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Development of Local Content E-Module of *Sebimbing Sekundang* Dance with Inquiry Learning Model on Movement System Material to Improve Science Literacy and Student Learning Motivation

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abstract

This study aims to determine the validity, practicality, and effectiveness of the local content E-Module for the *Sebimbing Sekundang* dance, using an inquiry learning model on movement system material, to improve scientific literacy and students' learning motivation. This type of research is a development project using the ADDIE model and an equivalent control group design. The *E-Module* product was evaluated by media expert lecturers, material experts, practitioners, and tested on a limited number of 36 grade XII students. The population of this study comprised grade XI students of SMAN 01 OKU: XI.2 as the control class (36 students) and XI.4 as the experimental class (36 students), selected by random sampling. The instruments used were interviews, observations, student needs questionnaires, media expert and material expert validation questionnaires, practitioner validation questionnaires, student practicality response questionnaires, observation of learning implementation, science literacy test questions, and learning motivation. Data analysis techniques used normality tests, homogeneity tests, multivariate tests, and N-Gain tests. The results of the study showed that the E-Module was highly valid for use as a teaching material, with media experts rating it 92% (very feasible) and material experts rating it 96.51% (very feasible). In addition, the E-Module was rated very practical by biology teachers (95.71%) and by students (83.5%). The use of E-Modules was very effective in improving scientific literacy and student learning motivation with a Sig. value of 0.00 <0.05 and an N-Gain score of 0.73 included in the high category for scientific literacy, and 0.76 included in the high category for learning motivation. In conclusion, the local content E-Module of *Sebimbing Sekundang* dance is valid, practical, and effective in increasing scientific literacy and students' learning motivation.

1. Introduction

Teaching materials are systematically arranged collections that represent and support the learning process (Magdalena et al., 2020). The selection of good teaching materials can also determine the success of student learning (Aprilia, 2019). Good teaching materials can help teachers and students achieve learning goals and are tailored to the material to be studied (Magdalena et al., 2020). In the 21st century, teachers need to serve as facilitators in the learning process (Raihana et al., 2021). Teachers must master various technology-based teaching materials so that students can easily receive the knowledge delivered (Herdiana et al., 2021). However, many teachers still rely only on limited facilities and learning resources. This results in students quickly getting bored, lacking motivation, and the results obtained are often not optimal. With the advancement of technology, there are many benefits in the world of education, namely making it easier for students to access learning resources, improving the quality of learning, and enriching students' learning experiences (An'navi & Sukartono, 2023).

21st century education requires students to have good scientific literacy skills in order to be able to think critically, solve problems, and make decisions based on scientific evidence (Faridah et al., 2022). Suwandi & Supriyanti (2021) conducted research on several aspects of scientific literacy skills and obtained a score of 31.20% for the scientific context aspect, 40.48% for the scientific content aspect, and 51.02%. With an average overall score of 50.48% and included in the low category. This is also supported by the results based on the results of PISA 2022, the scientific literacy score of Indonesian students showed a decline from 396 to 383, far below the international average of 489 (Suwandi & Supriyanti, 2021). This low ability indicates the need for improvement efforts in learning strategies, especially in terms of developing contextual teaching materials that are able to increase active student involvement.

Several factors that cause low scientific literacy skills, namely learning is still centered on the teacher and does not provide opportunities for students to develop high-level thinking skills, learning that is still predominantly using lecture and memorization methods, and errors in selecting learning resources (Ekawati et al., 2021). The learning resources used by teachers are less contextual, resulting in a lack of connection between learning materials and everyday life (Shofiyah et al., 2020). This is in line with the results of the researcher's interview with teachers at SMAN 01 OKU which stated that one of the abilities that is still poorly mastered by students is literacy. This is because the teaching materials used by teachers in learning are only printed books. These teaching materials only contain general content, do not contain scientific literacy content, and are less contextual in everyday life. This makes students less actively involved in the learning process and less able to understand the material.

Learning characteristics that support improving scientific literacy, namely involving students directly. However, there is still often a lack of student involvement in the learning process caused by the use of less effective learning models. One suitable model to use is Inquiry Learning. This learning model encourages students to be active in learning, exploring, and investigating subject matter to be solved independently. Research conducted by Yofamella (2020) using the inquiry learning method was able to increase student activity, student self-confidence, and increase understanding of science concepts and student involvement in the learning process. Technology-based teaching materials have been widely used in the learning process. However, many of these teaching materials are still less specific in conveying certain materials, and are one-way in nature that do not involve students in exploring. With the advancement of technology today, teaching materials can be made into digital teaching materials that are designed to be more practical, effective and efficient (Agustin et al., 2020). Teaching materials that can be developed using

technological advances and can be accessed digitally are E-Modules. E-Modules have advantages, namely easy to access anytime and anywhere, and learning media can be interactive (Sugevin et al., 2022). E-Modules can be made into a learning tool by displaying multimedia components such as text, images, audio, video, music, interactive quizzes, and even animation (Basuki & Sholeh, 2019).

The preparation of E-Modules must be well-organized and contextual to make learning more relevant, interesting, and effective. A good E-Module not only presents information but also helps students link the material to real life or their surroundings (Tahir & Rosyidah, 2022). One way to compile an E-Module that can link the material to the surrounding environment is to integrate local wisdom into the subject (Rayi, 2021). In a learning process, biology is considered one of the subjects that are difficult to understand because it uses many scientific terms not commonly used in everyday life, complex learning concepts, and materials that are difficult to explain (Syarah et al., 2021). To facilitate the learning process, teaching materials can be presented in the form of E-Modules that integrate local wisdom. Local wisdom that can be integrated into biology learning is the regional dance. The movements in a dance can be applied to one of the biology materials, namely the human movement system. One example of local wisdom of regional dance that can be used is the *Sebimbing Sekundang* dance, which originates from Ogan Komering Ulu (OKU) Regency.

Based on interviews with teachers at SMAN 1 OKU, the movement system material has never been linked to local wisdom in the local area. In addition, teachers said that many students still find it difficult to understand the learning process and lack student participation in the learning process. Research conducted by Rohmah and Setiani (2022) also yielded similar results: students find it difficult to understand the material because the learning process relies solely on textbooks and uses memorization methods. The development of E-Modules containing local wisdom of the *Sebimbing Sekundang* dance on the movement system material is needed to improve students' understanding through the application of concepts in real life and to foster motivation to participate in learning (Anzelina, 2023). Learning motivation is one of the things that greatly influences student learning outcomes (Cahyono et al., 2022). Research by Dani et al. (2022) shows that using E-Modules grounded in local wisdom makes learning more engaging, thereby increasing students' motivation to learn.

Based on the description above, the researcher concluded that biology learning requires digital technology-based teaching materials that are integrated with local wisdom, especially in the OKU district. The researcher is interested in conducting a study titled "Development of Local Content E-Module of *Sebimbing Sekundang* Dance with Inquiry Learning Model on Movement System Material to Improve Science Literacy and Student Learning Motivation". This E-Module is expected to be useful for teachers and students, as well as to provide an understanding of the human movement system through the local wisdom of the *Sebimbing Sekundang* dance.

2. Method

The model used in this study is the development model, also known as the Research and Development model. R&D is a research and development process that ultimately produces a product and tests its effectiveness. The product to be produced in this study is an E-Module featuring the local *Sebimbing Sekundang* dance. The development model chosen for this study is the ADDIE development model, consisting of analysis, design, development, implementation, and evaluation. This development model is used because the product produced is definitely valid;

at each stage, it is carried out based on a process of in-depth analysis, design, development, implementation, and evaluation. Each stage is evaluated before proceeding to the next stage. In addition, this model is more systematic and structured (Waruwu, 2024). The E-Module development procedure consists of five stages as seen in Table 1.

Table 1. ADDIE Development Procedure

No	Development procedures	Achievements	Implementation
1.	Analysis	Identifying the causes of problems in learning and pre-planning the subjects to be taught	a. Learning Analysis b. Curriculum Analysis c. Student Needs Analysis
2.	Design	Verify the desired outcomes (learning objectives) and determine the products to be developed.	a. Data collection b. Create a plan (storyboard)
3.	Development	Develop and validate products	a. Pre-Drafting b. Product Drafting c. Product Validation (material experts, media experts, practitioner experts and cultural experts) d. Revision I e. Limited trial f. Revision II
4.	Implementation	Preparation of learning environment and implementation of learning	Field trials involving students and teachers
5.	Evaluation	Assessing the quality of products and learning processes	Product evaluation

The subjects in this study were students in class XI IPA at SMA N 1 OKU. The sample was randomly selected from the entire XI class population. Two classes were randomly selected as the control and experimental classes. One class was selected as the control class, namely XI.4, with 36 students, and XI IPA with 36 students as the experimental class. The techniques and instruments used in this study to collect data included both qualitative and quantitative methods. Qualitative data were collected through interviews and questionnaires. This technique was used during needs analysis, expert validation (material, media, and practitioner experts), and questionnaire responses from product users. Quantitative data in this study were obtained from field trials (large-scale) through pretest-posttest tests. This technique is used to measure scientific literacy and student learning motivation before (pretest) and after (posttest) learning. The instruments used in this study were interviews, observations, student needs questionnaires, media expert and material expert validation questionnaires, practitioner validation questionnaires, student practicality response questionnaires, observations of learning implementation, science literacy test questions, and learning motivation. Statistical data analysis techniques used normality tests, homogeneity tests, multivariate tests, and normalized gain score tests.

Product Validity Analysis

The validity of the E-Module was assessed using a validation sheet. Data were assessed using a Likert scale, as described by Utari (2018), as shown in Table 2.

Table 2. Likert Scale Categories

Score	Categories
5	Very Appropriate
4	Appropriate
3	Quite
2	Not Appropriate
1	Very Not Appropriate

The scores are converted with valid criteria based on the criteria according to Arikunto (2009), in table 3:

Table 3. Eligibility Categories

Score in message (%)	Eligibility Categories
<21%	Very Invalid
21 – 40%	Invalid
41 – 60%	Quite Valid
61 – 80%	Valid
81 – 100%	Very Valid

Product Practicality Questionnaire Analysis

The practicality questionnaire analysis was obtained from the results of students filling out the response questionnaire regarding the products used using a Likert scale. Scores were converted based on practicality categories based on criteria according to Riduwan (2015), in Table 4.

Table 4. Practicality Categories

Score in message (%)	Practicality Categories
<21%	Very Impractical
21 – 40%	Impractical
41 – 60%	Quite Practical
61 – 80%	Practical
81 – 100%	Very Practical

Product Effectiveness Test Data Analysis

Students' scientific literacy and learning motivation were analyzed through pretest and posttest data normalized using the N-gain Score. The N-gain value is then categorized based on Hake's (2002) criteria, as show in Tabel 5.

Table 5. N-Gain Categories

Score	Categories
> 0.7	High
0.3 – 0.7	Medium
< 0.3	Low

MANOVA Test Analysis

This analysis uses the MANOVA Test, which is used to test the influence of several independent variables on several dependent variables. The analysis was conducted to determine the effectiveness of the E-Module that has been developed on improving science literacy and student learning motivation. The MANOVA test can be conducted if the data meet the prerequisite tests, namely the multivariate normality test and the homogeneity of variance-

covariance. Data comes from a population with a multivariate normal distribution if sig. > 0.05. If the data comes from multivariate normally distributed data, then a homogeneity test of the variance-covariance matrix is performed. The data is stated to have the same variance if the sig. > 0.05

The MANOVA test can be conducted after the pretest and posttest data obtained are proven to come from a population that is normally distributed multivariately and has the same variance. If the value (2-tailed) < 0.05, then H_0 is rejected and H_a is accepted. So it can be concluded that the use of E-Modules containing local dance *Sebimbing Sekundang*, with the inquiry learning model, significantly influences the material on the movement system to improve scientific literacy and student learning motivation.

3. Result and Discussion

The product developed in this research is a locally contained E-Module on the human movement system. Learning activities are carried out using the steps of the inquiry learning model. The development of the E-Module product uses the ADDIE development model, which is carried out through five stages, namely: analysis, design, development, implementation, and evaluation.

Analysis Stage

The analysis phase aims to identify problems that occur in learning, particularly biology. This analysis was conducted through interviews with biology teachers, student needs analysis using questionnaires, and curriculum analysis. The analysis results can be seen in Table 6.

Table 6. Analysis Results

No	Analysis carried out	Analysis obtained
1.	Learning Analysis	Based on interviews with biology teachers, several obstacles were identified in the learning process. Teachers stated that 85% of students have low scientific literacy skills. In addition, teachers reported that students' learning motivation tends to be low when learning involves only textbooks. The learning methods often used by teachers are lectures and discussions, while the learning model often used is project-based learning. The results of the interviews also stated that teachers never use cellphones during the learning process, the teaching materials used are still limited to printed books and printed worksheet. In addition, the learning carried out has never integrated local wisdom, so it has not provided students with a contextual learning experience. Based on the obstacles identified, several opportunities can be leveraged to improve the learning process. Based on the data obtained, all students (100%) have cellphones, and the school allows their use in the learning process, especially to search for additional literature. This is an opportunity to develop interactive digital-based teaching materials. In addition, applying local wisdom in learning can be an effective way to increase student involvement in the learning process.
2.	Curriculum Analysis	The curriculum used at SMAN 1 OKU is the independent curriculum and the curriculum 13. The independent curriculum is applied to grades X and XI, while curriculum 13 is for grade XII.
3	Student Needs Analysis	Based on the results of filling out the student needs questionnaire, 86% of students feel bored learning using textbooks only. 98% of students are interested in digital teaching materials equipped with text, images, videos, and interactive buttons to support learning about the movement system. In addition, 95% of students agreed that using local dance

	wisdom can help them understand the material on the human movement system. This shows that students need interesting teaching materials that can be easily accessed anywhere and anytime based on online media. This is in line with the results of filling out the student needs questionnaire, there are 98% of students agree that digital-based teaching materials should be developed by integrating the local wisdom of the *Sebimbing Sekundang* regional dance as teaching materials in the material of the human movement system.

Design Stage

The design stage is carried out by compiling a systematic human movement system material that will be included in the product and designing the framework for the local content E-Module product in the form of a story board.. The product design is presented in Table 7.

Table 7. Aspects included in the E-Module

No	Aspects included in the E-Module
1.	Homepage (Cover)
2.	Menu Page (Foreword, Table of Contents, Instructions for Use, Introduction)
3	Learning Achievements, Brief Description of Material, Learning Indicators, Learning Objectives
4.	Introduction to Learning Activities
5.	Material (Skeletons, Bones, Joints, Interactive Quiz 1, Muscles, Disorders in the Movement System, Efforts to Maintain the Movement System, Interactive Quiz 2, Analysis of *Sebimbing Sekundang* Dance),
6.	Practice Questions and Self-Assessment
7.	Bibliography
8.	Author Profile

Development Stage

This development stage represents the realization of the E-Module product design based on the storyboard created in the previous design stage. Expert assessments, along with suggestions and input, were obtained from media and content experts. The product validity results, along with suggestions and input from Media Experts is shown in Table 8.

Tabel 8. Product Assessment Results by Media Experts

No	Assessment Aspects	Score	Criteria
1-3	Use of Font Size and Spacing	100%	Very Valid
4-5	Layout	80%	Valid
6	Image and Media Suitability	100%	Very Valid
7	Motivating Ability	100%	Very Valid
8-9	Interactivation	80%	Valid
	Average	**92%**	**Very** Valid

Based on the assessment results by media experts in Table 8. it can be explained that the use of font variations, font ratios, and use of spaces used in the E-Module are appropriate and proportional, thus increasing user readability. The placement layout for selecting menu buttons, images, videos, and navigation buttons is appropriate and can be seen easily so that it can be used smoothly on mobile phones and laptops. The suitability of the use of images and media as supporting materials is appropriate so that users can understand it. The use of this E-Module can also increase user attention and activity in the learning process with the interactive navigation buttons on the E-Module greatly assisting users in operating it. There are also questions that are in accordance with the material needs in the E-Module, so that they can train students'

understanding after learning is carried out. The average score obtained from the five aspects of the assessment by media experts is 92% with very valid criteria, so it can be concluded that the local content E-Module is suitable for use in biology learning activities. Some suggestions and input from media experts can be seen in Table 9

Table 9. Suggestions and Input from Media Experts

No	Suggestions and Input	Follow Up
1.	The use of images in the activity introduction should directly use dance movements.	This has been corrected based on suggestions and feedback.
2.	Several videos lack captions; these should be added.	Captions have been added to the videos.
3	Interactive quizzes 1 and 2 in the E-Module are ineffective, causing students to simply select answers without reading and understanding the questions. This should be improved to make them more effective.	This has been improved by replacing the quizzes within the E-Module with Google Forms, requiring users to complete them and receive a score immediately, making them more effective.
4.	Explanations have been added for each correct or incorrect answer in interactive quizzes 1 and 2.	Explanations have been added for each correct or incorrect answer.
5.	Examples of musculoskeletal system disorders that can occur in dancers should be provided, including which muscles, joints, or bones they affect.	Examples of musculoskeletal system disorders that can occur in dancers have been added.

The assessment conducted by material experts includes aspects of material feasibility, presentation ,and local wisdom. The assessment results can be seen in Table 10.

Table 10. Product Assessment Results by Material Experts

No	Assessment Aspects	Score	Criteria
1-9	Material Eligibility	97,77%	Very Valid
10-16	Presentation	94,28%	Very Valid
17-24	Local Wisdom	97,50%	Very Valid
	Average	**96,51%**	**Very Valid**

Based on the assessment results by material experts in Table 10. it can be seen that the material used in the E-Module is in accordance with the learning achievements, learning objectives and learning achievement indicators. In addition, the definition of the skeleton, bones, joints, muscles, abnormalities and disorders of the motor system, and efforts to maintain the health of the motor system presented in the E-Module are in accordance with the material. Foreign terms or scientific names in the E-Module are appropriate and accurate, and the presentation of the material, the arrangement of words and sentences between chapters and sub-chapters, spelling and punctuation show the sequence of the material correctly, and the sentences used are easy to understand.

The use of images and videos is very clear, helping users understand the material. There are also test questions that can be used to measure the achievement of learning objectives. The use of local wisdom of the *Sebimbing Sekundang* dance shows its valid with the material on the human motor system in biology learning. Each dance movement shows examples of the skeleton, joints, and muscles that function, so that this *Sebimbing Sekundang* dance has integrated the material on the human motor system and makes it easier for students to understand the learning material. The average score obtained from the three aspects of assessment by material experts was 96.51% with the criteria of being very suitable for use in biology learning, especially in the human

locomotor system material. Some suggestions and input from material experts can be seen in Table 11.

Table 11. Suggestions and Input from Material Experts

No	Suggestions and Input	Follow Up
1.	Material has been added to the framework chapter.	Material has been added to the framework chapter.
2.	More attention has been paid to the sentence structure.	Several sections have been corrected.
3	Typos and punctuation errors were still present.	Typos and punctuation errors have been corrected.
4.	Additional background information has been added to further reinforce why the measured abilities were low, why the schools were chosen, and why the local wisdom of the *Sebimbing Sekundang* dance was used in the human movement system material.	Added to the background information

In this study, a practical test was also conducted. The practicality assessment of the E-Module was carried out by the biology class teacher and 33 students of class XII MIPA 1 at SMAN 1 OKU, Baturaja Timur Regency, South Sumatra. The results of the practicality assessment can be seen in Table 12 and 13.

Table 12. Practicality Assessment Results By Biology Teachers

No	Assessment Aspects	Score	Criteria
1	Learning Outcomes	100%	Very Pratical
2-3	Learning Objectives and Indicators	100%	Very Pratical
4-6	Material Presentased	100%	Very Pratical
7-8	Practice Questions	90%	Very Pratical
9	Bibliography	100%	Very Pratical
10	Layout	100%	Very Pratical
11	Language	80%	Pratical
	Average	95.71%	Very Pratical

Based on the results of Table 12. it can be explained that the E-Module with local content of *Sebimbing Sekundang* dance on the human movement system material is complete and in accordance with learning achievements, learning objectives, and learning achievement indicators. The material presented is in accordance with the sub-chapters of each material, the use of images and illustrations is also appropriate so that it can be understood well, the use of local content of *Sebimbing Sekundang* dance is also related to everyday life. There are practice questions on the E-Module that are in accordance with the material presented, in addition, the answer keys provided are also correct and in accordance with the questions made. The E-Module is equipped with other supporting factors such as images and videos that are in accordance with each material. The appearance or layout of this local content-based E-Module is very attractive so that it is not boring to use. The selection and use of riches and the arrangement of paragraphs in the E-Module are also good and appropriate. The average score of the eleven assessment aspects assessed by the teacher is 95.71% with a very practical category, so it can be concluded that the E-Module with local content of *Sebimbing Sekundang* dance is very suitable for use in biology learning activities.

Table 13. Practicality Assessment Results By Student Assessment

No	Assessment Aspects	Score	Criteria
1-6	Interest	82.4%	Very Pratical
7-20	Material	84.6%	Very Pratical

	Average	83.5%	Very Pratical

Based on the results of Table 13. an average score of 82.4% was obtained in the aspect of interest. It can be concluded that the use of E-Modules makes learning more interesting compared to using textbooks alone. In addition, the overall appearance has a very good appearance, the use of color combinations presented is very interesting to look at. In its use, students can also use it smoothly because there are clear and easy-to-understand instructions for use, there are also navigation buttons that make it easy for users to use the E-Module. In addition, the use of this E-Module is also very practical and effective because it can be used anywhere and anytime. The material provided in the E-Module is very easy to understand and has explained the material clearly so that it can improve students' understanding and insight into the material of the human movement system. The presentation of multimedia facilities such as text, images, audio and video is also appropriate and clear, besides the language used is also easy to understand, so that it can make it easier for students to understand the material with the existing visualization. The integration of local wisdom of the *Sebimbing Sekundang* dance contained in the E-Module can clarify the material and make it easier to learn. There are examples of questions and exercises that are in accordance with the material in the E-Module, which are able to attract students' attention to work on them. The overall average score obtained from the assessment of 33 grade XI students was 83.5% with a very decent category. It can be concluded that the developed E-Module product is stated to be very practical for use in the learning process

Implementation Stage

The implementation stage is the field trial stage after the product and instrument have been declared valid by experts and practitioners in real conditions, namely implemented in learning activities. The assessment of the implementation of learning in the classroom was carried out by observers, namely biology teachers at SMAN 1 OKU at each stage of learning. The results of the assessment of the implementation of learning can be seen in Table 14.

Table 14. Learning Implementation Assessment

No	Teaching Module Activities	Implementability		Criteria
		Experiment	Control	
1	Meeting 1	100%	100%	Very Good
2	Meeting 2	100%	100%	Very Good

Based on the assessment results in Table 14. it was found that the learning activity plan using the syntax of the inquiry learning model was implemented very well from the first meeting to the last meeting in the experimental class and the control class. The difference between the two classes is the teaching materials used, in the experimental class using an E-Module containing local *Sebimbing Sekundang* dance which was distributed before the learning was carried out, while the control class used a textbook.

Evaluation Stage

The evaluation stage is carried out at each stage of development starting from the analysis, design, development and implementation stages. Evaluation at the analysis stage is carried out to determine the suitability of the problem-solving solution with the problems that exist in the school. Evaluation at the design stage is carried out to revise the design with suggestions and

input from the supervising lecturer, in addition to being carried out to determine the suitability of the product and instruments to be developed with the problems obtained at the analysis stage. At the development stage, product revisions are carried out according to suggestions and input from media experts, material experts, biology teachers and students regarding the products used. At the implementation stage, product trials are carried out in real conditions, namely in learning activities. This aims to determine whether the product is effective in increasing scientific literacy and student learning interest. Then, based on the evaluation results at this stage, improvements or revisions are made until the product is declared feasible and ready to be used for field trials.

Product Effectiveness Test Data Analysis Results

The effectiveness test of students' scientific literacy skills and learning motivation was measured using instruments that had been applied both before learning (pretest) and after learning (posttest). Then the values obtained were calculated using the normalized gain score or N-Gain score test. This test was conducted to determine the effectiveness of learning using the local content E-Module product of *Sebimbing Sekundang* dance in the experimental class with learning using textbooks in the control class. The results of the N-Gain score test of scientific literacy skills are presented in Figure 1.

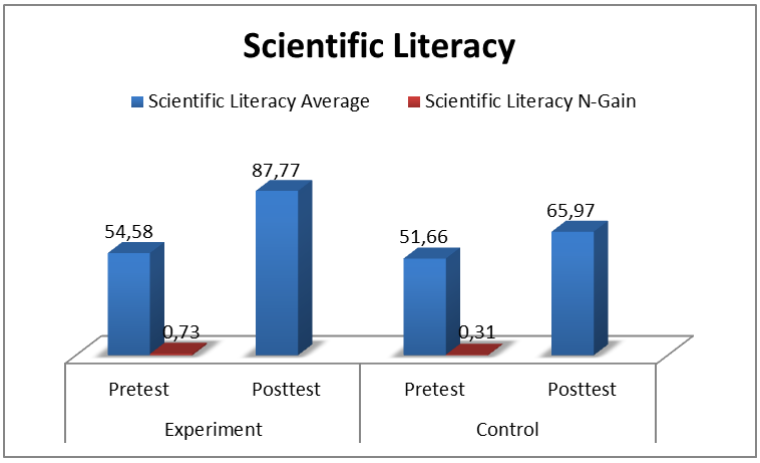

Figure 1. Science Literacy Results Before and After Learning

Based on Figure 1. the average posttest score in the experimental class was 87.77, higher than the average pretest score of 54.58 with an increase of 33.19 and an N-Gain score of 0.73, included in the high category. While in the control class, the average posttest score was 65.97, higher than the pretest score of 51.66 with an increase of 14.31 and an N-Gain score of 0.31 included in the moderate category. In accordance with the criteria determined by Hake (2002), namely the N-Gain value is said to be "high" if it is >0.7, it is said to be "medium" if the value is between 0.3-0.7 and it is said to be "low" if it is >0.3. With the results obtained, it can be concluded that the scientific literacy of students in the experimental class experienced a more significant increase compared to the control class. Research by Herdiana et al. (2021) suggests that using E-Modules that leverage local potential can improve students' scientific literacy.

The next test results are the learning motivation of students in the experimental class and the control class. This can be seen from the average and N-gain on the learning motivation of the experimental and control classes before and after learning can be seen in Figure 2.

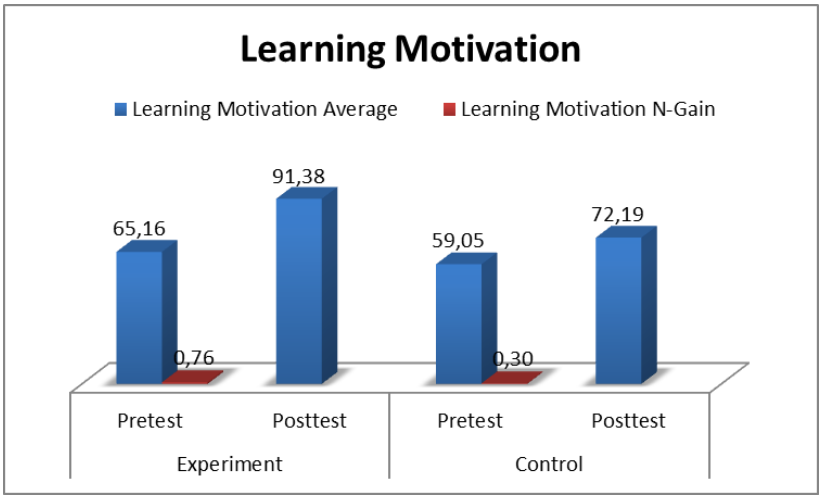

Figure 1. Learning Motivation Results Before and After Learning

Based on Figure 2. the average value of posttest learning motivation in the experimental class is 91.38, higher than the average pretest value, which is 65.16 with an increase of 26.22 and an N-Gain score of 0.76, included in the high category. While in the control class, the average posttest value is 72.19, higher than the pretest value, which is 69.05 with an increase of 13.14 and an N-Gain score of 0.30, included in the moderate category. In accordance with the criteria determined by Hake (2002), namely the N-Gain value is said to be "high" if it is >0.7, it is said to be "medium" if the value is between 0.3-0.7 and it is said to be "low" if it is >0.3. With the results that have been obtained, it can be concluded that the learning motivation of students in the experimental class has increased more significantly compared to the control class. Thus, it can be concluded that the use of E-Modules containing local content of *Sebimbing Sekundang* dance in the experimental class is more effective than the use of textbooks in the control class. In line with research by Rusnaini et al. (2021), it was suggested that using E-Modules integrated with local values can increase students' learning motivation because the material is more relevant to their daily lives. The implementation of interactive E-Modules can also increase students' learning motivation compared to the implementation of conventional teaching materials (Ramdhani et al., 2020; Sari et al., 2020; Wulandari et al., 2020).

MANOVA Test Analysis Results

Before conducting the MANOVA test, prerequisite tests were first carried out, namely the Multivariate Normality test and the Homogeneity of Variance-Covariance Matrix test. Multivariate normality test is conducted to ensure that the data from both dependent variables used come from a normally distributed population. The multivariate normality test uses the Kolmogorov-Smirnov test, which assesses whether the data come from a normally distributed population. Data comes from a normally distributed population if sig. > 0.05. The results of the multivariate normality test are shown in Table 15.

Table 15. Multivariate Normality Test Results

Variabel	Class	Test Form	Kolmogorov Smirnov		Information
			df	Sig.	
Science Literacy	Experiment	Pre-Test	36	0.169	Normal
		Post-Test	36	0.101	Normal
	Control	Pre-Test	36	0.177	Normal
		Post-Test	36	0.081	Normal
Learning Motivation	Experiment	Pre-Test	36	0.152	Normal
		Post-Test	36	0.200	Normal
	Control	Pre-Test	36	0.158	Normal
		Post-Test	36	0.194	Normal

Based on Table 15 the results of the pretest and posttest science literacy skills in the experimental and control classes are obtained, namely the Sig. value > 0.05 so that H_0 is accepted and H_a is rejected, namely, the science literacy data from the two classes come from a population with a multivariate normal distribution. Then, for the learning motivation data from the experimental and control classes, the Sig. value > 0.05 so that H_0 is accepted and H_a is rejected, namely, the learning motivation data from the two classes come from a population with a multivariate normal distribution.

The next test is the homogeneity test of the variance-covariance matrix, conducted to ensure that the data come from a population with the same variance and covariance. The results of the homogeneity test of the variance-covariance matrix use the Box's Test of Equality of Covariance Matrices to test both variables simultaneously, then continue with the Levene's Test of Equality of Error Variance to test the variance in each variable specifically, the data is said to come from a population with the same variance if Sig.> 0.05. The data from the simultaneous homogeneity test of the variance-covariance matrix are shown in Table 16.

Table 16. Box's Test of Equality of Covariance Matrices Test Results

	Value
Box's M	7.037
F	2.273
df1	3
df2	882000.000
Sig.	0.078

Based on Table 16, the Sig. value is obtained > 0.05, which is 0.078. So that H_0 is accepted and H_a is rejected, this means that the variance-covariance matrix of the variables science literacy ability and learning motivation is from a population with equal variances. Then, to test the variance of each variable specifically, see Table 17.

Table 17. Levene's Test Results of Equality of Error Variance

Variabel	Levene's Test of Equality of Error Variance				
		Levene Statistic	df1	df2	Sig
Science Literacy	Based on Mean	2.707	1	70	0.104
	Based on Median	2.345	1	70	0.130
	Based on Median and with adjusted df	2.345	1	56.882	0.131
	Based on trimmed mean	2.892	1	70	0.093
Learning Motivation	Based on Mean	0.939	1	70	0.336
	Based on Median	1.023	1	70	0.315

Variabel	Levene's Test of Equality of Error Variance			
	Levene Statistic	df1	df2	Sig
Based on Median and with adjusted df	1.023	1	65.963	0.316
Based on trimmed mean	1.000	1	70	0.321

Based on Table 17. it is found that each column of science literacy and learning motivation shows a Sig. value > 0.05, then H_0 is accepted and H_a is rejected. Thus, there is no difference in the variance of science literacy and learning motivation data between the experimental class using the local content E-Module product of *Sebimbing Sekundang* dance and the control class. So it can be concluded that the variance-covariance matrix data of the science literacy and learning motivation variables come from a population with the same variance.

After the prerequisite test is met, the next step is to conduct a MANOVA test. This test is to see the effectiveness of the local content E-Module of *Sebimbing Sekundang* dance in improving scientific literacy and learning motivation of students. The multivariate approach allows to explore the performance of variables against other variables. The criteria for accepting or rejecting H_0 are if Sig. > 0.05 then H_0 is accepted, while if Sig. < 0.05 then H_0 is rejected. The following is the formulation of the hypothesis used in the test

- H_0: There is no significant effect of using the local content E-Module of *Sebimbing Sekundang* dance with the inquiry learning model on the material of the movement system to improve scientific literacy and learning motivation of students.
- H_a: There is a significant effect of using the local content E-Module of *Sebimbing Sekundang* dance with the inquiry learning model on the material of the movement system to improve scientific literacy and learning motivation of students

The results of the MANOVA test data can be seen in Table 18.

Table 18. MANOVA Test Results

Effect	Multivariate Tests					
		Value	F	Hypothesis df	Error df	Sig
Intercept	Pillai's Trace	0.967	2083.663	2.000	141.000	0.000
	Wilks' Lambda	0.033	2083.663	2.000	141.000	0.000
	Hotelling's Trace	29.555	2083.663	2.000	141.000	0.000
	Roy's Largest Root	29.555	2083.663	2.000	141.000	0.000
Class	Pillai's Trace	0.189	16.410	2.000	141.000	0.000
	Wilks' Lambda	0.811	16.410	2.000	141.000	0.000
	Hotelling's Trace	0.233	16.410	2.000	141.000	0.000
	Roy's Largest Root	0.233	16.410	2.000	141.000	0.000

Based on Table 18, the results for Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root indicate a significance level of 0.000. This indicates that the results are <0.05, so there is a significant difference in the scientific literacy and learning motivation of students between the experimental and control classes. In addition, the MANOVA test can also be seen as the effect of using E-Modules on the dependent variable. The test results are shown in Table 19.

Table 19. Tests of Between-Subjects Effects Results

Source	Tests of Between-Subjects Effects	
	Dependent Variabel	**Sig**
Corrected Model	Science Literacy	0.000
	Learning Motivation	0.000
Intercept	Science Literacy	0.000
	Learning Motivation	0.000
Class	Science Literacy	0.000
	Learning Motivation	0.000
Error	Science Literacy	
	Learning Motivation	
Total	Science Literacy	
	Learning Motivation	
Corrected Total	Science Literacy	
	Learning Motivation	

Based on Table 19, the results for the class column on scientific literacy skills and learning motivation were significant. value of 0.00 <0.05, which means that H_0 is rejected and H_a is accepted. This means that there is a difference in scientific literacy skills and learning motivation between the experimental and control classes. Thus, it can be concluded that using E-Modules containing local dance *Sebimbing Sekundang* with the inquiry learning model significantly affects the material on the movement system, increasing students' scientific literacy and learning motivation.

4. Conclusion

The conclusion of this study indicates that the developed E-Module, which includes the *Sebimbing Sekundang* dance, is highly valid for use in biology learning activities. This conclusion is supported by assessments from media and materials experts who confirmed that the E-Module meets the required criteria. Furthermore, the E-Module has proven to be highly practical as a teaching resource, with evaluations from biology teachers averaging 95.71%, placing it in the "very practical" category. Student feedback also supports this finding, with an average response score of 83.5%, which similarly falls into the "very practical" category The use of this E-Module significantly enhanced students' scientific literacy and motivation. This is evidenced by the results of the MANOVA test, which revealed a significant value (Sig.) of 0.00, indicating it is less than 0.05. Therefore, the null hypothesis (H_0) was rejected, while the alternative hypothesis (H_a) was accepted, showing a significant difference in scientific literacy and student motivation between the experimental and control groups. For future research, it is recommended to explore the long-term impact of this E-Module on student learning outcomes and its adaptability across different learning contexts. Additionally, developing similar E-Modules for other subjects could be a focus for future studies to broaden the application of educational technology across various disciplines.

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