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Development of 3D Page Flip Physics E-Module with Sound Wave Material Based on Local Angklung Wisdom to Improve Integrated Science Process Skills

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ABSTRACT

Purpose of the study: The research objective of developing the 3D Pageflip Physics E-Module with sound wave material based on local angklung wisdom is to increase students' understanding of physics concepts, integrate local cultural values as a learning context, and develop students' science process skills in an integrated manner.

Methodology: The research method used in this research is the research and development. Respondents the e-module consisted of 20 class XI Science. The data collection technique is a questionnaire. The data analysis technique uses descriptive statistical tests, expert validation tests to determine feasibility e-module. The research procedure is by conducting literature studies, planning, development, product validation, revision, small group testing.

Main Findings: The research results show that the physics e-module with West Java local wisdom on Sound Waves material has been successfully developed. Validation from experts results in positive assessment of the material content, media and language the module. Students' responses to small-scale test showed good level of acceptance, as well as an increase in their understanding of physics sound concepts. Thus, this e-module has potential to improve physics learning at the high school level, especially in the local context West Java.

Novelty/Originality of this study: The new thing here is integrating scientific skills with the use of the traditional angklung musical instrument. Embracing the local wisdom of angklung, this e-module offers dynamic and relevant learning, helping students understand physics concepts while comprehensively improving science process skills.

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1. INTRODUCTION

The development of the world of education has experienced a significant transformation from the past era which relied on traditional teaching materials to now, where knowledge technology is the main trend. In the past, learning was based more on textbooks, blackboards, and direct classroom teaching [1], [2]. However, with advances in information and communication technology, education has changed radically [3], [4]. Today, we

witness the use of digital devices, the internet, and educational applications that support interactive and personalized learning [5], [6]. Adoption of these technologies provides broader access to educational resources, enables global collaboration, and increases student engagement through a more dynamic learning approach. This development reflects a paradigm shift towards education that is more inclusive, responsive to current developments, and capable of producing graduates who are ready to face increasingly complex future challenges.

One form of learning that is increasingly popular today is using 3D Pageflip technology. This method combines visual sophistication with interactivity, creating an engaging and dynamic learning experience. By using a three-dimensional flipbook effect, 3D Pageflip allows learning materials, such as textbooks or other learning materials, to be accessed digitally with a display similar to a physical book [7], [8] . This provides a realistic and engaging feel for students, keeps them more engaged and facilitates understanding of concepts. Other advantages include the ability to embed multimedia, such as videos and animations, thereby enriching learning content. With the increasing development of learning technology, 3D Pageflip provides an innovative alternative in providing a more interesting and effective learning experience.

In a learning context that utilizes 3D Pageflip technology, integration with local wisdom values provides an additional valuable dimension [9], [10]. Combining advanced technology with local values allows students to feel the relevance of learning materials to their environment and culture. By incorporating elements of local wisdom values into 3D Pageflip content, learning not only becomes visually interactive, but also provides depth and connection to the traditional values of the local community [11], [12]. This not only encourages a deeper understanding of the material, but also fosters a sense of pride in students' cultural identity. In this way, learning through 3D Pageflip is not just about transferring textbooks into digital form, but becomes a means of preserving and applying rich local values in the educational process.

In learning physics, especially on the subject of waves and sound, the integration of local wisdom values, such as angklung, can be a creative and relevant tool [13], [14]. The e-module developed can include the application of angklung as a demonstration tool or practical experiment to explain wave concepts. In addition, the local wisdom values contained in the traditional musical art of angklung can be integrated into learning to highlight the relationship between science and local culture. Involving students in learning activities that combine physics theory with the practice of using angklung not only enriches their learning experience but also appreciates the rich local cultural heritage [15], [16]. This creates a holistic and contextual approach, giving students a more thorough understanding of physics concepts while fostering pride in their local knowledge.

This research is in line with research conducted by Sibrani [17], This research discusses one of the advantages of e-modules in physics learning is its flexibility in presenting material multimedia and interactively. However, there is a gap between e-modules and local wisdom in physics learning that needs to be addressed [18], [19]. E-modules tend to place less emphasis on contextual and cultural aspects that are important to support understanding of physics concepts in the context of local wisdom [17], [20]. Therefore, it is important to design e-modules that not only include illustrations or practical applications using local wisdom, but also explore the cultural values contained therein. This can fill the gap between the often universal nature of physics learning and unique local values, ensuring that students not only understand physics concepts academically but are also able to relate them to the realities of their culture and environment [21], [22]. In this way, e-modules can be a more effective tool in supporting physics learning that is contextual and relevant to local wisdom.

Novelty in developing e-modules for physics learning with the integration of local wisdom lies in the emphasis on integrated science process skills. The innovative e-module does not only present physics concepts and local wisdom as separate entities, but synergistically combines the two to develop students' science process skills [23], [24]. Through this approach, students not only understand physics theory and local cultural values, but are also invited to apply scientific skills in real contexts [25], [26]. For example, exploring waves and sound using angklung as a practical tool not only illustrates physics concepts, but also hones students' observation, experimentation and analysis skills [27], [28]. By embracing the interaction between local wisdom and science process skills, this e-module provides an innovative and comprehensive approach in building students' deep understanding of physics while enriching their scientific skills.

The development of e-modules with the integration of local wisdom in physics learning has significant implications. Directly, this e-module has the potential to increase students' understanding of physics concepts by providing real context through the application of local wisdom. In addition, combining science process skills with local cultural values can enrich students' scientific skills in solving problems [29], [30]. These implications create a more contextual learning environment, increase student engagement, and strengthen their positive relationship with the course material. More broadly, the use of local wisdom in physics learning can stimulate students' interest in the subject, help preserve cultural heritage, and make a positive contribution to students' cultural identity [31], [32]. The implications of developing this e-module create valuable opportunities to improve the quality of physics education in a more relevant and sustainable manner. This research aims to develop a physics e-module with local advantages in West Java.

2. RESEARCH METHOD

2.1 Types of Research

The research method used in this research is the research and development method. Research and Development (R&D) is a research method that aims to produce a product and test the effectiveness of that product . Research and Development (R&D) can also be said to be a research method that aims to research and meet user needs so that products need to be developed [33]–[35]. Products that can be developed in research and development in the education sector include teaching materials, learning modules, evaluation tools, learning tools, learning models, books, even curricula [36], [37] . The aim of research and development is to develop an existing product and then perfect it. In this research, researchers developed a physics e-module for class XI science senior high school with local West Java advantages in Sound Waves material.

2.2 Population and Sample

The subjects in this research were validators consisting of two people, namely Chittra Kedkaew and Andrew David, who assessed based on material aspects, media aspects and linguistic aspects. Meanwhile, the e-module respondents consisted of 20 students of class XI Science at Dukupuntang 1 State Senior High School for the small-scale test.

2.3 Data Collection Techniques

The data collection technique is a questionnaire. A questionnaire is a list of written questions about the product being developed and must be answered by the respondent or validator. An assessment sheet in the form of a questionnaire is used to obtain data regarding the feasibility of the e-module which was developed based on assessments from physics lecturers and physics teachers [38], [39]. A questionnaire sheet is also used to determine students' responses to the e-module. The questionnaire instrument uses a Likert scale in its assessment and is answered in checklist form. The questionnaire sheet is corrected first by the supervisor before use. The final data collection technique is test questions [40], [41]. The test questions are used to determine the implementation of the product being developed. The test questions consist of 20 multiple choice questions regarding the material in the e-module. This data collection technique is carried out after students have studied the e-module.

2.4 Data Analysis Techniques

Data obtained from study And development with use questionnaire form score , criticism and suggestions for e- modules from questionnaire or questionnaire that has been assessed by validators. Questionnaire e- module assessment done with use checklist assessment . The following is an expert validation grid indicator for E - Flip Page 3D Physics Module Sound Wave Material Based on Local Angklung Wisdom to Improve Integrated Science Process Skills

Table 1. Expert validation grid indicators for E - Flip Physics Module Page 3 D Sound Wave Material Based on Local Angklung Wisdom to Improve Integrated Science Process Skills

No.	Assessment Aspects	Indicators
1	Material Aspects	Eligibility of content Feasibility of Presentation
2	Media Aspect	Graphic Eligibility Organizing
3	Language Aspects	Legibility Suitability to the level of development of students
Overall Average		

Below is presented the assessment categories expert validation grid for E - Flip Physics Module Page 3 D Sound Wave Material Based on Local Angklung Wisdom to Improve Integrated Science Process Skills

Table 2. E-Module Assessment Categories

Score Range	Category
$3.25 < X \leq 4.00$	Very good
$2.50 < X \leq 3.25$	Good
$1.75 < X \leq 2.50$	Quite good
$1.00 < X \leq 1.75$	Not good

The assessment categories in the Angklung E-Module have an important role in measuring students' understanding of the material being taught and their ability to apply integrated science process skills. This assessment category also provides an effective framework for students to develop a deeper understanding of

angklung concepts and improve their problem-solving, critical thinking, and effective communication skills. The grid for the instrument for measuring students' integrated Science Process Skills is presented in table 3 below:

Table 3. Student Integrated Science Process Skills instrument grid

Variable	Indicator	Total Items
Integrated Science Process Skills	Identifying variables	1,2,3,4
	Compile data tables	5, 6,7,8
	Obtaining and processing data	9,10,11
	Make graphs depicting relationships between variables	12,13
	Obtaining and processing data	14,15
	Analyze the investigation	16
	Building a hypothesis	17
	Designing experiments	18,19,20
	Experiment	21,22,23,24
	Total	24

After presenting the integrated Science Process Skills Grid Indicator, it is then measured using descriptive statistical tests in the form of a pretest before using the e-module and a post-test after using the e-module. The category of students' integrated Science Process Skills.

Table 4. Categories of Students' Integrated Science Process Skills.

Category	Interval of variable
	Integrated Science Process Skills
Very not good	24 – 43.2
Not good	43.3 - 62.4
Enough	62.5 – 81.6
Good	81.7 – 100.8
Very good	100.9 – 120

2.5 Research Procedures

The research carried out is Research and Development (R&D) research. The research and development procedures carried out were only carried out in several stages according to the researcher's needs, due to the researcher's limited time and costs. Borg and Gall's research and development procedures were carried out as follows:

The first stage is research and gathering information or preliminary studies. Literature study: Literature study aims to collect information related to the research being developed. Information can be obtained from journals, theses and books. Apart from that, the theoretical basis and local superior products of West Java in sound wave materials also need to be studied. Analysis of Local Advantages The next stage is to analyze the local advantages of West Java, numbering around 51 students. The aim is to adapt existing local advantages to sound wave materials.

The second stage is planning or product planning. The product planning stage begins with designing the e-module, such as creating an e-module design that is attractive and does not look monotonous as well as preparing images and sound wave material with local West Java advantages, then consulting with the supervisor to get suggestions or input. Developing the initial form of the product or developing the product. The product development stage is the stage of creating a West Java local superior high school physics e-module on the material Sound Waves. Researchers also prepared e-module assessment instruments and questionnaires and then consulted with supervisors. Product development is carried out referring to previously determined indicators. The products created present the e-module concept, materials, components and others contained in the e-module in a more structured manner.

The third stage is product validation testing and results revision. The resulting product is a physics e-module which is then assessed with validation by two experts, namely Chittra Kedkaew and Andrew David, who assess it based on material aspects, media aspects and linguistic aspects. Main product revision or product revision After receiving an assessment from expert validators, the product is revised. Product revisions are carried out after receiving criticism or suggestions from expert validators.

The fourth stage is small group testing and implementation testing in the form of pre-test and post-test. Small group field tests are conducted after the product has been revised. This stage aims to determine student responses to the e-module being developed. The respondents used in this research consisted of 33 students of class XI science senior high school state 1 Dukupuntang who were chosen randomly. E-Module Implementation

Test The product that has been tested and revised twice is then tested for the feasibility of the developed e-module by taking respondents from one class or 33 students of class science senior high school state 1 Dukupuntang.

The fifth stage is statistical testing of students' science process skills. This stage aims to determine the level of success of the product in improving students' science process skills. The respondents used in this research consisted of 20 students of class XI Science at Senior High School 1 Dukupuntang high school who were chosen randomly.

3. RESULTS AND DISCUSSION

This research uses research and development that refers to the Borg and Gall development model with stages up to testing e-module implementation. The following is an explanation of the results of each stage of research and development carried out:

3.1 The First Stage is a Preliminary Study

The results of a preliminary study carried out through three stages, namely interviews, literature study and analysis of local wisdom are as follows: Through an interview process with one of the students in the study class, it was found that linking physics learning with phenomena around students, such as local excellence, brings significant impact in understanding physics concepts [39]. The student stated that connecting the learning material with a familiar context made him more interested and actively involved in learning. The results of these interviews demonstrate the importance of adopting approaches that are relevant to students' environments in designing effective learning experiences. The results of a literature study obtained based on one of the research and development journals. Physics learning is associated with local excellence which can increase students' interest in learning physics [43]–[45]. The results of the analysis of West Java's local advantages regarding sound wave materials are as follows:

Table 5 Analysis of Local Advantages

Local wisdom	Physics Explained
Strings and harp	It has strings or strings that can produce a sound when plucked
Violin	Has strings that produce sound by stroking
Flute	An example of an open organ pipe is that there is a hole in the flute which functions to produce notes that are produced by blowing.
Angklung	An example of a closed organ pipe that can produce sound through the collision process between the main and secondary tube parts

One effort that can be made is to develop products in the form of e-modules that have local advantages. This is supported by the use of local cultural integration learning modules which received a very positive response from students, namely limited trials and extensive tests produced the same.

3.2 The Second Stage is Product Planning and Development

At the product planning and development stage, the steps taken include creating indicators in accordance with Competency Standards, Core Competencies, and Basic Competencies, as well as creating concept maps to describe the relationship between learning concepts. Apart from that, the material used in the e-module is prepared based on indicators and concept maps that have been created, by selecting local West Java wisdom that is relevant to sound wave material. Images and videos are selected to the learning material, and sample questions and evaluation questions are prepared to measure student understanding, which is also linked to local wisdom in West Java. During the preparation stage, the researcher interacted with the supervisor to obtain input and suggestions that enriched the e-module development. Next, at the product development stage, the planned e-module is translated into an initial form of product. The e-module display includes a front and back cover which includes important information such as the author's name, illustrations, title, as well as the names of supervisors and researchers. Instructions for using the e-module are included to guide users in utilizing it effectively. The table of contents is compiled to make it easier to navigate the material by including page numbers. Concept maps are used as a visual guide to the relationships between materials. The content of the e-module includes all material about sound waves along with example questions and relevant local advantages. The section on evaluation provides questions that can be used to measure student understanding, complete with answer keys.

3.3 The Third Stage is Product Validation and Product Revision

The e-module that has been created is then tested for product validity by experts who will assess three aspects, namely material aspects, media aspects and linguistic aspects. The product validation results obtained are in the form of an assessment scale, suggestions and input from each expert validator, namely Chittra

Kedkaew from the Master of Science Program in Physics for Taecher, Faculty of Science, King Mongkut's University of Technology Thonburi, Bangkok, Thailand and Andrew David from the Department of Applied Physics, Papua New Guinea University of Technology, Papua New Guinea which assesses based on material aspects, media aspects and linguistic aspects. Below is a table of expert validation analysis.

Table 6. Material, Media, Language Expert Validation Analysis

No.	Assessment Aspects	Indicator	Average	Eligibility Percentage	Criteria
1	Material Aspect	Content eligibility	3.42	85%	Very good
		Presentation Eligibility	3.56	89%	
2	Media Aspect	Graphic Feasibility	3.54	77%	Very good
		Organizing	3.46	86%	
3	Language Aspects	Legibility	3.57	89%	Very good
		Suitability to the level of development of students	3.46	86%	
		Overall Average	3.51	87%	Very good

The results of the main product revision or product revision, namely the guidelines for using e-modules before and after the revision, are to use excessive colors, then revise it using simpler colors. The concept map after the revision, namely the relationship and harmony between sub-materials, is clearer than before the revision. This research is development which produces a product in the form of a West Java local superior physics e-module on sound wave material. The e-module that has been created is then validated first to determine the feasibility of the e-module. The validation results for the media aspect obtained the lowest score among other aspects, especially the graphic assessment with a percentage of 77%. This is because the book cover illustration does not depict the material presented and the display design uses too many colors. According to Widayanti [46], the use of color in learning modules must use color combinations that suit the target reader. This means that for high school students, the color combinations used should not be excessive.

Overall the results of the validation assessment obtained a percentage of 87%. This shows that the e-module developed can be implemented in formal and non-formal learning processes. Based on this opinion, it explains that educators must be able to connect learning material with phenomena that exist around students, such as local advantages, to help improve student understanding. Products that have been validated and revised are then carried out on a small scale test to determine student responses to the e-module. Based on the results of small-scale testing, indicator 5 obtained the lowest percentage, namely 82%. Because, there is no indication that the e-module presented also contains videos in it. In fact, instructions for using e-modules play a very important role in making it easier for users to use and learn e-modules.

Figure 1. Image of the cover E-Module

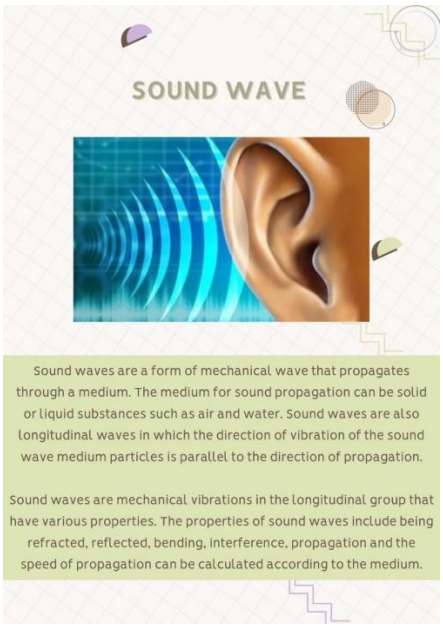

Figure 2. E-Module image of sound wave material

Figure 3. E-Module image of angklung material

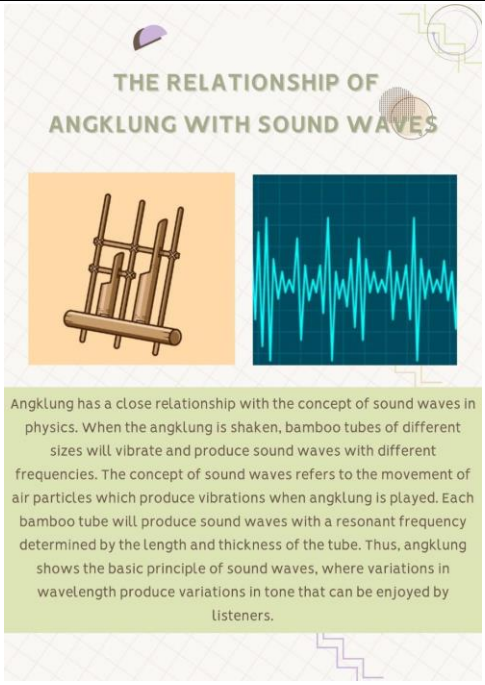

Figure 4. E-Module image of the relationship material

3.4 The fourth stage is small group testing and implementation testing

The fourth stage is small group testing and implementation testing in the form of pre-test and post-test. Below is a table of students' statistical test results before and after being given the e-module.

Table 7. statistical test results before and after being given the e-module.

Statistics	Pretest	Post Test
N (Number of Students)	33	33
Mean	69.54	78.79
Median	69.00	85.00
Mode	65	80
Min	55	68
Max	80	90

The students' responses before being given the developed e-module obtained an overall average of 69.54 which shows that students need an e-module to improve grades and motivate students. This is in accordance with research conducted by Widayanti [46], regarding the development of physics teaching materials to increase student motivation and learning outcomes, where the results of student responses to the teaching materials developed were in the Very Good category. Products that have been revised are based on student suggestions and input, then an e-module implementation test is carried out to determine student learning outcomes after studying the e-module.

The students' responses before being given the developed e-module obtained an overall average of 85.00 which was categorized as very good, which shows that students need an e-module to improve their grades and motivate students. This shows that the e-module developed can be implemented in formal and non-formal learning processes. That educators must be able to relate learning material to phenomena around students such as local advantages to help increase students' understanding. Products that have been validated and revised are then carried out on a small scale test to determine students' responses to the e-module.

3.5 The Fifth Stage is Statistical Testing of Students' Science Process Skills.

This stage aims to determine the level of success of the product in improving students' science process skills. The respondents used in this research consisted of 20 students of class XI Science at Senior High School 1 Dukupuntang high school who were chosen randomly. Table 8 below presents descriptive statistical tests to measure students' science process skills from using 3D Page Flip Physics E-Module Development of Sound Wave Material Based on Angklung Local Wisdom to Improve Integrated Science Process Skills.

Table 8. Statistics descriptive test of Students' Science Process Skills

Variable	Category	Interval	F	%	Mean	Med	Min	Max
Integrated Science Process Skills	Very not good	24 – 43.2	0	0	85.5	88.1	70.0	120.0
	Not good	43.3 - 62.4	0	0				
	Enough	62.5 – 81.6	4	20				
	Good	81.7 – 100.8	12	60				
	Very good	100.9 – 120	4	20				

Based on the statistical table above, it can be seen that the students' integrated science process skills variable is dominant in the good category with a percentage of 60% and an average score of 85.5 and a minimum student score of 70.0. From the overall results it was found that the use of the 3D Page Flip Physics E-Module for Sound Wave Material Based on Local Angklung Wisdom can improve students' Integrated Science Process Skills. Students demonstrate good skills in identifying variables, compiling tables of the data obtained and then processing them. Not only identifying the ingredients, but also paying attention to various details and characteristics that might affect the quality and sound of the angklung. Apart from that, students also demonstrate skills in classifying angklung and building hypotheses based on various criteria such as size, pitch, or type of bamboo used. They are able to arrange classifications in tables systematically and understand the significant differences between types of angklung. Through this E-module, students are able to design simple experiments and carry out experiments related to Sound Waves.

Furthermore, students also expressed the ability to predict the impact of changes in the construction or materials for making angklung on the sound produced. They were able to relate the physical characteristics of the angklung to the properties of the sound it produced, demonstrating a deep understanding of the acoustic principles involved. Additionally, students were able to summarize their findings clearly, demonstrating a solid understanding of the relationship between the physical and acoustic aspects of this musical instrument. In expressing their findings, whether in the form of a report or presentation, they demonstrate the ability to communicate their ideas clearly and persuasively to their audience.

The validation stage of developing the 3D Pageflip Physics E-Module with sound wave material based on local angklung wisdom involves several important steps to ensure the accuracy, precision and understandability of the material [47], [48]. First, validation is carried out by a physicist to ensure that the physics content presented in the module covers the correct concepts and is in accordance with the curriculum. Next, local wisdom or traditional music experts are evaluated to ensure that the integration of angklung is relevant and in line with cultural values Sibrani [17], Apart from that, instructional design and multimedia experts were also involved to evaluate the visual presentation and interactivity of the module. After that, a limited trial was carried out on a group of students to assess their understanding of the material and response to the use of angklung in learning. Finally, statistical analysis was carried out on the trial results to measure the level of effectiveness and applicability of the module. Overall, this validation stage aims to ensure that the 3D Pageflip E-Module is not only accurate in terms of physics concepts and local values, but is also able to significantly improve students' understanding and skills. The following describes the validation stages.

To test the effectiveness of the 3D Pageflip Physics E-Module with sound wave material based on the local wisdom of angklung, a small group test was carried out first [49]. At this stage, a number of students are randomly selected to use the module in their physics learning. During the trial, students' responses to 3D visualization, use of angklung, and their understanding of the physics of sound were observed. Direct feedback from the students and physics teachers involved was also collected to evaluate the clarity, readability and understandability of the module [50], [51]. Apart from that, a pre-post test was also carried out to measure the increase in students' understanding and skills before and after using the module. The results of this small group test become the basis for making adjustments, improvements and refinements to the module before involving a larger group of students [52]. Thus, this small group testing stage is a critical first step in assessing the success and need for improvement of this learning module.

This research is in line with research conducted by Sibrani [17], even though the e-module with the 3D Pageflip display offers an attractive visual approach to learning physics, there is a significant gap regarding the integration of local angklung wisdom in waves and sound. This e-module may not have fully explored the potential of angklung as a practical tool in demonstrating the concept of waves and sound as a whole. There is a need to design e-modules that not only include dynamic 3D visual elements but also include practical applications of angklung to explain physics concepts more contextually and thoroughly. Thus, it is necessary to overcome this gap by developing a more holistic e-module, utilizing the local wisdom of angklung in more depth, and integrating it with physical concepts regarding waves and sound.

The innovation of developing the 3D Pageflip e-module with the integration of local angklung wisdom in learning the physics of sound wave material lies in an integrated approach that emphasizes the development of students' science process skills. Through a combination of dynamic 3D visualization and practical application of

angklung, this e-module not only provides a more vivid and comprehensive understanding of the concepts of waves and sound, but also stimulates the development of students' scientific skills. Novelty lies in the application of scientific process skills, such as observation, experimentation and analysis, which are integrated with the use of angklung as a practical tool. By embracing the local wisdom of angklung, this e-module creates a more dynamic, relevant and in-depth learning experience, supporting students in gaining an understanding of physics concepts while improving overall science process skills.

The integration of Science Process Skills in physics learning using the local wisdom of angklung has significant implications both in the short and long term. Directly, in the short term, students will develop practical skills such as observation, experimentation and analysis that are integrated with local wisdom values. This can increase student involvement in learning, provide a more realistic learning experience, and increase understanding of physics concepts [53]–[55]. In the long term, the integration of Science Process Skills with local angklung wisdom helps shape students as individuals who are skilled in critical thinking, acting scientifically, and connecting physics knowledge with their cultural context. Apart from that, students can also internalize local wisdom values as part of their cultural identity, foster a sense of pride in cultural heritage, and support the preservation of traditional values in society. Thus, the integration of Science Process Skills in physics learning with the local wisdom of angklung has an overall positive impact, forming students as skilled learners and connected to their cultural context.

The limitation that needs to be considered in implementing sound material physics learning with the integration of local angklung wisdom is the limited focus on sound material. Although the local wisdom of angklung can provide a rich practical dimension to the concept of the physics of sound, it is possible that other aspects of the physics material have not been fully explored in the context of this local wisdom. Additionally, it should be acknowledged that this approach has not been tested extensively on large groups of students. Therefore, the results and effectiveness of this learning may still require further validation through research involving larger groups of students to ensure the generality and applicability of this approach in a broader physics learning environment. Recognizing these limitations, next steps should involve trials on a larger student population to evaluate the effectiveness and applicability of learning physics with the local wisdom of angklung more thoroughly.

4. CONCLUSION

In developing the 3D Pageflip Physics E-Module with sound wave material based on the local wisdom of angklung, it can be concluded that this approach is promising as an innovative method for improving students' science skills processes in an integrated manner. Integrating local angklung wisdom provides a rich contextual dimension to physics learning so that it is more relevant to students' lives. The 3D Pageflip e-Module adds visual and interactive elements that enrich the learning experience. This is proven by the results of the percentage of product suitability by expert validators which is categorized as very good or suitable for use. This can also be seen from the descriptive statistical test of students' science process skills which shows the good category. However, it is important to note its limitations, especially in exploring broader physics material and this approach has not been tested on larger groups of students. So researchers suggest conducting research with a larger group of students.

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