

## Green School Module: The practicality test in scientific performance skills training for junior high school students

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Article Information	Abstract
<p><b>Keyword:</b> Practicality; green school module; scientific performance skills</p> <p><b>Kata Kunci:</b> Kepraktisan; modul sekolah hijau; keterampilan unjuk kerja</p>	<p>This development research aims to describe the green school module on the scientific performance skills of junior high school students. The stages of development include self-evaluation, expert test, individual test, small group test, field test. The research subjects were five students for the response test and three observers for the green school module implementation test for the scientific performance skills of junior high school students. The type of data is descriptive data, using the instrument implementation of the module and student responses are used for the practicality of the content and the practicality of expectations. Technical data analysis was carried out in accordance with the objectives of the research which included the practicality of the module. The results showed that the module that had been developed was stated to be very practical based on the individual test. This module was stated to be very good with an average of 89.10%. The module is declared practical because the results of student responses with an average value of 88.34% with very good criteria, the results of the implementation of the module with an average value of 88.10% with criteria strongly agree. Based on this, the developed module is very practical to use and makes it easier for students to learn.</p>
<p><b>History:</b> Received : 20/12/2021 Accepted : 31/01/2022 Published : 07/02/2022</p>	<p><b>Abstrak</b></p> <p>Penelitian pengembangan ini bertujuan untuk mendeskripsikan modul sekolah hijau pada keterampilan unjuk kerja ilmiah siswa SMP. Tahapan pengembangan meliputi evaluasi diri, uji ahli, uji individu, uji kelompok kecil, uji lapangan. Subjek penelitian ini adalah lima siswa untuk tes respon dan tiga orang pengamat untuk tes implementasi modul sekolah hijau untuk keterampilan unjuk kerja ilmiah siswa SMP. Jenis datanya adalah data deskriptif, dengan menggunakan instrumen implementasi modul dan respon siswa digunakan untuk kepraktisan isi dan kepraktisan harapan. Teknis analisis data dilakukan sesuai dengan tujuan penelitian yang meliputi kepraktisan modul. Hasil penelitian menunjukkan bahwa modul yang telah dikembangkan dinyatakan sangat praktis berdasarkan tes individu. Modul ini dinyatakan sangat baik dengan rata-rata 89,10%. Modul dinyatakan praktis karena hasil respon siswa dengan nilai rata-rata 88,34% dengan kriteria sangat baik, hasil implementasi modul dengan nilai rata-rata 88,10% dengan kriteria sangat setuju. Berdasarkan hal tersebut, modul yang dikembangkan sangat praktis digunakan dan memudahkan siswa untuk belajar.</p>

## **A. Introduction**

Environmental education that is poured into topics with environmental nuances will be able to provide accurate information so that environmental awareness programs will be more effective (Supardi & Setiahati, 2020). With environmental education, it is also expected that humans or the community can develop knowledge, understanding, skills and motivation that lead to the acquisition of attitudes, values, and mentalities that are needed effectively in solving various environmental issues and problems.

The quality of the environment has undergone changes that need serious handling. One way that can be done is through formal education which is seen as the right mechanism to promote environmental quality so that schools need to provide green school programs to students. Therefore, topics related to the environment in the curriculum so that learning is carried out contextually. According to Irwandi & Fajeriadi (2019), the environment is proven to increase student interest and learning outcomes.

One of the efforts that need to be developed is to use a blueprint for the Green School in guiding students to carry out school environmental management activities in accordance with their daily life experiences. Such experiences have a very critical role in shaping life attitudes, values and behavior patterns towards the natural environment. The method that is considered quite effective is using project-based activities in carrying out environmental improvement tasks in accordance with the 2013 curriculum.

Several studies on schools in implementing the Green School were reported by (Yerimadesi et al., 2017), who reported that the Green School program at SMPN 26 Surabaya could increase students' learning motivation. In line with Hervianto (2018), the Green School program at SMPN Solear Tangerang can increase environmental care attitudes. Yunus & Mitrohardjono (2019) reported that the Green School program at SMP Islam Plus Baitul Ma'al South Tangerang can foster an attitude of caring for the environment. Schools with environmental learning programs such as green schools have a positive impact on student attitudes that are more environmentally friendly (Margalit & Rubin, 2017). However, it has not been reported about the existence of a module in training the scientific work skills of junior high school students. Therefore, it is necessary to develop The Green School module which is suitable for use in junior high schools because at the junior high school level, vulnerable

students do not yet have critical thinking skills that can be trained through green school programs.

Based on the opinion of Khayati (2015) the module is a teaching material that is made systematically using language that is easy to understand according to the level of knowledge and age of students to minimize teacher guidance and encourage student independence in learning. The module has a function as an independent learning tool so that students can learn at their own pace (Harahap & Fauzi, 2017). Based on this understanding and function, the module has advantages including being able to be used as independent teaching materials in order to improve the ability of students to learn on their own (Nurul, 2021).

According to previous studies on module development in an effort to improve junior high school student learning outcomes, it has shown a positive impact on junior high school student learning outcomes, so it is necessary to develop it. Triani et al. (2018) reported the development of an effective module to improve science learning outcomes for junior high school students. In the opinion of Nasution (2016), that the developed module succeeded in increasing the learning outcomes of 75% of junior high school students reaching the minimum completeness criteria. Based on the results of these studies, it has not been reported about the existence of a module in training the scientific work skills of junior high school students. Therefore, it is necessary to develop the Green School module in training students' work skills to be used in junior high schools.

Scientific work skills are all science activities that train and develop scientific skills and scientific attitudes. According to Trihastuti et al. (2019), scientific work is an activity that trains students not only to accept finished concepts, but also requires students to prove how to obtain these concepts. Based on this understanding, scientific work skills are basically students' skills to learn actively through various scientific activities to get a learning concept.

Several studies on scientific work skills in junior high school students have been carried out. Rosadi (2018) reports that the scientific work skills of junior high school students can be grown through learning using an integrated science practicum guide based on guided inquiry. Trihastuti et al. (2019) reported that the scientific work skills of junior high school students could be improved through a problem-based learning model. Learning that encourages active scientific

participation of students such as inquiry is able to accommodate students' scientific work skills (Muqsith, 2021).

Based on the description above, the opportunity for developing a green school-based module is still wide open for the development of a Green School module in training the scientific work skills of junior high school students. Through this research, it is hoped that students will be more concerned about the environment by creating a beautiful, fun learning environment, and an environment as a learning tool for students, especially those in science learning.

## B. Material and Method

The type of research used refers to Tessmer's Formative Evaluation research. Tessmer's formative evaluation design was chosen because it was systematic and suitable for testing the use of modules. Preliminary research was conducted to obtain the initial product, namely the green school module. The initial product design was developed through formative evaluation according to Tessmer's model. The stages of its development consist of 5 steps, namely self-evaluation, expert validation test, one to one test, small group test, and field test test.

In assessing the practicality of a module, there are three parameters tested, namely readability, implementation, and student response. Readability was tested on a one to one test to three students. The implementation and also student responses were tested through a small group consisting of five students and a field test consisting of 20 students in grades VII and VIII which were taken randomly. Based on the results of the one to one readability test, the practicality of the module content was obtained, in addition to the small group test, the expected implementation value or student response was obtained, while the field test obtained the actual implementation value or the actual student response.

## C. Results and Discussion

In detail, the practical results of the green school module are obtained in the data below.

### 1. Student Readability

The practicality of the content of the module aims to determine the extent to which the practicality of the modules used were developed for students who use them during learning. The practicality of the content or student readability test was obtained based on three students which are detailed in table 1.

Table 1 Student Readability test results

Rated aspect	Student			Average
	I	II	II	
1. Curriculum suitability	4	3	4	3,67
2. Accurate and up to date	4	3	4	3,67
3. Clear and concise language	3	3	4	3,33
4. Generating motivation and interest	4	3	4	3,67
5. Generating student participation	4	3	4	3,67
6. Module writing quality	3	4	3	3,33
7. language	3	4	3	3,33
a. Age-appropriate language	3	4	4	3,67
b. The terms are precise and understandable	4	3	4	3,67
8. The images presented are interesting	4	4	4	4,00
9. Content updates (facts, concepts)	4	3	3	3,33
10. Systematic according to the scientific structure	4	4	3	3,67
11. Table according to content (facts/concepts)	3	3	4	3,33
<b>Amount</b>	<b>47</b>	<b>44</b>	<b>48</b>	
<b>Percentage (%)</b>	<b>90,38</b>	<b>84,62</b>	<b>92,31</b>	
<b>Average (%)</b>		<b>89,10</b>		
<b>Criteria</b>		<b>Very good</b>		

(Source: Data Processing Results)

The results of the readability test for the green school module in table 1 show the results with an average of 89.10% in the very good category. The very good category means that the green school module that has been developed is in accordance with the needs of students as seen from

the average percentage value and suggestions that have been revised by researchers. The results of the practicality of the student content indicate that the developed green school module is suitable for further testing in an effort to improve students' critical thinking skills. The results of the student

legibility test (one to one) of the green school module aim to assess the appearance and presentation aspects of the green school module.

The students' readability test phase for the developed module obtained a relatively high score. A good and complex presentation of the content of the module can help students to solve problems empirically. This is also supported by several things including, the content of the developed module is easy to understand, has a clear image complete with a description of the image and so on. Khairoh et al. (2014) states that it will be easy for readers to learn a book with interesting pictures, because the display of pictures can facilitate understanding and strengthen students' memories of a material.

The results of the readability test obtained a very good category, which means that the Green School Module can be understood and the material is easy to apply for students' daily life. This readability test is very important to do so that the Green School Module that has been developed can be in accordance with the conditions of students or readers who will use it for real field learning. The results of the student readability test stage aim to obtain empirical evidence about the feasibility of the initial product on a limited basis (Putri et al., 2020). Khairiyah et al. (2014) said that readability (readability) is a measure of the suitability of the material contained in reading materials developed for readers (students). This is in line with Putra et al. (2021) explains that individual tests are important to do so that the teaching materials developed are in accordance with the conditions of students in the field. In addition, teaching materials according to the needs of students.

Making a Green School Module (Green School) should pay attention to the appearance and presentation aspects for its development. The results obtained from the two aspects of the developed Green School Module get at least very good results. The display should be made as attractive as possible to make it easier for readers to understand the material, because readers will find it easy to study a book with interesting pictures, because the display of images can facilitate understanding and strengthen students' memory on a material (Khairoh et al., 2014). Meanwhile, the presentation of concept material in the Green School Module is carried out in a coherent and systematic manner in order to increase students' interest in learning. This is in line with the Depdiknas (2008) that the presentation of material in a book must be systematic, straightforward, and easy to

understand so that it can foster reader motivation to find out more about the material presented.

According to Khairoh et al., (2014) that the readability test was carried out to obtain data about errors that occurred, poor grammar, wrong spelling, wrong punctuation, and unclear instructions. In addition, it also focuses on intrinsic criteria, such as the suitability of the example, material systematics and ease of use, interesting material, and student satisfaction with the material. It is also explained by Akbar (2013) that validation aims to determine the advantages or disadvantages of relevance, accuracy, linguistics as well as its suitability for student-centered learning.

The results of the student readability test obtained some comments and suggestions from students. To learn one of them is to increase the number of pictures in the Green School Module (Green School). This proves that students expect the modules they will use in science learning can help and make it easier for them to describe types of medicinal plants in an area. Mulyati (2002) explains that pictures or photos in a learning resource function to clarify information, help memory and understanding, provide variety so that it is not boring, and beautify to attract the interest of the reader. So that researchers feel the need to make revisions based on suggestions and comments from students on the Green School Module that has been developed to further refine this product and it is also important to do so that the Green School Module developed can meet the demands of students so that they can learn more optimally with quality teaching materials. The next step is to enter the small group test stage.

## **2. Student Response**

Student responses were obtained from the small group test stage conducted by three students to obtain the expected practical results while the actual practical results were obtained from the field test stage consisting of 20 students. Expected and actual practicality data are presented in Table 2.

Based on the table regarding student response data for the practicality of expectations, the value is 91.33% and the actual practicality shows 88.00% so that the value of both categories strongly agrees. The category strongly agrees means that the developed Green School can help students in the learning process; this is evidenced by the positive response to the developed Green School. So it can be concluded that the module developed is practically used in learning.

**Table 2 Practical Results of Students' Expectations and Actuals**

No.	Rated aspect	Execution	
		Hope	Current
1	a. Attracts attention to focus on self in starting learning	4.45	4.45
	b. Motivating students to be interested in participating in learning	4.10	4.10
	c. Provide a reference for the teaching material to be taught	4.10	4.10
2	a. Clarity of voice in communication with students	4.45	4.45
	b. Mobilize the position of the place in the classroom/practice room	4.80	4.80
	c. Clarity explains the teaching material in the module	4.70	4.70
	d. The activities carried out are in accordance with the activities in the module	4.00	4.00
	e. The learning process reflects teacher-student communication, with student-centred orientation on scientific work skills	4.25	4.25
	f. Group formation	4.45	4.45
	g. Guiding students to discuss and ask questions about the results that have been obtained oriented to scientific work skills	4.70	4.70
	h. Be careful in using time, according to the planned allocation	4.00	4.1
3	a. Conduct an evaluation according to the module	4.25	4.1
	b. Reviewing / summing up the material	4.45	4.45
	c. Clarity explains the teaching material in the module	4.70	4.80
	d. Inform the next teaching material	4.70	4.80
<b>Amount</b>		<b>66.10</b>	<b>66.25</b>
<b>Percentage (%)</b>		<b>88.13</b>	<b>88.33</b>
<b>Overall average (%)</b>		<b>88.23</b>	
<b>Criteria</b>		<b>Very good</b>	

(Source: Data Processing Results)

The results of the average student responses obtained are not much different between the practicality of expectations and the practicality of actual, both of which get the criteria of strongly agree. These results indicate that students respond positively when using the Green School Module (Green School). The Green School Module developed is very easy for students to understand, because the presentation of the material for the Green School Module is accompanied by pictures that are associated with knowledge and adapted to students' experiences. This was stated by Dewi et al. (2010) that teaching materials can be interesting, when using pictures or illustrations that clarify the content of the material that is easily understood by students.

The advantage of the Green School Module that was developed is the presentation of the Green School Module, which is structured in a simple way using popular, simple, concise, and concise language style, so that it attracts reading interest and is easily understood by a wide audience. This is to make it easier for the Green School Module to be studied, not boring, easy to carry anywhere so that it can be studied anytime and anywhere. Learning about tree species diversity using the Green School Module is going well. This is explained by Akbar (2013) that good learning is done interactively, inspiring, fun, challenging and motivating students to participate actively.

The practicality of the product development of the Green School Module (Green School) is very important before the product is used to measure its

effectiveness, the practicality of the product development of teaching materials is not only for the Green School Module (Green School), but also for other types of teaching materials (Dharmono et al. , 2019). Product development is said to be practical if the product is easy for students or teachers to run and is broader than student textbooks (Nieveen, 1999).

### 3. Module Execution

The implementation of the Green School Module (Green School) is one of the data to measure the practicality of the modules developed. This data was obtained from 3 observers who observed the whole and wrote down the results of their observations on the observation sheet provided. The results of observations on the implementation of Green Schools are summarized and presented in table 3.

Based on the results of the data in the table above, obtained a percentage of 88.13% for the implementation of expectations and 88.33% on the actual implementation. From the results of the percentage of actual and expected implementation, it is obtained with very good criteria. The difference between the expected value and the actual which is not too far indicates that the product developed is fixed or "steady" meaning that regardless of the number of subjects using it, it does not affect the expected learning outcomes. Very good criteria means that the green school module developed can help students in solving problems in a lesson and is easy to use. This is

evidenced by the results of the implementation carried out by observers on the developed green school module based on these results indicate that

the green school module developed is practical for use in learning.

**Table 3 High School Students Expectations and Actual Implementation Test Results**

No.	Rated aspect	Execution	
		Hope	Current
1	a. Attract students' attention to focus on starting learning	4,45	4,45
	b. Motivating students to be interested in participating in learning	4,10	4,10
	c. Provide a reference for the teaching material to be taught	4,10	4,10
2	a. Clarity of voice in communication with students	4,45	4,45
	b. Mobilize the position of the place in the classroom/practice room	4,80	4,80
	c. Clarity explains the teaching material in the module	4,70	4,70
	d. The activities carried out are in accordance with the activities in the module	4,00	4,00
	e. The learning process reflects teacher-student communication, with student-centered orientation on scientific work skills	4,25	4,25
	f. Group formation	4,45	4,45
	g. Guiding students to discuss and ask questions about the results that have been obtained oriented to scientific work skills	4,70	4,70
	h. Be careful in using time, according to the planned allocation	4,00	4,1
3	a. Conduct an evaluation according to the module	4,25	4,1
	b. Reviewing / summing up the material	4,45	4,45
	c. Clarity explains the teaching material in the module	4,70	4,80
	d. Inform the next teaching material	4,70	4,80
<b>Amount</b>		<b>66,10</b>	<b>66,25</b>
<b>Percentage (%)</b>		<b>88,13</b>	<b>88,33</b>
<b>Criteria</b>		<b>Very good</b>	

(Source: Data Processing Results)

The implementation of the Green School Module (Green School) is one of the data to measure the practicality of the developed Green School Module. The data obtained from the average on the implementation of expectations and actual each get very good criteria. The Green School Module has very good criteria because it has several advantages including the presentation of language that is easily understood by students and there are supporting materials for learning so that it has a positive impact because students can easily use the developed Green School Module. This shows that the Green School Module that has been developed can be said to be practical so that it is suitable for use in the learning process. In addition, the Green School Module that was developed is expected to be used as a reference for choosing good teaching materials so that they can be used for practical learning to achieve a predetermined learning goal.

The advantage of the Green School Module that was developed is practical to use based on its implementation, on a certain page in the Green School Module that was developed statements were found to explore scientific performance skills. This is in line with Dhamono et al. (2019) that the teaching materials developed must contain statements to explore students' abilities, because with these statements it will make students sequentially or systematically to study part by part

of the material presented for the Green School Module.

## D. Conclusion

Based on the conclusions obtained from the Green School module, the results of the practicality of the content of the modules that have been developed are stated to be very practical based on the individual module test, which is stated to be very good with an average of 89.10%. The results of student responses with an average value of 88.34% with very good criteria, and the results of implementing the module with an average value of 88.10% with criteria strongly agree. Based on this, the developed module is very practical to use and makes it easier for students to learn.

## E. Acknowledgement

The completion of the writing of this journal cannot be separated from the help of several parties. Therefore the authors are very grateful to Author's parents; supervising lecturer Master of Biology Education ULM; administrative staff Master of Biology Education ULM; and Research team. Without the help of the parties above, the writer would not be able to complete the research properly

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