

DEVELOPMENT OF P5-BASED MODULE AND SUPPLEMENT ON ETHNOSCIENCE IN TRADITIONAL MUSICAL INSTRUMENT : THE GAMBUS OF JAMBI

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ABSTRACT

This study aims to develop a module and supplement for the Pancasila Student Profile Strengthening Project (P5) based on ethnoscience on the traditional musical instrument Gambus Jambi. This study is a Research and Development (R&D) study with a 4-D development model (Define, Design, Develop, Disseminate). This study produces a P5 module and supplement based on ethnoscience on the traditional musical instrument gambus Jambi in hardcopy and softcopy. The types of data, data sources, and data collection techniques in this study are qualitative data resulting from interviews and quantitative data resulting from expert validation questionnaires, teacher-friendly anchors and student perceptions. This study was validated by material expert and media expert validators in two stages. The types of data, data sources, and data collection techniques in this study are qualitative data resulting from interviews and quantitative data resulting from expert validation questionnaires, teacher perception anchors and participant perceptions. Field trials conducted on teachers and students of SMP Negeri 22 Jambi City showed "very feasible" results for the module with an average of 96.43% and "feasible" for the supplement with an average of 77.08%. The results of the study indicate that the development of this module and supplement can help strengthen understanding students towards science and preserving local wisdom through P5 activities based on ethnoscience.

Keywords : *Module, Supplement, Ethnoscience, Gambus, P5*

INTRODUCTION

Ethnoscience is an integration between science and culture that includes community knowledge based on hereditary beliefs and mythical elements (Novitasari et al., 2017). According to ethnoscience studies the knowledge system formed from culture and events related to science in society. In learning, ethnoscience directs students to research local culture through observation, interviews, or literature studies (Novitasari et al., 2017). According to Fahrudin & Maryam (2022), this approach helps understand the material and strengthens students' cultural identity. One of the local cultures that can be applied in ethnoscience-based learning is the traditional gambus musical instrument.

Gambus is a plucked musical instrument from Yemen that has experienced acculturation with Indonesian culture since the 19th century, one of which is in the Jambi region (Gani & Sriwulan, 2019). Originally as a means of da'wah, gambus has now developed into a traditional entertainment that is inseparable from Indonesian culture. This musical instrument generally accompanies songs with Islamic nuances and is full of the meaning of advice (Simanungkalit & Zahara, 2022). Learning traditional musical instruments such as gambus is a form of ethnoscience-based learning, which can be applied in the Pancasila Student Profile Strengthening Project (P5) in a relevant and contextual manner. Gambus was chosen as a local wisdom in P5, because it has high cultural value and can be linked to the concept of science in learning. In science learning, gambus can be associated with science learning such as sound frequency, vibration, and resonance. By studying gambus, students not only learn about cultural heritage, but also understand the principles of science applied in everyday life. This makes ethnoscience-based P5 activities interesting and meaningful.

According to Utami et al. (2024), P5 is a project-based program to achieve competencies according to the character of the Pancasila Student Profile. P5 is one of the independent curriculum programs that is implemented in two stages, namely contextual and conceptual (Sulistiyaningrum & Fathurrahman, 2023). At the contextual stage, learners directly experience concepts in people's lives, while the conceptual stage presents examples of problems and cultures that are closer to their knowledge (Brinus et al., 2019).

P5 is an education system in Indonesia that aims to create certain profiles or competencies in students. As a basic foundation, students are expected to have an attitude that is in accordance with the values of Pancasila, these attitudes include: faith, global diversity, mutual cooperation, independence, critical reasoning, and creativity (Jayanti et al., 2022). The P5 activity has several themes, namely build your soul and body, engineering and technology, the voice of democracy, diversity of your country, local wisdom and sustainable lifestyle. The implementation of P5 is divided into six phases that are adjusted to the level of education, starting from elementary to high school (Wahyuni, 2022). Each phase is managed by a coordinator and a team of facilitators who compile modules according to the project implementation guidelines (Saputra et al., 2022). The implementation of P5 activities can be carried out on any day, depending on the plan and time allocation that has been determined by the school.

Based on the results of interviews with teachers at SMP Negeri 22 Jambi City, the first was obtained that the school had started implementing P5 activities in the odd semester of the 2024/2025 school year. Although this activity has been carried out regularly, SMP Negeri 22 Jambi City does not have special guidelines for P5 activities, such as modules. Rather, it uses general guidelines from the government and only finds references to online modules from other schools. The teachers also acknowledged the difficulty in finding a P5 program that was able to attract

students' interest, teachers assessed that students were more interested in practice-based activities that had regional cultural elements. However, teachers do not yet have appropriate project modules to apply in the context of the local culture.

The results of the second interview were obtained that P5 activities at SMP Negeri 22 Jambi City generally only related to the subjects of Arts, Entrepreneurship, Indonesian, and PPKn. P5 activities have not been integrated with science/science subjects. Teachers who teach science subjects admitted that they experienced obstacles in connecting P5 activities with science learning, for example in the form of science/ethnoscience-based. In addition, the researcher also found that students felt that there were many challenges for the P5 activity on the theme of local wisdom that had been carried out previously, this was obtained based on the results of a questionnaire of 70.53%. To overcome this problem, the researcher will conduct research on the development of an ethnoscience-based P5 module that integrates science with local wisdom, so that learning becomes more contextual and meaningful for students.

The implementation of P5 activities requires project modules as a guide for teachers. The P5 module is a document that contains the objectives, steps, learning media, and assessments needed to implement P5 (Suma et al., 2022). To make it more optimal, this module is equipped with a supplement in the form of an ethnoscience-based reference book that supports the P5 activity process. To overcome these problems, the researcher integrates ethnoscience principles with P5 activities, focusing on local wisdom related to science subjects and supplements are designed as supporting materials to introduce local wisdom related to science subjects.

METHOD

The research conducted is research and development (R&D). The development model used in this study is the 4D development model. This research will focus on developing a P5 module and supplement. The goal of this development is to design and develop the module and supplement products by following a systematic model and procedure. The development process requires several rounds of testing by experts, individual research subjects, limited-scale tests, as well as wide-scale (field) testing, followed by revisions for product refinement.

The 4D model consists of Define, Design, Develop, and Disseminate (Thiagarajan, 1974). The goal of this research is to develop and produce a valid P5 module and supplement based on ethnoscience, focusing on the traditional musical instrument gambus, that can be used by teachers and students. The 4D development model used can be seen in **Figure 1**.

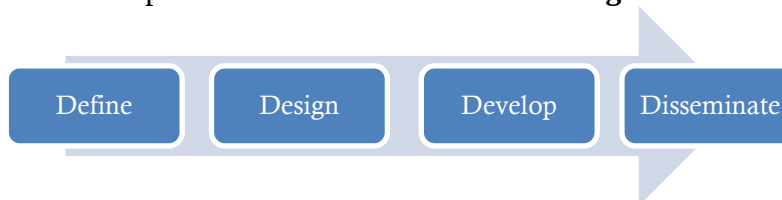


Figure 1. 4-D Development Model
(Sumber: Thiagarajan, 1974)

The research sample used was students in grade VIII of SMP Negeri 22 Jambi City, who had carried out P5 activities. However, the samples used for the development trials were carried out by dispersion to small groups. The types of data used in this study are qualitative and quantitative data. Qualitative data was obtained through interviews. Meanwhile, quantitative data

was obtained from the assessment of validator experts, teacher perception questionnaires and students' perceptions of the P5 modules and supplements that were prepared. Then, it was obtained from the results of questionnaires of trial subjects, validators of media and material experts. Meanwhile, the source of data for this research is an interview sheet for teachers as an initial analysis, an interview sheet with a gambus traditional musical instrument expert, a validation questionnaire, and a questionnaire on the perception of teachers and students. The data obtained in this study consisted of quantitative and qualitative data. To analyze the data, the first step in qualitative analysis is to transcribe the interview data into text to facilitate management and analysis, as well as identify needs in product development. Quantitative data were analyzed using descriptive analysis, with the determination of the feasibility of the product developed using the category criteria of interpretation of the percentage of perception questionnaires can be seen in table 1 below.

Table 1. Criteria for Interpretation Category Percentage of Perception Questionnaire

Evaluation	Interpretation criteria
$81 \leq P \leq 100\%$	Highly Valid
$61 \leq P \leq 80\%$	Valid
$41 \leq P \leq 60\%$	Enough
$21 \leq P \leq 40\%$	Not Feasible
$0 \leq P \leq 20\%$	Very Not Feasible

(Sumber: Novianti & Susilowibowo, 2015)

RESULTS AND DISCUSSIONS

The results of this study are in the form of ethnoscience-based P5 modules and supplements on traditional gambus jambi musical instruments in junior high school. The purpose of this research and development is to develop ethnoscience-based P5 modules and supplements on traditional Jambi gambus musical instruments about the science that exists in traditional gambus musical instruments. In addition, this study was also conducted to find out the perception of teachers and students towards the P5 modules and supplements that have been developed.

a. Define

This stage of analysis is carried out to identify problems in the field. Five analyses were carried out at this stage, namely: initial analysis, student analysis, task analysis, concept analysis, and learning objective analysis. Preliminary analysis is an analysis used to identify the underlying problems that exist in the field. Analysis of the needs of students and P5 coordinators/teachers is part of the task carried out. The results of interviews with P5 teachers/coordinators at SMPN 22 Jambi City showed that the school did not have a special guide or module at the school but still used online guides or modules, and the teachers also admitted the difficulty in finding a P5 program that was able to attract students' interest, the teacher assessed that students were more interested in practice-based activities that had elements of regional culture. However, teachers do not yet have appropriate project modules to apply in the context of the local culture.

The analysis of students was carried out after the initial analysis. This is done to find out the characteristics and problems or obstacles faced by students at school during the implementation of P5. With interviews with teachers to identify the characteristics of students and analyze the needs to find out problems or obstacles during students carrying out P5 activities at school.

Furthermore, task analysis is carried out to evaluate the lesson as a whole. Based on interviews with experts in traditional musical instruments gambus Jambi was found information

on the history of traditional musical instruments of gambus music, including components of gambus musical instruments, and how to play gambus musical instruments. Of these musical instruments correlated with science, namely: sound waves, sound frequency, speed of sound propagation, wood used by gambus musical instruments, and strings used by traditional gambus musical instruments are included in the category of science of traditional gambus musical instruments.

Once the concept analysis is complete, the concept analysis is the next step to take. Concept analysis is used to formulate science concepts that must be thoroughly mastered by students. To reconstruct local wisdom about the traditional musical instrument of the Jambi gambus into scientific or scientific knowledge. Interviews with community stores of experts in the field of gambus musical instruments were collected. Finally, the analysis of learning objectives resulting from task analysis and concept analysis is made through this analysis.

b. Design

To design the initial form of the P5 modules and supplements that have been developed, the design stage involves the preparation of benchmark reference tests, media selection, format selection, and initial design of the P5 modules and supplements. Media must be chosen to meet the needs of students. The results of the initial analysis and the analysis of the students determine the right medium to solve the existing problem. The P5 modules and supplements are learning resources and teaching tools in both form and PDF that can be used. The purpose of this P5 module and supplement is to increase the reader's knowledge. Especially teachers and students. In addition, not all local wisdom has to do with science or science. Therefore, ethnosience-based P5 modules and supplements are needed, especially about the traditional Jambi gambus musical instrument.

The next step is to choose a format. The P5 modules and supplements were created using Microsoft Office Word 2010 and Canva. The paper used for the module is A4 with a margin of 2.54 cm which is presented in the form of a landscape, while on the other side the paper used for the supplement is A4 with a margin of 2.54 cm which is presented in the form of a portrait. Canva is used as a medium to edit and design module covers and supplements to make them look more attractive and fit your visual needs.

Based on the previous analysis, it was used to design the initial design. At this point, the researcher has completed the creation of the P5 module and supplement which consists of three parts: beginning, content, and end. In the P5 module, the initial part consists of the cover, introduction, project objectives, activity stages, sub-elements, development of sub-elements, and how to use the project device. The content section contains about the activities of project activities, namely: the introduction stage, the contextual stage, the action stage. The final section contains the report card that will be assessed by the teacher during the P5 activity.

While the initial P5 supplement contains the cover, instructions for the use of the project, introduction, table of contents, table list, and list of images. The content section contains material on the history of Jambi traditional musical instruments, components of Jambi traditional musical instruments, and sciences on Jambi traditional musical instruments. the end of the bibliography and student activity sheet. The following are the results of ethnosience-based P5 modules and supplements on traditional Jambi gambus musical instruments that have been validated can be seen in figure 2 and figure 3 below:

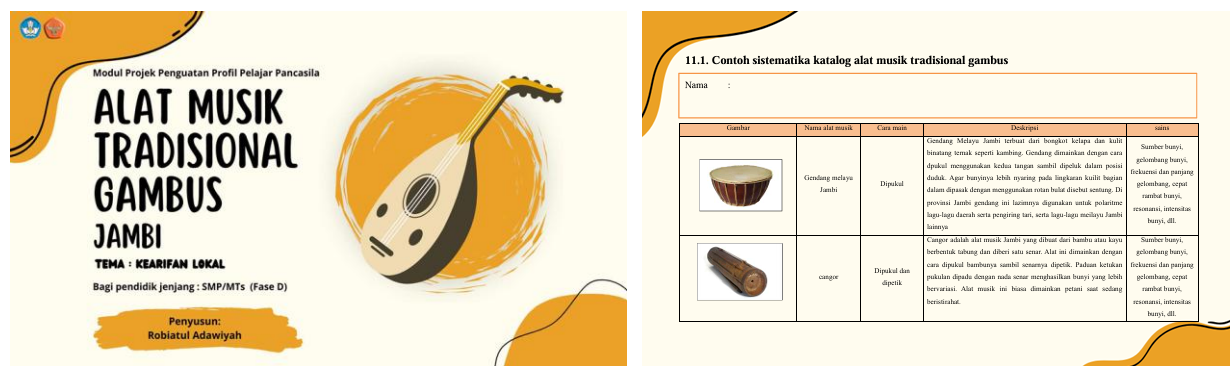


Figure 2. Module P5



Figure 3. P5 Supplement

c. Develop

The development process was carried out to produce ethnoscience-based P5 modules and supplements on the traditional Jambi gambus musical instrument. The purpose of the validation is to determine the feasibility level of the P5 modules and supplements before they are tested in the field. Validation is carried out by a material expert validator and a media expert validator, and the process is carried out twice. The meter expert validator assesses the learning design and content/material components for the P5 module, while for the P5 supplement, the material expert assesses the feasibility of the content/material and the feasibility of presenting the content/material for the P5 supplement. Media validators assess ease of use, communicative, visual quality. The following are the results of the expert validation assessment carried out by two validators, namely validators, material experts and media experts using validation instruments, which were carried out three times. The results of the assessment can be seen in the following table 2.

Table 2. Validation of Module Materials and P5 supplements

Validation Result	Percentage	Categori
Media	94.45 %	Highly Valid
Material	88.02 %	Highly Valid

Conducting research on the development of P5 e-modules based on local wisdom phase E. This research discusses P5 activities with the theme of local wisdom in the Aceh Province area. In order to preserve the cultural potential of the province of Aceh, efforts must be made to instill local cultural values in students. If learning that is oriented to local wisdom is not carried out from an early age, then in the future globalization and very rapid technological developments can change local wisdom in society. validation on modules and supplements showed a percentage of 88.02% with a very feasible category. Furthermore, the results of media validation on the P5 module and supplement showed a percentage of 94.45% with a very feasible category. After that, response questionnaire data was taken as one of the field development product trials, which was carried out in class VIII B and science teachers, as well as the P5 Coordinator of SMPN 22 Jambi City, there were 26 students who took part in the ethnosience-based P5 module and supplement product trials on the traditional Jambi gambus musical instrument, for the P5 module was tested by P5 teachers and coordinators with an average of 96.43 with the category "Very feasible". As for the P5 supplement, it was tested by students with an average of 77.08 with the category "Feasible." The following are the results of the assessment at the test stage for teachers and class students which were carried out by distributing teacher perception questionnaires, namely: science teachers and P5 coordinating teachers, as well as student perception questionnaires to grade VIII students at SMPN 22 Jambi City can be seen in **table 3** below:

Table 3. Assessment Of Teacher And Student Perception Questionnaire On P5 Modules And Supplements

Perception Result	Percentage	Category
Teacher	96.43 %	Highly Valid
Student	77.08 %	Highly Valid

This research has similarities with research conducted by This research has similarities with research conducted by Tyaningsih et al. (2024), conducted research on the development of e-modules based on the Pancasila Student Profile Strengthening Project (P5) as a differentiated learning resource for junior high school mathematics. This research discusses the development of e-modules based on the P5 project by offering innovative solutions to integrate Pancasila values in Mathematics learning while applying differentiated learning principles. These e-modules are designed to provide a more engaging and meaningful learning experience through projects that are relevant to learners' real lives. Thus, this e-module not only serves as an effective learning resource but also as a tool to strengthen the character of students.

In addition, this research also has similarities with research conducted by Marsithah & Jannah. (2024), conducting research on the development of P5 e-modules based on local wisdom phase E. This research discusses P5 activities with the theme of local wisdom in the Aceh Province area. In order to preserve the cultural potential of the province of Aceh, efforts must be made to instill local cultural values in students. If learning that is oriented to local wisdom is not carried out from an early age, then in the future globalization and very rapid technological developments can change local wisdom in society.

This research is expected to produce a learning media that not only functions as a means to help students understand the subject matter in a more real, interesting, and meaningful way, but is also able to shape the character of students through the application of Pancasila values and grow their concern for the preservation of regional culture and the surrounding environment, so that the learning carried out does not only prioritize the understanding of the material, but also on good attitudes and behaviors in daily life

CONCLUSIONS

The development model used in this development is a 4D developer model (definition, design, development, and dissemination) used to develop ethnoscience-based P5 modules and supplements on the traditional Jambi gambus musical instrument. However, the disseminate stage was not carried out. Ethnoscience-based P5 module and supplement products on the traditional musical instrument of Jambi gambus were made using Microsoft Word 2010 and Canva. This P5 module and supplement was created by integrating local Jambi wisdom into science-based P5 activities. These modules and supplements have pictures and examples related to the activities to be carried out, so that teachers and students can easily use and can easily understand the science material in the P5 modules and supplements.

The results of teacher and student observations of ethnoscience-based P5 modules and supplements on the traditional Jambi gambus musical instrument were given to 2 teachers and 26 students, for the P5 module was given to teachers with an average of 96.43% with the category "Very feasible". As for the P5 supplement, it was given to students with an average of 77.08 with the category "Feasible."

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