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Development of Lombok Island Environmental Change E-Module to Improve Environmental Literacy and Data Literacy of High School Students

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Abstract

The aims of this study are 1) to determine the characteristics of E-modules; 2) to determine the validity of the E-module; 3) student responses to the E-module; 4) E-module effectiveness in improving student literacy; 5) the practicality of the developed E-module. This type of research is R&D, using the model Brog and Gall. The results showed that the E-module on environmental change on the island of Lombok was declared very valid by expert lecturers with an average percentage, material experts obtained an average score of 77.08% while media experts were 97%. The results of a wide-scale trial of 74 students from each school obtained an average student response of 82%, 82.76% and 83.25%. The results of the N-gain scores from each school showed that there was an increase in student literacy after using the E-module in the learning process, namely 0.64, 0.56, and 0.57. Furthermore, the results of the practicality test questionnaire filled out by biology teachers obtained an average of 82, 82.76 and 83.25 from each school. This study resulted in a valid, effective, and practical E-module in improving the Environmental Literacy and Data Literacy of high school students.

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INTRODUCTION

National education functions to develop capabilities and shape the character and civilization of a dignified nation in order to educate the nation's life, national education aims to develop the potential of students to become human beings who believe and fear God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent, and become a democratic and responsible citizen. This is stated in Law Number 20 of 2003 concerning the National Education System. Based on what is stated in the National Education System, the teacher's role in realizing the implementation of character education must continue to be pursued so that educational goals can be realized properly. Literacy is interpreted as the ability of students to read and write including the ability to understand ideas and ideas obtained visually (videos or pictures), therefore this literacy activity must be implemented in schools as well as possible, so that students have initial capital in learning and developing knowledge (Anggraeni, 2019).

The results of theranking Program for International Student Assessment (PISA)show that students' reading and science competence scores are still relatively low (OECD, 2018). The low percentage of student literacy is a hard slap to the Indonesian education system, therefore the government must be alert to this problem so that students do not experience a decline in literacy. In addition to the government, teachers must also play an important role in shaping and realizing the next generation of the nation who is proficient in the world of literacy, so that the pace of Indonesian education has the potential to form solid knowledge. High literacy ability is very influential on students, especially in obtaining various information related to students' efforts in living daily life (Kharizmi, 2015).

Today's student literacy is very necessary, because improving literacy skills is one of the important factors to realize innovative, informative, reliable and quality human resources. In accordance with the literacy point of view, literacy can be defined as technology literacy, information literacy, critical thinking, sensitive to the environment. A person is said to be literate if he is able to understand something from reading the right information and doing something based on his understanding of the contents of the reading (Naibaho, 2007). The wider the scope related to the discussion of literacy, the teacher must be more intense in improving literacy in schools. Concern for the world of literacy will give birth to a generation that has broad and competent knowledge, especially in biology subjects.

Biology subject on environmental change material in class X at least students are required to master several forms of literacy, namely environmental literacy and data literacy. This literacy will lead students to be more concerned about the environment. According to the Environment Education and Training Partnership (EETAP) states that someone who is environmentally literate if he knows what he will do for the environment (NAAEE, 2011). This can explain that students' understanding of the environment through various information from accurate data will develop a caring attitude towards the environment, so that students not only take advantage of the environment but students have the ability to overcome problems related to the environment. If these two forms of literacy are applied by Biology subject teachers to environmental change material, then students' knowledge related to the environment will be better, especially on students' environmental literacy skills.

According to McBeth & Volk (2009), students' environmental literacy ability can be measured through four components, namely: (1) Environmental knowledge which includes the basics of the environment; (2) Attitude towards the environment which includes views on the environment, sensitivity to environmental conditions, and feelings towards the environment; (3) cognitive skills which include identification of environmental problems, environmental analysis and implementation of planning; and (4) behavior that includes concrete actions towards the environment. This is in line with the statement of O'Neil et al. (2020), which states that environmental literacy is an integral part to produce an understanding that emphasizes that humans are part of a global community, all actions and decisions made locally by individuals or communities have an impact on the environment. Therefore, as part of the community, students must be prepared as the next

generation or as agents of change in creating a beautiful environment, so students need to be equipped with environmental literacy skills.

The material for environmental change in the class X Biology subject aims to instill awareness in students so that they can respect and protect the environment. To achieve this, data literacy is needed because environmental literacy alone is not enough. Data literacy is assumed to be a prerequisite for the implementation of effective data-based decision-making in schools so that it affects the effectiveness of data use for student success (van Geel et al., 2017 and Yang, 2020). Mandinach, Honey, Light, & Brunner in the research journal Mandinach & Gummer (2013) said that data literacy is a special skill and knowledge base that enables educators to turn data into information and ultimately into actionable knowledge.

However, in reality what the researchers found in most schools in the research area, environmental and data literacy was still low. As evidenced by the inability of students to apply environmental change material in their daily lives, many students do not care about the surrounding environment, littering and destroying the environment around the school. These negative habits if allowed to continue will lead to non-normative behavior that will cause damage to the environment (Morgado et al., 2020).

In addition to the factors mentioned above, the teacher's efforts in instilling literacy in students are still not maximal, because in the learning process the teacher is still focused on students' understanding of environmental change material without having to instill literacy skills in students. Teachers also still use conventional modules, namely printed modules. Most of the students have difficulty understanding conventional modules because they are not interactive, so that the impression of student learning is quite boring.

In response to this, the researchers took the initiative to develop an interactive and interesting E-module. E-Module is a learning media that is designed systematically and attractively, then uses an electronic version so that it can be accessed via electronic devices such as computers, laptops, tablets or even Android. In line with the statement of Resita & Ertikanto (2018) that E-modules are packaged in multiple representations in the form of videos, animations, or multimedia which provide opportunities to provide accessible and systematic material. So in an effort to increase student literacy, it is necessary to have interesting, interactive E-modules and the materials are integrated with local potential.

Local potential-based learning is very important to be applied by teachers in the learning process, it is useful for increasing students' knowledge and understanding as well as a medium in instilling a sense of love for local potential in their area, planting positive characters according to the noble values of local potential and equipping students to face all problems. outside of school (Shufa, 2018). In line with what was expressed, Utari et al. (2016) that local potential values will help students understand each concept in the material so that the knowledge acquired by students is not only limited to knowledge, but students can implement it in form of practice outside of school or in everyday life.

Applying local potentials in learning biology material for class X about environmental change is very possible because in Lombok itself there are many environmental changes that can be used as content and additional material on environmental change materials. There are several environmental changes that occurred in Lombok, among others, the impact that occurred due to the 2018 earthquake, environmental changes due to gold mining, environmental changes due to road expansion and environmental changes due to the large number of tourists who come to travel to Lombok every year. If local potential is applied in the learning of environmental change material, the literacy skills of students will increase, it can be seen from the ability of students to respect and protect the surrounding environment. According to Jayanti (2018), the application of local excellence can be used as a source of learning, in an effort to increase students' understanding of local potentials related to the social, geographical, regional culture and develop attitudes and behaviors to preserve existing resources in the area. So the statement can be concluded that the local potential of the area can be integrated in biology learning and poured in the form of learning media in the form of E-modules so that it can create interesting and interactive learning.

The 2013 curriculum, emphasizes application-based learning in everyday life. The form of learning carried out is by confronting

students with real objects related to learning materials. The suitability between student needs and contextual learning materials needs to be considered by the teacher, considering the very diverse characteristics of students based on social, environmental, and cultural values in society (Situmorang, 2016). The integration of local potential in important biological done as a form of learning that is more contextual and bring students closer to the object, the reality of life (Kusumawardani et al., 2020).

So in this case the researchers work on improving the literacy of students by utilizing local potential as one of the references and sources in making E-modules, the aim is to support the effectiveness and quality of learning on environmental change materials and improve students' literacy skills. Therefore, it is necessary to conduct a research entitled "Development of E-module on Environmental Change on Lombok Island to Improve Literacy of High School Students".

METHODS

The type of research used is education research and development, namely developing an E-module on environmental change on the island of Lombok. The design used in this research is the development design proposed by Borg and Gall. The development method, Borg and Gall (2003) modified by Hakim (2019), consists of ten development steps:

1. Preliminary
   A preliminary study was conducted to analyze the need to find potential problems in the environment and potential problems faced by teachers in an effort to improve student literacy.
2. Preparation of Product The Drafts
   Preparation of product drafts is the stage of preparing E-modules that have not been tested based on potential problems that have been found. The draft of the E-module product is made according to the characteristics of the students and the learning objectives to be achieved.
3. Design Validation
   At this stage, the product design results are given to experts, namely media experts and biological material experts. Consultation with experts is carried out to get input related to the developed E-module. The data from the assessment of the feasibility of the E-module product was analyzed descriptively, as in Table 1.

Table 1. Validation Criteria E-module environmental change

Score (%)	Criteria Valid
76-100	Valid (no revision needed)
56-75	Sufficiently valid (no revision needed)
40-55	Less valid (revision)
0-39	Invalid (revision)

$$P = \frac{\Sigma X}{\Sigma X_i} \text{ X } 100\ \%$$

P =Percentage sought

ΣX =Number of Respondents' Answers

ΣX_i =Total Ideal Value

4. Design Revision Design
   Revisions are carried out based on the results of the assessment and input from experts, namely material experts and media experts.
5. Limited trial
   Limited trial is a product trial with a limited scale or a small sample trial, consisting of 30 grade X students from 3 schools.
6. Revision of Limited Trial
   Results The revised results of the limited trial are improvements of product weaknesses found in improving student literacy, found from the results of experiments that have been carried out in limited trials.
7. Wider trial
   A wider trial is a trial that uses a larger sample than the sample on a limited scale trial. The results of this extensive trial are used as a reference in the process of finalizing the product developed, namely a product in the form of an E-module for environmental changes on the island of Lombok. This wider

trial phase was carried out on 75 students of class X from 3 schools. The criteria for the percentage of student responses can be seen in Table 2.

Table 2. Criteria for Student Response Questionnaire Data

Score (%)	Criteria
76-100	Very Agree
56-75	Agree
40-55	Disagree
0-39	Very Disagree

$$P = \frac{F}{N} \text{ X } 100\%$$

Description:
P= Percentage
F= Frequency/ number of respondents' answers
N= Number of respondents

8. Product Revision
   The essence of this product revision stage is to improve the product based on the results of a wider trial, this product improvement is deemed necessary for more accurate product development.
9. Practicality Test
   The practicality test phase is the final stage of developing an E-module for environmental change on the island of Lombok. This practicality test was conducted on Biology subject teachers, who were asked to respond by giving a practicality questionnaire. The practicality criteria for determining the practicality of the product can be seen in Table 3.

Table 3. Practical criteria

Score (%)	Category
86 – 100	Very practical
71 – 85	Practical
56 – 70	Quite practical
41 – 55	Less Practical
≤25 – 40	Not Practical

$$\text{Practicality} = \frac{\text{Total Score Obtained}}{\text{Maximum Total Score}} \text{ X } 100\%$$

Furthermore, the formula used to test the effectiveness of the E-module is the N-gain formula, this is done to determine whether or not there is an increase in literacy in students after the learning process using the E-module Environmental change. The gain index criteria for the E-module effectiveness test can be seen in Table 4.

Table 4. Gain Index Criteria

Criteria	Category
$g > 0.7$	High
$0.3 < g \leq 0.7$	Medium
$g \leq 0.3$	Low

$$\text{Index gain} = \frac{\text{Score postest} - \text{Score pretest}}{\text{Score Ideal} - \text{Score pretest}}$$

This development research was conducted on students of class X MIPA SMA NW Anjani, SMA NW Suralaga and MA Muallimin NW Anjani.

RESULTS AND DISCUSSION

Characteristics of Lombok Island Environmental Change E-module

Table 5. Characteristics of Lombok Island Environmental Change E-module

No	Characteristics
1.	The e-module consists of several parts including the identity of the e-module, introduction, guide to the use of the e-module, table of contents, basic competencies and indicators, concept map, apperception, description of environmental change material, assignments, glossary, bibliography, and about the compilers.
2.	Material E-module is contacted to associate with the local potential or environmental changes in Lombok
3.	E-module presents the actual information to increase knowledge and literacy of students in the feature "Before you know"
4.	E-Module provides a task that serves to train literacy data and literacy student environment .
5.	The videos used in the E-module are mostly videos of environmental changes that have occurred in Lombok.
6.	Most of the images used in the E-module are pictures of environmental changes that have occurred in Lombok, some of which were taken by the researchers themselves.
7.	The e-module provides a link that is directly connected by the internet network as a student exploration material in supporting the improvement of student literacy

The characteristics of the Lombok Island environmental change E-module that was developed has the advantage that it is an interactive learning medium for students, compared to ordinary print modules, this E-module is far superior because this E-module can be used by students through electronic devices such as android, laptops and computers so that it can make it easier for students to learn and explore related to environmental changes on the island of Lombok. This e-module is equipped with pictures, most of the pictures used in this e-module are taken from cases of environmental change in Lombok. In addition to being equipped with pictures, this E-module is also equipped with videos related to environmental changes in Lombok, the videos are sourced from YouTube which the researchers took to complement the content on the E-module. This e-module developed has an attractive appearance, pictures and videos of environmental changes in Lombok are able to reflect students' thoughts that protecting the environment is very important, in addition to growing students' awareness of the environment, this E-module can also foster student interest and motivation in learning. The display of the E-module learning media for environmental changes on the island of Lombok as shown in Figure 2.

The criteria that the researcher has mentioned above indicate that the developed E-module can be an effective learning medium for students to learn independently. These results are in accordance with Winatha's research (2018) which states that the interactive E-module is equipped with material exposure, videos, animations and feedback that can make students learn independently.

Validation of the E-module on environmental change on the island of Lombok

The validity test of the E-module on environmental change on the island of Lombok includes material validation and media validation. The results of the E-module validation test are presented in Table 6.

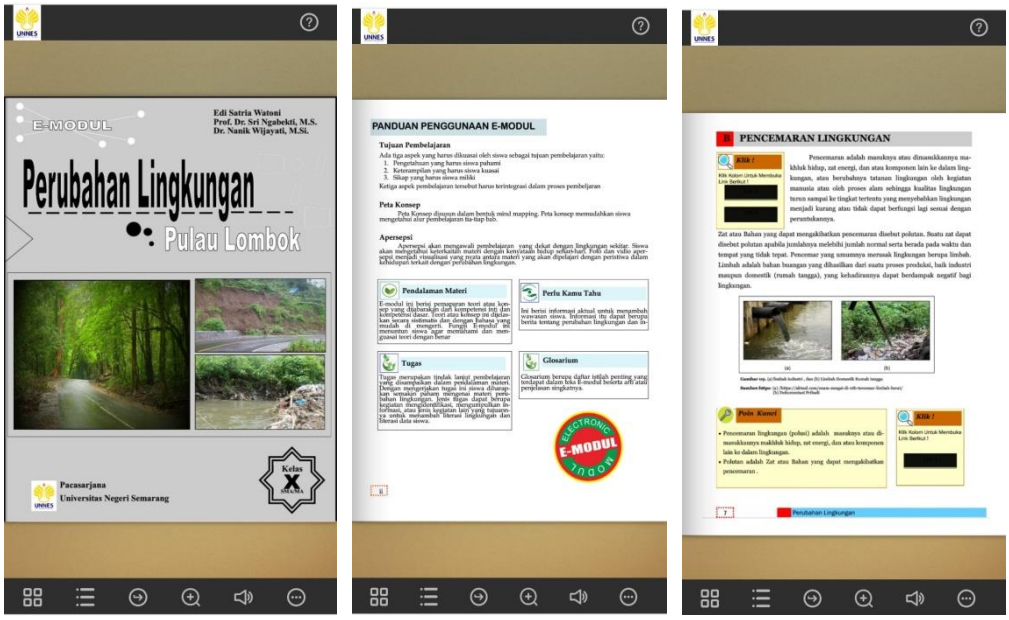

Figure 2. Lombok Island Environmental Change E-Module

Table 6. Validation of Lombok Island Environmental Change E-module

Expert	Aspect assessed	Score (%)	Criteria
Material	Feasibility of Content	75	Quite valid
	Feasibility Presentation	83	Very valid
	Feasibility Language	75	Quite valid
	Feasibility Contextual	75	Quite valid
Media	Text Message Design	96	Very valid
	Picture Message Design	100	Very valid
	Video Message Design	100	Very valid
	E-Module Organizing	92	Very valid
Average		87	Very valid

The material expert stated that the E-module was very valid because the E-module developed was in accordance with the learning objectives on environmental change material, the material expert stated that the E-module developed had material compatibility with KD, had material accuracy, material updates and encouraged student curiosity. The value of the feasibility aspect of the presentation of this E-module got a good score by material experts such as the assessment of the coherence of concepts, task questions at the end of each learning activity, glossary, bibliography, student involvement in each learning process, the relationship between the material taught and the situation. students' real world.

The material expert gave a good score on the E-module that was developed because it was in accordance with the development of students, namely it was in accordance with the level of students' emotional development. These results are in accordance with research Idrus et al (2020) which states that emotional intelligence can be developed through the application of character education to students. The material expert lecturer also gave good marks because the developed E-module has activities that support the formation of environmental care characters and can increase students' environmental literacy. These results are in accordance with the research of Marisa et al (2020) and Trian et al (2013) which states that students will easily understand the material and have an attitude of caring for the environment if they are able to maintain and preserve the surrounding environment and E-modules based on environmental care characters are used in the learning process.

Media experts stated that the developed E-module has a very high level of validity so that it is suitable for use in the learning process on environmental change material. The E-module which was declared feasible by media experts is in line with previous research by Putra et al (2017) and Sulaiman et al (2018) which stated that the results of the expert validation questionnaire showed the level of achievement of the E-module to be continued in learning, because the subject matter available in the E-module is suitable for use in learning and the validity of media experts and material experts is categorized as valid so that learning media can be used in learning.

The E-module assessment from two experts showed that the developed E-module was very valid to be applied to the biology learning process on the topic of environmental change. These results are in accordance with research Li *et al* (2016) the e-module is able to provide information around students and has a module format that ensures consistent delivery of information as a component of continuing education.

The E-module assessment from two experts showed that the developed E-module was very valid to be applied to the biology learning process on the topic of environmental change. Suggestions and improvements to the E-module can be seen in Table 7.

Table 7. Suggestions and Improvements to Change E-module Lombok Island Environmental

Expert	Comments/Suggestions
	It's better if the sound of the book is removed, it's quite disturbing
	If you give it a soft voice
Material	The E-modules made are good and can be continued for learning materials for students, multiply the material related to the environment where students live so that it is easier to understand
	In general it is good
Media	The Preface has been replaced with a PREFACE
	The layout guide page has been rearranged, so that there is no empty space.

Student Responses to Lombok Island Environmental Change E-module

E-module After being validated by material and media expert validators, the next stage is the test phase for students. The trial phase was carried out twice, namely limited-scale trials and large-scale trials. In the limited-scale trial phase, the researcher took a sample of 30 students from 3 schools, consisting of 10 students from each school. The results of student responses in small-scale trials can be seen in Table 8.

Table 8. Student Responses in Limited-Scale Trials

School	∑ Student	Score (%)	Criteria
MA Mu'allimin NW Anjani	10	72.92	Agree
SMA NW Anjani	10	74.17	Agree
SMA NW Suralaga	10	74.58	Agree

In a limited-scale trial, students were asked to fill out a student response questionnaire that had been prepared by the researcher. In the limited-scale trial phase, the average score from each school was included in the agreed criteria. Based on the value of the student response questionnaire, it can be concluded that students agree to the use of E-modules in the learning process.

Departing from student approval on a limited-scale trial of the use of E-modules, the E-modules can be tested on a wide scale. The results of student responses on a wide-scale trial can be seen in Table 9.

Table 9. Student Responses in the Large-Scale Trial

School	∑ Student	Score (%)	Criteria
MA Mu'allimin NW Anjani	25	82	Very Agree
SMA NW Anjani	25	83.25	Very Agree
SMA NW Suralaga	25	86.00	Very Agree

A wide-scale trial was conducted on a larger sample consisting of 75 students from 3 schools, consisting of 25 students from each school. The broad-scale trial stage obtained the average value of the student response questionnaires for each school, belonging to the criteria for strongly agree. The results of the analysis of student responses to the E-module showed a positive response so that it could be used as a reference in the process of finalizing the product being developed, namely a product in the form of an E-module for environmental changes on the island of Lombok. This is in line with the research by Fausih & Danang (2015) that the developed E-module is feasible to be implemented as an effective learning media based on the results of limited and wide scale trials. It can be concluded that the acquisition of the E-module trial indicates that students can use the E-module well and are able to understand the contents of the E-module well.

The positive response from these students is due to the use of learning in the E-module using a contextual approach, namely providing examples of environmental change events that exist around the island of Lombok, so that students have a higher interest in learning and affect students' cognitive understanding of the environment. This is in line with the research of Sulistyawati et al (2019) the development of learning media based on daily events can provide contextual insight, be able to improve cognitive abilities, and motivate students to learn so as to provide real experience in learning the material.

In addition to the comments that the researchers mentioned above, students also commented a lot about their ease of accessing the E-module because this E-module can be accessed using a laptop, android or smartphone so that students can access the E-module wherever and whenever they are. can enable students to learn independently. This is in line with the research of Liana et al (2019) that the development of learning media in the form of an Android-based interactive E-module is appropriate to be used as an effective learning medium so as to improve students' understanding of concepts.

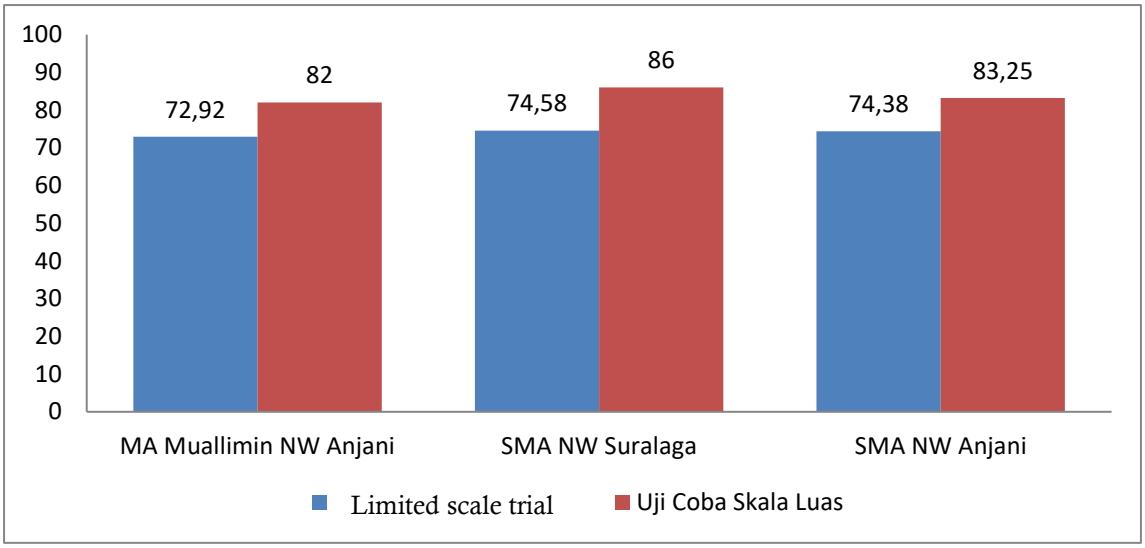

Figure 2. Results of limited-scale trials and wide-scale trials of E-modules

The Effectiveness of the Lombok Island Environmental Change E-Modul in Improving the Literacy of High School Students

Effectiveness is the impact that arises from an action (Mutmainnah , Aunurrahman, 2019). Based on the opinion above, the research on the use of the E-module on environmental changes on the island of Lombok was tested to what extent the impact on increasing student literacy was tested. E-modules are said to be effective if they can have a positive impact on increasing student literacy, namely data literacy and environmental literacy.

E-modules that have been declared valid by material experts and media experts are then implemented in the learning process on environmental change materials as learning media in class X MIPA SMA NW Anjani, SMA NW Suralaga and MA Muallimin NW Anjani, a total of 75 students. The purpose of this implementation phase is to test and measure the effectiveness of the E-module in improving and improving student literacy, namely environmental literacy and data literacy. The effectiveness test of the E-module on environmental change on the island of Lombok was carried out by giving environmental literacy test questions and data literacy to students. There are 37 multiple choice questions on this test. The 37 items have been tested for validity, reliability tests, and difficulty level tests. To determine the effectiveness c Large scale trial archers conducted a pretest (before the implementation of the E-module) and posttest (after the implementation of the E-module). Based on the findings obtained from theresults pretest and posttest, students experienced an increase in environmental literacy and data literacy after implementing E-modules as learning media in the learning process on environmental change materials. Results for Pretest and

posttest Environmental Literacy Students can be seen Table 11.

Table 11. Results of pretest and posttest Environmental Literacy Students

Aspect	Aspect Average Value of Environmental Literacy					
	SMA NW Anjani		SMA NW Suralaga		MA Muallimin NW Anjani	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
L1	60	90	54	92	54	93
L2	62	89	47	79	53	84
L3	61	85	65	85	66	85
L4	61	84	79	89	72	87
Average	61	87	61	86	61	87

Description:
L1 = Knowledge
L2 = Cognitive skill
L3 = Behavior
L4 = Attitude

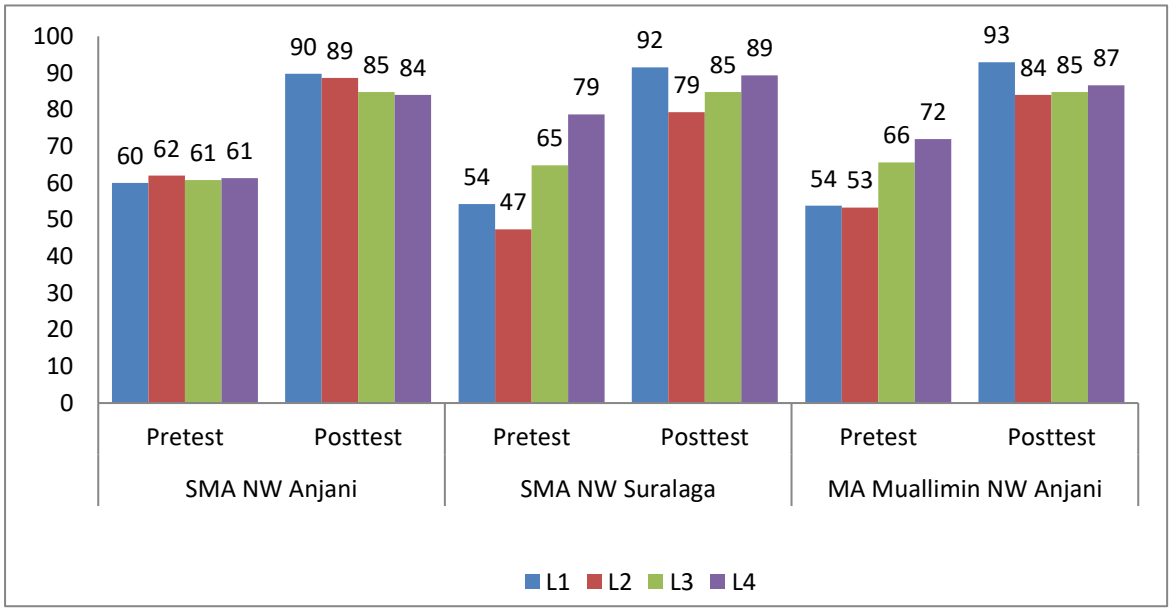

Figure 3. Results of pretest and posttest Environmental Literacy Student

Furthermore, the results of the pretest and posttest data literacy in each school. Results of Pretest and posttest the data Literacy Students can be seen Table 12.

Table 12. Results of pretest and posttest Data Literacy Students

Aspect	Aspect Average Value of Data Literacy					
	SMA NW Anjani		SMA NW Suralaga		MA Muallimin NW Anjani	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
D1	47	79	64	76	64	85
D2	64	80	50	64	48	78
D3	48	79	36	72	36	75
D4	68	89	43	75	40	81
D5	65	93	47	92	55	84
Average	58	84	48	76	49	81

Description:	D3 = Reading, interpreting data
D1 = Understanding data	D4 = Managing data
D2 = Finding data	D5 = Using data

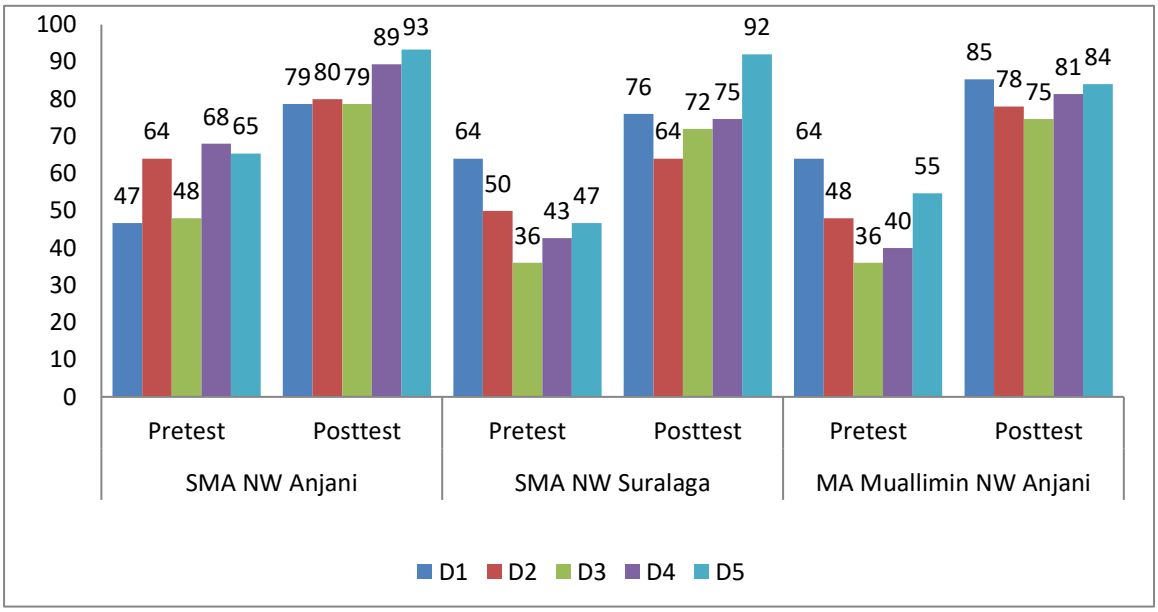

Figure 4. Results of pretest and posttest Data Literacy Students

Based on Tables 11 and 12, thevalues were pretest and posttest also tested with gain (N-gain). The description of N-gain for each aspect of environmental literacy and data literacy is listed in Table 13.

Table 13. Description N-gain pretest and posttest Environmental Literacy and Literacy Student Data

Scool	Pretest	Posttest	N-Gain	Criteria
SMA NW Anjani	59.78	86.38	0.64	Medium
SMA NW Suralaga	54.05	82.81	0.56	Medium
MA Muallimin NW Anjani	54.81	85.30	0.57	Medium

The increase in student literacy based on the N-gain analysis showed that student literacy increased after the use of the E-module, indicating a significant difference between the pretest and posttestresults, the results can be seen from the increase in student literacy in the posttest. The N-gain test was conducted to determine the level of improvement in each aspect of environmental data literacy and data literacy. The description of N-gain in table 13 shows that student literacy in three schools, namely SMA NW Anjani, SMA NW Suralaga and MA Muallimin NW Anjani has increased in the medium category. The increase in student literacy occurs because students learn to use the Lombok Island Environmental Change E-module which provides an interesting explanation of environmental change material.

Another reason is that in each learning process students follow the activities contained in the E-module such as doing assignments and exploring using *the links* that have been prepared in the E-module. These results are in accordance with the research of Narut & Supradi (2019) which states that activities in the form of tasks in which there are questions can help students solve or solve a problem.

Practical Test of Lombok Island Environmental Change E-module

The practicality questionnaire filled out by the teacher aims to obtain information about the practicality of the Lombok Island environmental

change E-module that was developed. The results of the E-module practicality test can be seen in Table 14.

Table 14. E-module Practicality Test Results

School	∑ Teacher	Score (%)	Criteria
Guru Biologi MA Mu'allimin NW Anjani	1	95.00	Very practical
Guru Biologi SMA NW Anjani	1	97.50	Very practical
Guru Biologi SMA NW Suralaga	1	97.50	Very practical
Average		96.67	Very practical

Practicality test questionnaires were given to biology teachers from each school, namely biology teachers for class X MIPA SMA NW Anjani, SMA NW Suralaga and MA Muallimin NW Anjani. The results of the teacher's response to the E-module on environmental changes on the island of Lombok showed a very good response to the use of the E-module so that it deserves to be said as an effective learning medium in the learning process. The results of the questionnaire analysis of the Practicality of E-modules obtained very good results from each teacher, namely obtaining an average of 96.67 belonging to the very practical criteria, these results indicate that the E-module on environmental changes on the island of Lombok is very practical to be used by users as learning media. which is easy to understand by users. These results are in accordance with the research of Siti Muyaroah (2020) and Adam (2015), which state that the learning media developed must be operable, understood and easily understood by students and can help and facilitate teachers in delivering subject matter to students.

The purpose of the practicality test is to determine the ease of users in using E-modules as an effective and interactive learning medium in improving environmental literacy and student data literacy. In line with the statement of Annisa *et al* (2020) which states that the practicality of learning media is one of the conditions that must be met so that it is easy to understand and use by users.

CONCLUSION

The e-module on environmental change on the island of Lombok was declared very valid by material experts and media experts with a very valid category. Based on the results of the scale trials limited-and wide-, the developed E-module is feasible to be implemented as an effective learning medium in the learning process. Based on the analysis of N-gain, it is known that students' literacy has increased after the use of the E-module, indicating a significant difference between the results of the pretest and posttest, with the N-gain being in the moderate category. Then the results of the questionnaire analysis of the practicality of the E-module obtained very good results from each teacher, these results indicate that the E-module for environmental change on the island of Lombok is very practical to be used by users as a learning medium that is easy to understand and understand by users.

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