learning, boring for students and tiring for teachers. Even the material for this *macapat* song is also quite difficult for other fellow teachers who teach in different classes. Often this material is not taught. We thought about buying a gamelan as an SSD learning tool, but considering the price, it was pretty expensive, making us think again. The research school, a small school, located on the city's outskirts, is why the development of this gamelan is neglected. Once upon a time, our school would borrow from an art studio, once or twice that is okay, but if it is too often, this is certainly not a comfortable thing for the school. The size of one gamelan unit is also not light, so it will also be difficult for students to carry it here and there.

With the limited facilities and infrastructure, the researchers made a plywood gamelan that can be used as the original gamelan. Researchers have the principle that limitations are not a barrier to progress and development by recording the sound of the gamelan in the art studio, then converting it into a file in PowerPoint and connecting it to the computer keyboard at school. This keyboard will be designed to connect to the plywood, which will later be used like a gamelan. This plywood gamelan is expected to help facilitate students in learning and teachers in delivering SSD material. Besides that, combined with interactive material in PowerPoint, it is also hoped to make students happy and challenged to create their *dolanan* songs. The tones produced by this plywood gamelan will help students follow it with the *macapat* song studied.

Making Gamelan Sound

The type of gamelan whose sound is recorded is the saron type because its voice can represent the gamelan tones or tunings studied in *macapat* and *dolanan* songs. This gamelan recording can be done directly on a cellphone or a laptop. This gamelan recording is then cut into pieces according to the tone level using the audacity-win-2.1.0. After getting the desired tone, it is saved into mp3. Setting external keyboard used the Scratch 1.4 application. After everything is finished, the format is converted into SWF format to be combined into the prepared PowerPoint.

The keyboard key settings used are the letter keys A, D, G, J, L, 4, and 6. The goal is to pause between letters to glue the plywood together so they do not rub against each other. The USB cable from the keyboard is connected to a laptop or a cellphone later when other equipment is complete. In principle, it is the same on Android phones. The difference is that students need to install additional applications, which are PowerPoint and SWF for cellphones.

Making Plywood Gamelan

The first step is to make use of the external computer keyboard keys. This tool is now starting to be abandoned by computer users. Because most users have switched from tube computers to laptops that are more practical and space-efficient, this keyboard is now a used item that sometimes has no value. The use of this keyboard is at the same time utilizing used goods so that they have added value.

Prepare seven pieces of thin plywood that have been cut into rectangular shapes with a size of 7 x 20 cm. This material will later function as a xylophone which will be struck to produce sound. The base mat for the xylophone is also made of plywood shaped into blocks with the size of the keyboard so that it will be a keyboard holder that has been prepared. To glue the xylophone/plywood with the keyboard keys set, we use adhesive glue connected to rubber and small bamboo blades the size of bicycle spokes. Make the main menu in PowerPoint by using shapes to form the desired design. By adding a puppet mountain accent to give an artistic impression. Giving a golden-brown background gives a classic impression.

The next step is to prepare the material content set using hyperlinks on each PowerPoint slide. Merge the cropped material using Microsoft Office 2010 by first changing the format to PNG. In the gamelan main menu, the slide arrangement is a combination of PowerPoint and SWF files explained in the next step. To activate the gamelan sound that has been set, first, click the green button that has been provided.

By clicking the green button, the black button will be active. With the active black color, the plywood gamelan that has been prepared will function to play gamelan sounds. After the sound of the gamelan sounds, it will help sing or harmonize the tones or tunings of the material to be studied. To make gamelan sounds combined into a PowerPoint slide by first making a gamelan sound recording. This sound recording uses a laptop that has audacity-win-2.10 installed. Record the sound of the gamelan by activating the record button on the dashboard. It is located in a circular menu with a red circle in the middle when the cursor hovers, and the word record will appear. The following is the form of the application display when the

recording process takes place. After the recording is complete, the gamelan notes are cut to the desired tone. If the slendro barrel 6,1,2,3,5,6,1, then we will cut it into 7 files. The file is saved in mp3 format. The preparation steps for making gamelan sounds have been completed. The next stage is to program an external keyboard button command that can be sounded with the tone. This application uses scratch 1.4, which is installed first on the laptop.
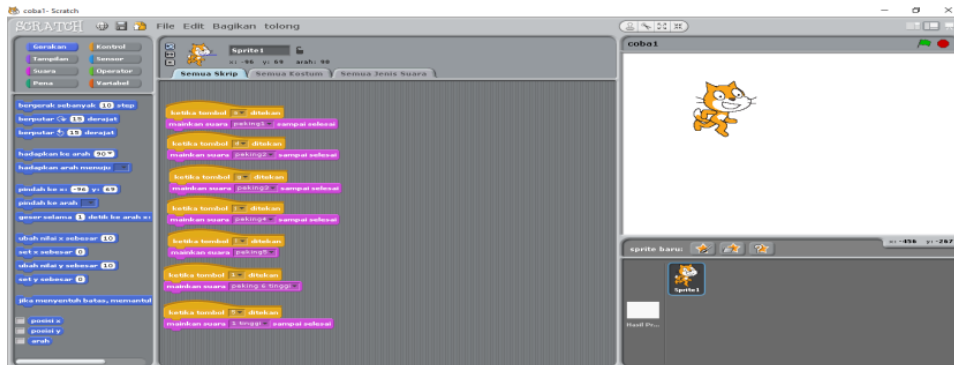

Figure 1. Keyboard Key Programming Process

This programming is done by pairing a wake-up form in the control menu, written *"when the button... is pressed"* when paired with the sound menu that says the button "*play the sound...until it is finished"*. In this way, gamelan sounds can be played with an external keyboard. The last stage is to prepare a plywood gamelan designed with an external keyboard that has been prepared. The tools and materials prepared are thin plywood measuring 0.2 cm, cut into a rectangle with 5 x 13 cm, which functions as gamelan blades. Then make a keyboard mat with a size according to the length and width of the keyboard. It takes plywood with a different thickness from the gamelan bar. This plywood is 1-2 cm thick. This mat will serve as a buffer and support for the external keyboard. The plywood is cut using a saw and glued together with appropriate small nails to form an open beam, the base, and the lid. Another tool that supports the manufacture of this tool is a small bamboo, which will serve as a connector. Liquid glue is used to glue the rubber keyboard connector. This glue can be purchased at a building store with certain brands, such as alteco or G glue. A rubber cutting tool is also needed to adjust the size of the rubber with the keyboard keys later. The design of the tool is described in the following figure.

Complete observation results can be seen in Table 1. The following is presented the results of observations in a table during the learning process with 20 students.

Table 1. Observation Results in Table Form

	Pre-cycle	Cycle I	Cycle II	Percentage	Percentage	Percentage
Very Good	0	0	0	0	0	0
Good	8	13	18	40	65	90
Poor	12	7	2	60	35	10
Very Poor	0	0	0	0	0	0

In detail, the acquisition of scores as a measuring tool for learning achievement can be seen in Table 2 in the appendix. The following is a general data table summarizing the raw data from the assessment results.

Table 2. Assessment results

	Pre-cycle	Cycle I	Cycle II
Highest score	77	83	83
Lowest score	50	60	73
Average score	64	73	80
Completed	1	9	18
Incomplete	19	11	2
Percentage of completeness	5	45	90

From the observations, it can be explained that students' interest in learning SSD has increased. Initially, the B grade was only obtained by eight students, then in cycle I, it increased to 13 students, and in cycle II, it increased to 18 students from 20 students. In the form of a percentage, it is known that the

student's B grade or student activity is 40% to 65% and 90%. There was a significant increase in students' interest in learning SSD.
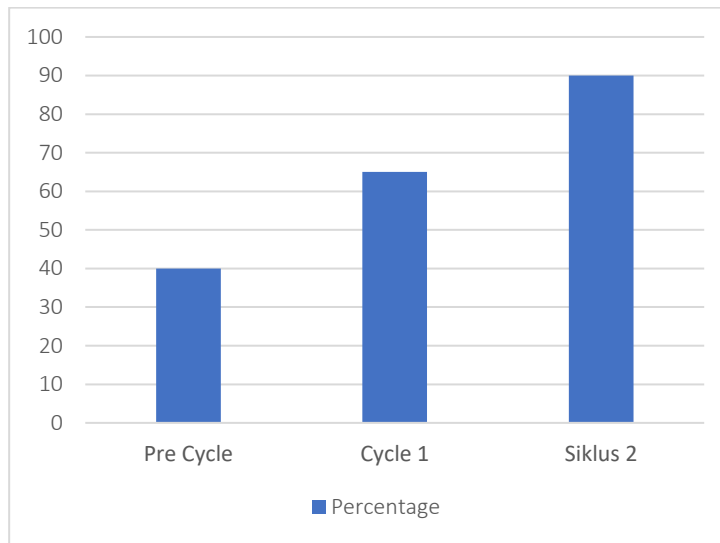

Figure 2. Increase in Student Interest in Learning

This increase in student interest in learning occurred after using plywood gamelan media SSD learning. At first, learning only relied on lectures. This plywood gamelan can make students interested and explore playing tones and developing *macapat* and *dolanan* songs. In addition to the observation data, the results of student assessments are presented below. It can be seen that during the two learning cycles, students experienced an increase in learning completeness. Initially, only one student or 5% was completed. It increased to 9 students or 45% in cycle II to 18 students or 90%.
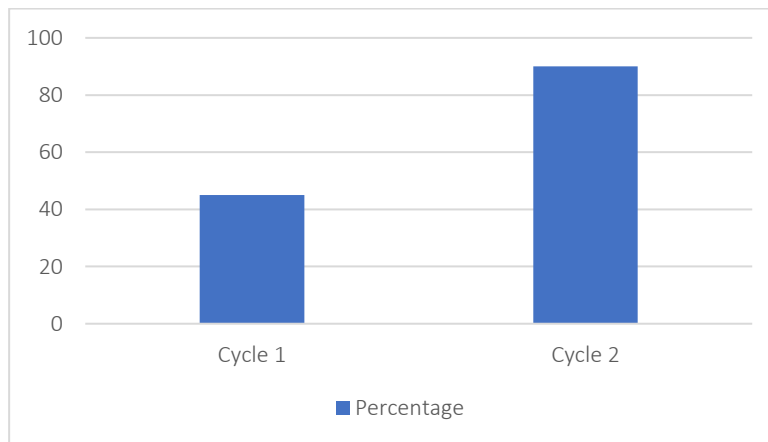

Figure 3. Increase in Students' Achievement

A test instrument was used to measure students' achievement. This test consists of a practical test and a theory test. The practice test determines the individual's ability to sing *macapat* and *dolanan* songs. Meanwhile, the theory test determines the students' cognitive skills towards the SSD learning material. The KKM that must be met to be included in the complete category is 75. The final score is obtained from the average of the three aspects: the accuracy of the tone of the *macapat* and *dolanan* songs, the accuracy of the lyrics of the *macapat* and *dolanan* songs, and the acquisition of theoretical values from the completion of written questions. Innovations made in gamelan art can improve students' understanding so that learning outcomes can be improved (Hananto, 2020).

The results of this assessment were obtained from the collection of several test results carried out by the teacher. Instruments to determine the ability of *macapat* singing are grouped according to the accuracy of the tone and the lyrics. Likewise, to measure the ability of macapat singing, it is also measured on the ability of students to demonstrate the tone correctly and the accuracy of the poem. From these scores, the average accuracy of the tone and the average accuracy of the poems were obtained. Later, it was written into the column of the assessment sheet. The written test was obtained from the acquisition of scores from 10

questions. The number of questions has been adjusted to the materials being taught. Students work using a question paper that the teacher has prepared to get this score. The assessment score is the correct number multiplied by 10. If all are correct, the maximum score is 100. Students have a higher chance of mastering concepts by learning that uses art instruments because it is more fun (Sidik et al., 2019; Mariyana et al., 2019).

Learning achievement, which was initially low, gradually increased after applying plywood gamelan media. With a passion for learning, the ability to sing macapat and dolanan is getting better. There are even some students who stand out playing gamelan tunes. With the direction and guidance of the teacher, students can create a song. The most prominent student plays the notes collaborating with other students. This communication and collaboration formula can produce student work in a dolanan song. This ability is honed by plywood gamelan media. Of course, this ability is like enrichment because the main competencies have been fulfilled. Cooperation is built between students due to creative activities from the application of learning using gamelan (Supriyadnyana et al., 2020).

CONCLUSION

Using PowerPoint-based plywood gamelan as a learning medium for Local Sound Art increases learning interest for sixth-grade students in SD Negeri Temperak. This is indicated by the increase in student activity from the early stages. There are eight students (40%) in the good score category, 12 students (60%) in the poor category, 13 students (65%) in the good score category, and seven students (35%) in the poor category. It increased again in cycle II. There are 18 students (90%) in the good category and two (10%) in the poor category. Using plywood gamelan based on PowerPoint as a learning medium for Local Sound Art can improve student achievement. The use of interactive plywood gamelan based on PowerPoint is effective in learning local sound arts in elementary schools because students' interests and learning outcomes are generally completed.

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