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An Analysis of Needs Response to the Development of E-Module Material Elasticity and Hooke Law at Lebong Regency High School

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Abstract: The purpose of this study is to analyze the response of needs to the development of E-modules material elasticity and hooke law in Lebong Regency high school. This research is part of the R n D research method but is only limited to the needs analysis stage, the sampling technique used is pusposive sampling with data samples in this study, namely 201 students of grade XI IPA and 5 physics teachers in 3 high schools. The data collection techniques used are interviews, questionnaires and observations. The instrument used in this research is an e-module development needs questionnaire sheet for students and teachers. Test results showed that the instrument used was valid and reliable. The results also mentioned that students and teachers at high school in Lebong Regency urgently need the development of E-modules of elasticity and hooke law. With the results obtained from the responses of teachers and students namely strongly agree. Therefore, from these results, researchers hope to contribute to educational practitioners in order to develop teaching materials in the form of E-modules of elasticity and hooke law for students.

Keywords: E-module; Covid Pandemic; Blended Learning

1. Introduction

Entering the 21st century the magnitude of the change in the life of mankind is terrible and shakes the entire order that exists. Circumstances beyond prediction in the form of an outbreak of covid-19 disease have brought urgent changes in various sectors (Ratu Ayu Uswatun Khasanah, Pramudibyanto, & Widuroyekti, 2020), including the education sector (Gede Muhammad Zainuddin Atsani, 2020). Declining sectors certainly require defense and recovery by qualified and adequate human resources. Human resources here can certainly be formed through education, because education is a very important thing for a person's life seseorang (Risdianto, Yanto, Kristiawan, & Gunawan, 2021). Education is the right of every human being (Azwarhadi, 2016) However, with the presence pandemic covid-19 becomes a challenge. That must be faced jointly by a nation (Alami, 2020).

In the process the success of an education cannot be separated from the curriculum. The curriculum that we use today is the 2013 curriculum, where there are several learners' abilities demanded in this curriculum including the ability to communicate, think critically and creatively. Therefore learners must be trained to be able to have critical thinking, creative, communication and collaboration skills commonly known as 4C skills (Critical thinking and problem solving, Creativity, Communication and Collaboration). So that the curriculum must be able to answer these challenges in order to develop the abilities of learners that must be achieved in the learning process. But as a result of this outbreak all elements of education are required to be able to adjust so that the learning process can run as usual, the Ministry of Education which is a stakeholder in the field of Education in Indonesia made a series of learning adjustments to break the chain of spread of covid-19 (Meiwandri, 2020). So that distance learning becomes a solution to overcome difficulties in carrying out face-to-face learning directly. This is to keep the class active even though the school has closed (Devy Herliandry, Nurhasanah, Enjelina Suban, & Kuswanto, 2020).

Recorded until now Indonesia has almost entered the 2nd year since the confirmation of the deadly virus, this must have haunted our learning world. Changes that still apply to this day are learning systems from face-to-face to online (Widiastutik, 2021). Online learning is used in order to achieve standards of education and information technology, the use of computers and smartphones that can facilitate learning because students and teachers can connect with each other (Putri, Sjaifuddin, & Berlian , 2022). But this certainly still feels heavy for

educators and learners because the quality learning process not only involves learners and educators, but also must be supported by many components. One of them also involves the media of interesting teaching materials (Marisa, Yulianti, & Rahman Hakim, 2020). The teaching and learning process will run effectively if supported by the availability of media that support one of them is an electronic module (Puspitasari, Hamdani, & Ridianto, 2020).

According to Rifqi Pratama, the virtual module is a teaching material presented to learners in order to learn independently that is systematically arranged to achieve certain learning goals presented into an electronic format in which there are animations, simulations, images, and navigation that make users more interactive, active, innovative, and fun in the learning process which can lead learners to think critically (Pratama, Masykuri, & Ashadi, 2019), as well as Sapta Desty Sugiharti's statement that E-modules become one of the learning materials that can be used by learners to learn independently and train learners to think in understanding new materials (Desty Sugiharti, Supriadi, & Andriani, 2019). Similarly, Ni Putu Puspita Dewi Palgunadi also confirmed that E-Module can be used for interactive self-learning purposes so as to support the online learning process while the spread of COVID-19 is still ongoing (Putu Puspita Dewi Palgunadi, Gusti Putu Sudiarta, & Made Ardana, 2021).

Therefore teachers in today's digital era must have sufficient knowledge and understanding of technological equipment that has developed. Because of the global demands especially in the world of education to always innovate and creative by utilizing technological advances. As we know that technology is an inseparable part of various aspects of human life. This is certainly also to adjust to the current generation, where in preparing generation Z who were born and grew up in the 21st century is clearly different from previous generations (Elok Youarti & Hidayah, 2018). Based on generation theory, generation Z is a generation that lives in the midst of continuous technological advances, which this generation always relies on technology in terms of communicating, socializing, playing, including also in learning (Dwinggo Samala, Ramadhani Fajri, Ranuharja, & Darni, 2020). So this certainly makes it easier for educators to adjust learning materials or media that can be used when providing interesting learning to students even though the pandemic period still accompanies our education.

Based on the results of observations and interviews at several high schools in Lebong Regency which is one of the districts with the Tubei capital of Bengkulu province, Indonesia. This regency is located at the position of 105º-108º

East Longitude and 02º,65'-03º.60' South Latitude along Bukit Barisan and classified as a Bukit Range area at an altitude of 500-1,000 dpl (Prihatiningrum, Anom Ramawangsa, & Bahri, 2020). Lebong Regency is located at 1010 to 1020 east longitude and 02065' to 0306' south latitude. The area of Lebong Regency is directly adjacent to Jambi Province to the north, Jambi Province and South Sumatra to the east, North Bengkulu Regency to the west and Rejang Lebong Regency to the south (lebong kab.go.id). Although Lebong regency is still confined in the midst of dense tropical forests, it still goes hand in hand with the rapidly evolving technology today. Quoted from Fokusbengkulu that entering the digital era and technological advances, Lebong Regency incessantly innovates to facilitate the performance in educational institutions, the government, and all elements in the community of Lebong regency.

Lebong Regency was also confirmed this covid 19 outbreak although the provincial government still wanted the district to be able to maintain it remained in the green zone so that learning was still done face-to-face, but fate said otherwise until Thursday July 8, 2021 recorded as many as 224 positive cases in Lebong regency. Therefore, in order to break the existing chain of covid 19 spread, the Lebong district government imposed an online learning process and shifts at the school level until an undetermined time. Furthermore, focusing on the pandemic learning process in Lebong regency for the high school level, students have been directed to digital literacy, this is obtained from the results of interviews and observations with the Principal in this district. As stated by Mr. Principal Ferdiyan Midas at SMAN 5 Lebong that currently the school has used e-learning facilities to support online learning facilities. Likewise, it was conveyed by Mr. Andi Candra Principal of SMAN 3 Lebong that the facilities and media used today adjust to online learning such as gmeet, zoom, classroom, wa group, and other supporters.

The Principal of SMAN 1 Lebong also said that learning in this online period is with supporting applications during online learning then through learning videos shared through youtube channels and also learning blogs that can support students' insights on the learning process during online. Online learning must be done by all subjects, not least science subjects, namely physics. Science learning in this case physics is a learning that is considered difficult (Widayoko, 2021) especially for elasticity and hooke law, this is supported by the results of interviews and filling questionnaires with Physics teachers in Lebong Regency judging by the results of daily and semester exams that elasticity material and

hooke law can be categorized as difficult by students. Like a similar statement by E A Firdausi that Hooke's elasticity and law is one of the most difficult materials and needs to be mastered by high school students (Firdausi, Suyudi, & Yulianti, 2020). So that in the learning process, of course, must be prepared media, facilities and teaching materials that can support the ability of students during this online. In order to be able to explore everything he has and be able to think critically in understanding the material.

From some of the above problem descriptions, it is necessary to conduct research with the aim to conduct a needs response analysis to the development of e-modules of elasticity and hooke law in Lebong Regency High School.

2. Methods

This research is part of R&D with the ADDIE model of five phases analysis; design; development; implementation; and evaluation (Fitrianingsih, Yuliani, Inayah Syar, & Nasir, 2021). But this research is only limited to the stage of analysis (analysis), which defines the needs of students in needing teaching materials in the form of e-modules,especially for the physical material elasticity and hooke laws.

This study was conducted in Lebong Regency of Bengkulu province from July to September 2021 with the population taken in this study, namely students of class XI IPA And 5 physics teachers in 3 high schools namely SMAN 1 Lebong, SMAN 3 Lebong and SMAN 5 Lebong. According to Sugiyono "Population is a generalization area consisting of objects/subjects that have certain qualities and characteristics determined by researchers to be studied and then drawn conclusions". "The sample is part of the number and characteristics possessed by the population" (Dian Lestari & Agus Yusmiono, 2018). The sampling technique used is purposive sampling with the sample taken being 201 students XI IPA. Data collection techniques using questionaires, obsevations, and interviews (Giawa, Montessori, & Yusuf, 2021). The questionnaires to find out the level of student needs for the development of e-modules of elasticity and hooke law.. The research instrument used in this needs analysis research is the student's needs questionnaire sheet towards the E-module of elasticity material and hooke law. Needs analysis questionnaires are distributed online in the form of google form platform to grade XI students in high school. The data analysis technique in this study is a quantitative analysis technique and is concluded qualitatively. Quantitative analysis techniques in this case are statistical

measurement of student needs that refer to the answers of research questionnaires filled by 201 students in 3 high schools. Percentages are obtained based on the calculation of the modified likert scale (Sugiyono, 2013).

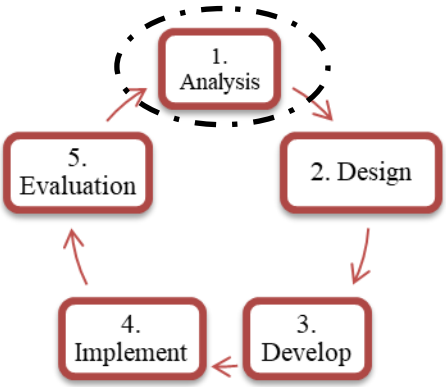

Figure 1 Research design

Infor = Focus of research

The decision of each questionnaire obtained in this study is based on the decision on the research conducted by Eko Risdianto (Risdianto, Yanto, Kristiawan, & Gunawan, 2021). The rule of decision the item is said to be valid if rcount is greater than the value of rtable (r_{count}>r_{table}) and is said to be invalid if rcount is less than the value of rtable (r_{count} < r_{table}). And is Reliable : if r_{count} more is large from the value of r_{tables} (r_{count} > r_{tables}). Not reliable : if r_{count} smaller than from the value of r_{tables} (r_{count} < r_{tables}) (Budiwibowo & Nurhalim, 2016).

For analysis respondent assessment questionnaire, compiled using the criteria of assessment of the likert scale for strongly agreed statements (SS), score = 4 x number of respondent answers, agree (S), score = 3 x number of respondents' answers, disagree (TS), score = 2 x number of respondent answers, strongly disagree (STS), score = 1 x number of respondent answers

Table 1 Retting Scale

Answer Choice	Score
Strongly Agree	4
Agree	3
Disagree	2
Strongly Disagree	1

Then to calculate the presentation of respondents' answers to each statement using the formula:

$$\%X_{in} = \frac{\Sigma s}{S_{maks}} \text{ x } 100\%$$

Information:

%X_in = Percentage of statement answer score on Σs emodul
Σs = Total answer score amount
S_{maks} = Maximum expected score

To interpret the percentage of answer score of each statement and the average percentage of angket according to Arikunto in(Anisa Islami Arifin & Nur Aliyah Sepriyani , 2019) as stated in table 2 which was originally very high, medium high, low, very low. But because here the desired Category strongly agree, the percentage Category are modified to strongly agree, agree, neutrally disagree, and strongly disagree.

Table 2 Score Interpretation

Percentage	Category
80,1% - 100%	Strongly Agree
60,1% - 80%	Agree
40,1% - 60%	neutrally
20,1% - 40%	Disagree
0,0% - 20%	Strongly Disagree

3. Results and Discussion

Student response results

The results of the analysis of student needs based on the first indicator are **not having E- modules** with percentages seen in the 1st and 2nd consecutive diagrams 58 %, 88.3 % for the statements "I always use package books in the

physics learning process" and "I do not have e-modules in the learning process of elasticity and hooke laws".

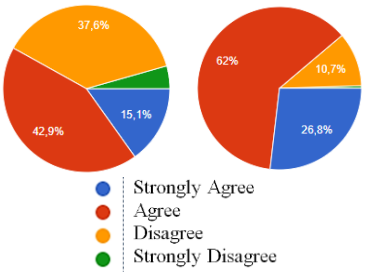

Figure 2 Student Response Diagram Has E-Modules

Based on figure 2 showing the results that students use package books in the physics learning process and do not have e-modules of elasticity and hooke laws, this is in accordance with research conducted by (Fitrianingsih, 2021) that as many as 53 % of students use package books in physics learning. So here researchers know that the use of e-modules has not been used by teachers.

Furthermore, the second indicator is **that learning is still centered on teachers** with percentages on the 3rd and 4th diagrams in a row of 98.6 %, 73.7 % for the statements "I get subject matter more often from teachers" and "I have not played enough active role in the physics learning process".

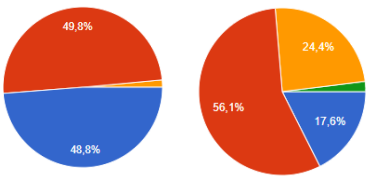

Figure 3 Diagram of current learning student response

Obtained as much as 82.6% that physics learning is still centered from teachers. From the diagram provides information that currently students still do not explore their abilities independently and still receive learning from teachers.

Then to find out how the physics learning that students feel **during online** can be seen in the diagram below with the third indicator that is online learning with percentages in the 5th, 6th and 7th diagrams in a row 82%, 93.2% and 99.6% for the statement "I am still confused to refer to which teaching materials when

online learning", "I need teaching materials that can be accessed online", "I need teaching materials that I can use both online and face-to-face."

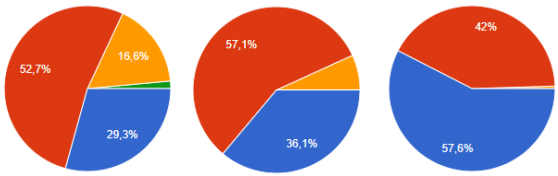

Figure 4 Online Learning Student Response Diagram

From figure 4 provides information that students are still experiencing difficulties during online learning. This is in line with relevant research conducted by (Fitrianingsih, 2021) stated that as many as 95% of students whose learning systems are currently difficult, due to online learning that requires that the internet network remain stable and sult understand online explanations from teachers.

The fourth indicator is **an attractive E-module display** with percentages on the 8th, 9th, 10th and 11th consecutive indicators of 89.3%, 100%, 93.2%, and 98.5% for the statement "the learning resources I like are the ones that have an interesting cover", "the learning resources I want are those that have images according to the material", "the learning resources I want are those that have the appropriate color mix", And "the source of learning I need is to use simple language".

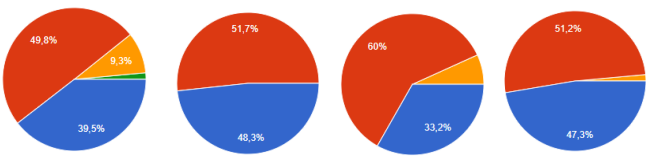

Figure 5 Student response diagram to attractive E-module view

From figure 5 provides information that the source of learning that students want is one that has an attractive look. This analysis is the same as relevant research (Fitrianingsih, Yuliani, Inayah Syar, & Nasir, 2021) which states that 78% of students need interesting worksheets in the physics learning process. Then in an interesting learning resource, of course, it is equipped with various attributes which are also described in the fifth indicator, namely Having e-module

supporting attributes with percentages in the 12th, 13th, 14th and 15th diagrams, respectively 100%, 100%, 99.5%, and 99.5% for the statement "I want teaching materials that have instructions for use to make it easier for me in learning activities", "I want teaching materials that have a description of teaching materials so that it makes it easier for me to conclude the core of learning", "I want teaching materials that have a summary of the material so that I understand the main points of the learning material", and "I like teaching materials that are arranged systematically, neatly and directed specifically to the material".

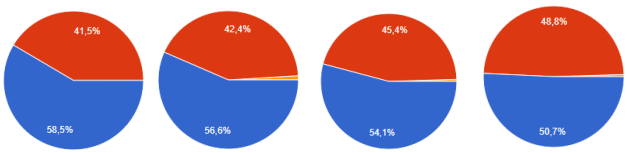

Figure 6 Student response diagram to e-module support attributes

From the diagram provides information that students want the supporting attributes of e-modules to exist so that the student learning process becomes more independently systematic. The use of e-modules has several advantages, namely (a) the content of electronic teaching materials that include materials and practice of presented questions varying not only text but there are images and videos that support learning materials, (b) electronic teaching materials or e-modules can make it easier for students to learn in certain parts as desired, (Puspitasari, Hamdani, & Risdianto, 2020) (c) Tujuam E-module is made so that learners learn independently without or with teacher guidance (Malina, Yuliani, & Inayah Syar, 2021).

Furthermore, of course, so that learning resources are more useful then here the next plan researchers will use the right media according to the current conditions then according to the sixth indicator, namely Using the latest and interesting learning media with percentages on the 16th, 17th, 18th, 19th, 20th, 21st and 22nd indicators obtained 93.7%, 92.7 %, 99%, 98.1 % , 99 %, 95.6 % , 95.1 % for the statement "The learning resources I want are those who have interactive videos in them and can bepled. ay online or in person", "Learning resources What I want is one that can be back and forth like a manual", "The learning resources I want are those that I can access online and offline", "The learning resources I want are those that have various materials or other teaching materials that support learning materials", The learning resources I want are those

that can be used without limits", "The learning resources I want are those that can be accessed at any time via mobile phone", "The learning resources I want are the ones that have a new and exciting look."

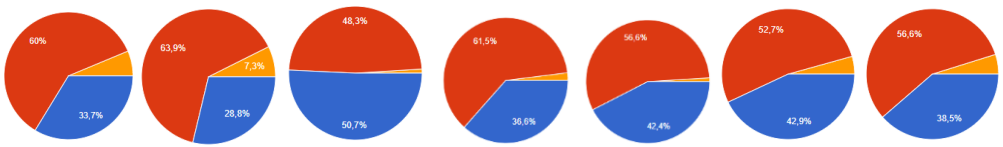

Figure 7 Student response diagram to e-module support attributes

From the percentage generated it is known that students agree if the use of the latest and interesting learning media. Therefore, the media that will be used by researchers is a new software currently Flip PdF Professional. Flip PDF Professional is a feature-rich flipbook maker that has a page editing function that can create interactive book pages and can include multimedia such as images, videos, audio, hyperlinks, and so on (Malina, Yuliani, & Inayah Syar, 2021).

There are many advantages of this application, namely because of its fun and interactive appearance, this multimedia device can include files in the form of pdf, images, videos and animations so that Flip PDF Professional is made more interesting and students can read by feeling like opening a book physically because there is an animation effect where when moving pages will look like opening the book physically and manually. As well as the output generated from apikasi ii is very accessible to students and supports during online learning in the form of links, Qrcode, and physical form that is 3D.

In making the product the seventh indicator **contains indicators of critical thinking ability** with percentages in diagrams 23, 24, 25, 26, and 27 in a row, namely 97.1 %, 99.5%, 100%, 99.5% and 99.5% for the statement "I need teaching materials that can provide simple explanations", "I need teaching materials that can build my basic skills and abilities", "I need teaching materials that can draw conclusions precisely and well", "I need teaching materials that can provide further explanation", "I need teaching materials that can help me in organizing strategies and tactics in learning activities".

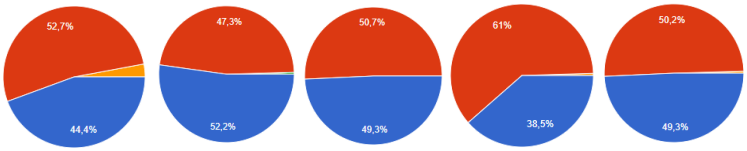

Figure 8 Teacher response diagrams to indicators of critical thinking skills

From the percentage generated that students agree if critical thinking skills are loaded in the e-module to be created. This is in accordance with the demands of the 2013 curriculum students are required to be able to have critical thinking, creative, communication and collaborating skills commonly known as 4C skills (Critical thinking and problem solving, Creativity, Communication and Collaboration).

The questionnaire used in this study is a student needs questionnaire with 4 answer options. The assessment uses a likert scale with the maximum score of the item item is 4 and the minimum is 1. The answer items of the questionnaire statement are tested for validity and reliability to find out if the instrument distributed is valid and reliable. For the results of the calculation of the validity of the data can be seen in table 3.

Table 3. Item Validity Test Results

Number of Items	r-Calculate	r-Table	Description
1	0.467	0.138	Valid
2	0.447		Valid
3	0.535		Valid
4	0.381		Valid
5	0.357		Valid
6	0.608		Valid
7	0.649		Valid
8	0.611		Valid
9	0.708		Valid
10	0.641		Valid
11	0.595		Valid
12	0.724		Valid
13	0.716		Valid
14	0.679		Valid
15	0.679		Valid
16	0.677		Valid
17	0.566		Valid
18	0.624		Valid

Number of Items	r-Calculate	r-Table	Description
19	0.676		Valid
20	0.628		Valid
21	0.609		Valid
22	0,694		Valid
23	0,653		Valid
24	0,639		Valid
25	0,720		Valid
26	0,754		Valid
27	0,644		Valid

In table 3 it can be seen that all items have a t-count value greater than t-table, which means that all items in the questionnaire are valid.

Table 4. Case Processing Summary

Case Processing Summary			
		N	%
Cases	Valid	201	100,0
	Excluded[a]	0	,0
	Total	201	100,0

Table 4 of the Case Processing Summary provides information that there are 27 valid statements (N). No data was released *(Exclude)*. A total of 27 data (N) are processed or 100% of the data is processed. And based on the results of calculations of data reliability can be seen in table 4. In table 5 *reliability statistics* show the results of calculation of data reliability with 27 statement items using cronbach alpha method then obtained a score of 0.932. Then this value (0.932) compares with the value of r product moment or r table. Using the r table distribution to $\alpha = 0.05$, the value = 0.138 is obtained, then compared to Cronbach's Alpha value of 0.932.

Table 5. Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
0,932	27

It can then be decided that the alpha value of 0.932 > 0.138, therefore the data is said to be reliable or reliable. To determine the percentage of student

response to the development needs of e-modules of elasticity and hooke law, data can be processed through table 6.

Table 6 Results Percentage of Response Data to Student Needs

Respondents	Total Score (n)	Maximum Score (N)	percentage $\%X_{in} = \frac{\Sigma s}{S_{maks}}$ x 100%	Category
201 High School Students in Lebong Regency	18247	21708	84,05 %	Strongly Agree

Table 6 provides information that high school students in Lebong Regency strongly agree with the development of e-modules of elasticity material and hooke law, this is indicated by the large percentage obtained at 84.05% of the maximum percentage of 100%. And according to the likert scale interpretation table for data with a percentage of 80,1%-100% categorized strongly agree. Then the data processed with excel obtained the diagram below. Then the data is processed with excel to find out from the overall respondents how many students who choose from the scale strongly agree to strongly disagree and obtained the diagram below.

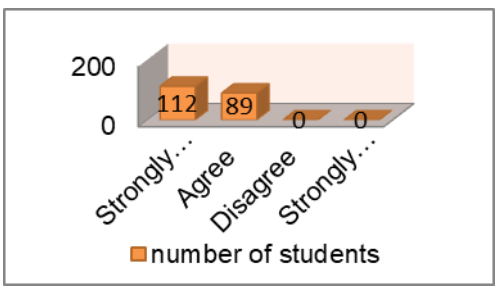

Figure 9 Student number bar diagram against category items

The diagram provides information that from the total number of 201 respondents, namely students at 3 high school levels in Lebong district, namely SMAN 1 Lebong, SMAN 3 Lebong and SMAN 5 Lebong obtained 112 students with categories strongly agree and 89 students with agreed categories while for

the category disagreed and strongly disagreed consisting of 0 students. So from the diagram it can be stated that high school students in Lebong regency strongly agree with the development of e-modules of elasticity and hooke law.

In addition to the questionnaire data analyzed, this study was supported also by interview data conducted with several students in the 3 high schools. From the results of the interview can be written that students have difficulty in understanding the teaching materials provided by teachers during online, as well as when understanding physics learning that is considered difficult by students especially when understanding the material elasticity and hooke laws. So it can be affirmed that students agree if the development of a teaching material that can help students in improving students' critical thinking skills.

Teacher response results

The results of the analysis of teacher needs based on the first indicator are **not having E- modules** with percentages in the 1st and 2nd diagrams in a row of 50%, 50% for the statement "I use printed books when teaching elasticity physics materials and hooke laws", "I have not used electronic teaching materials in teaching elasticity materials and hooke laws".

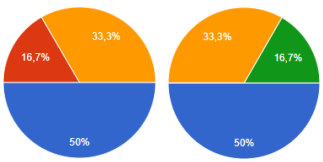

Figure 10 Teacher response diagram has e-module

Based on figure 1 shows the results that of 5 teachers as many as 50% of teachers use package books in the physics learning process and do not have e-modules of elasticity and hooke laws, this is in accordance with research conducted by Ole (Malina, Hadma, & Inayah Syar, 2021) that as many as 95% of teachers use package books in physics learning. So here researchers know that the use of e-modules has not been used by teachers.

The second indicator is **that learning is still centered on teachers** with percentages on the 3rd and 4th diagrams in a row of 50%, 50% for the statement

"Students get more information about the subject matter from me" and "students still act passively in the learning process"

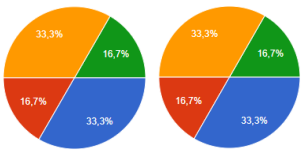

Figure 11 Current teacher's response diagram

The third indicator is **online learning** with percentages in the 5th, 6th and 7th diagrams in a row 66.6%, 100%, and 100% for the statement "When online learning students are still confused to refer to which teaching materials", "I need electronic and online based teaching materials for students to access it more easily", and "I need teaching materials that can be used both when online learning and face-to-face".

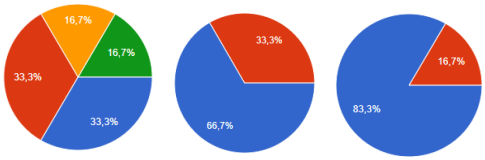

Figure 12 Online learning teacher response diagram

The fourth indicator is **an attractive E-module display** with percentages on the 8th, 9th, 10th and 11th consecutive diagrams of 100%, 100%, 100%, 100% for the statements "I want teaching materials that have the right blend of colors", "I need teaching materials that use simple language", "I need teaching materials that contain images according to the material", and "I need teaching materials with attractive cover displays".

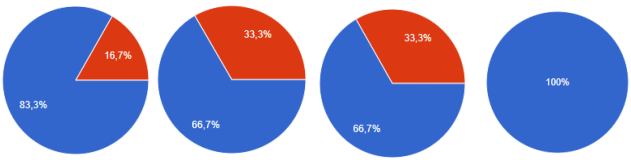

Figure 13 Diagram of the teacher's response to an interesting E-module view

The fifth indicator is to have e-module supporting attributes with percentages in the 12th, 13th, 14th and 15th consecutive diagrams of 100%, 100%, 100%, 100% for the statement "I need teaching materials that are arranged systematically, neatly and directionally specific to the material", "I need teaching materials that have summaries so that students are not confused about learning outcomes", "I want teaching materials that have a description of teaching materials so as to make it easier for students to conclude the core of the training. Elajaran", "I need teaching materials that have instructions for use so that students are not confused about starting learning".

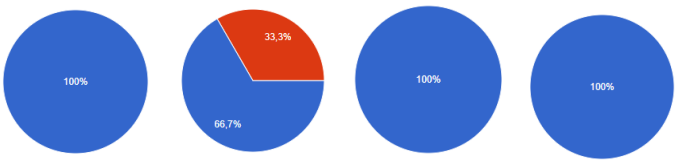

Figure 14 Teacher response diagram to e-module support attributes

The sixth indicator is using the latest and interesting learning media with percentages on the 16th, 17th, 18th, 19, 20, 21 and 22nd consecutive 100%, 100%, 100%, 100%, 100%, 83.3%, and 100% for the statement "The teaching materials I need are those that have interactive videos in them and can be played online", "The teaching materials I need are the ones that can be back and forth like a manual", "The teaching materials that I need are those that can be accessed online and offline", "The teaching materials I need are those that have various materials or related to other teaching materials that support learning materials", "The teaching materials I need are those that can be used by all students and are not limited in their use, "The teaching materials I need are those that can be accessed through each student's mobile phone", "The teaching materials I need are those that have the newness of other teaching materials".The percentage results are in line with relevant research conducted by (Malina, Hadma, & Inayah Syar, 2021) which states e-modules can be a good choice as well, because in terms of visuals can be more interesting than books or printed.

Figure 15 Teacher response diagram to e-module support attributes

The seventh indicator contains indicators of critical thinking ability with percentages on the 23rd, 24th, 25th, 26th, and 27th indicators in a row 100%, 100%, 100% and 100% for the statement "The teaching materials I hope are those that can help me in organizing strategies and tactics in learning activities", "The teaching materials I need are those that can provide further explanation", "The teaching materials I hope for are the ones that can draw conclusions precisely and well", "The teaching materials I hope to be able to build my basic skills and abilities, "The teaching materials I need are the ones that can give a simple explanation".

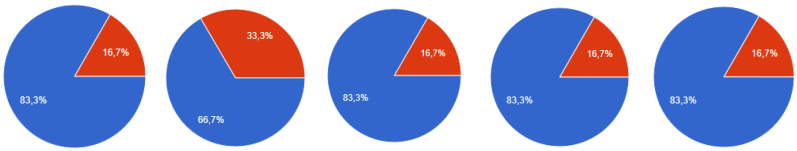

Figure 16 Teacher response diagrams to indicators of critical thinking skills

The questionnaire used in this study is a student needs questionnaire with 4 answer options. The assessment uses a likert scale with the maximum score of the item item is 4 and the minimum is 1. The answer items of the questionnaire statement are tested for validity and reliability to find out if the instrument distributed is valid and reliable. For the results of the calculation of the validity of the data can be seen in table 7.

Table 7. Case Processing Summary

Case Processing Summary			
		N	%
Cases	Valid	5	100,0
	Excluded[a]	0	,0
	Total	5	100,0

In table 7 Case Processing Summary provides information that there are 5 respondents who answered the statement (N) valid. No data was released

(Exclude). A total of 5 data (N) is processed or 100% of the data is processed. Based on the calculation of the results of the calculation of data reliability can be seen in table 8. In table 8 Reliability Statistics shows the results of calculation of data reliability with 27 statement items using cronbach alpha method then obtained a score of 0.785. Then this value (0.785) is compared to the table of value r product moment. Using the r table distribution for α = 0.05, it is obtained a value of = 0.754, then compared to Cronbach's Alpha value of 0.785. The rules of the decision are:

Table 8. Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
0,785	27

Thus it can be decided that the alpha value of 0.785 > 0.754, so that the data is said to be reliable or reliable. To determine the percentage of teacher response to the development needs of e-modules of elasticity material and hooke law, data can be processed through table 9.

Table 9. Results of Response Data to Teacher Needs

Respondents	**Total Score (n)**	**Maximum Score (N)**	**Persentse** $\%X_{in} = \frac{\Sigma s}{S_{maks}}$ x 100%	**Category**
5 high school physics teachers in Lebong Regency	480	540	88,88 %	Strongly Agree

Table 8 provides information that high school physics teachers in Lebong Regency strongly agree with the development of e-modules of elasticity and hooke laws, this is indicated by the large percentage obtained at 88.88 % of the maximum percentage of 100%. And according to the likert scale interpretation table for data with a percentage of 80,1%-100% categorized strongly agree.

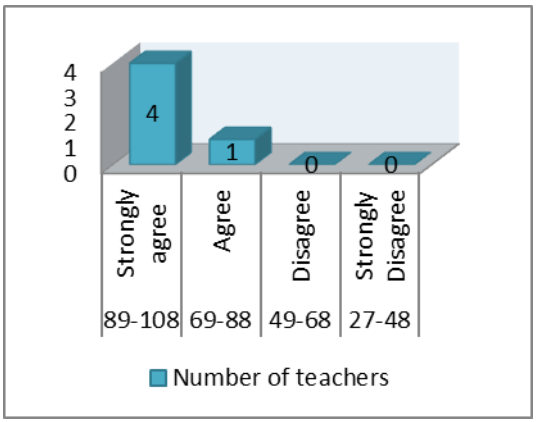

Figure 17 Teacher number bar diagram against category items

The diagram above provides information that from the total number of 5 respondents, namely Physics teachers in 3 high school schools in Lebong district, namely SMAN 1 Lebong, SMAN 3 Lebong and SMAN 5 Lebong obtained 4 teachers with categories strongly agree and 1 teacher with agreed category while for the category disagree and strongly disagree consists of 0 teachers. So from the diagram it can be stated that the high school physics teacher in Lebong district strongly agrees with the development of e-modules of elasticity and hooke laws.

The results of the above research in line with research conducted by (Fitrianingsih, Aulianingsih, & Yuliani, 2021) on The Analysis of The Needs of Electronic Module Development (E-Module) of Islamic Integrated IPA showed that 100% or all students stated that they needed the development of electronic modules (e-modules) as a source of learning. Similarly, the research conducted by (Malina, Yuliani, & Inayah Syar, 2021) on The Analysis of The Needs of E-Module Physics as A Teaching Material Based on Pbl Di Ma Muslimat Nu showed 95.5% of learners were curious and tried to learn to use (e-module) electronic modules. As well as research by (Fitrianingsih, Yuliani, Inayah Syar, & Nasir, 2021) namely on The Analysis of Student Worksheet Development Needs (Lks) Based on Problem Based Learning On Elasticity And Law Hooke Class Xi Material At State High School 1 Palangka Raya showed that 92% of students stated that they needed the development of Problem Based Learning Worksheets.

4. Conclusion

Based on the analysis conducted on the results of the response of the needs of students and teachers of High School Physics in Lebong Regency to the development of e-modules of elasticity and hooke law, it can be concluded that the quality of the response questionnaire to the needs of this e-module is strongly agree. So it can be used to test all the data used. The conclusion of this study is that students and teachers of High School Physics in Lebong Regency strongly agree that the development of E-modules of elasticity and hooke law.

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References

Anisa Islami Arifin, Z., & Nur Aliyah Sepriyani, D. (2019). Pengembangan LKS Matematika Dengan Pendekatan Saintifik Pokok Bahasan Polinomial Untuk Sma Kelas XI [Development of Mathematical Worksheets With a Scientific Approach to Polynomial Subjects for Class XI . Senior High Schools]. *Jurnal Pendidikan Matematika, 3*(1), 9-15.

Azwarhadi. (2016). Implementasi Pembelajaran PAI Serta Penanaman Toleransi Beragama Pada SD Fransiskus Padang Panjang [Implementation of PAI Learning and Instilling Religious Tolerance at Fransiskus Elementary School Padang Panjang]. *JMKSP: (Jurnal Manajemen, Kepemimpinan, dan Supervisi Pendidikan), 1*(2), 1.

Alami, Y. (2020). Media Pembelajaran Daring pada Masa Covid-19 [Online Learning media during the coronavirus disease]. *Jurnal Pendidikan Agama Islam, 02*(1), 49-56.

Budiwibowo, A. K., & Nurhalim, K. (2016). Pengaruh Motivasi Belajar Terhadap Prestasi Belajar Warga Belajar Kejar Paket C. *Journal of Nonformal Education, 2*(2), 168–174.

Desty Sugiharti, S., Supriadi, N., & Andriani, S. (2019). Efektivitas Model Learning Cycle 7e Berbantuan E-Modul Untuk Meningkatkan Kemampuan Berpikir Kritis Peserta Didik SMP [The Effectiveness of the Learning Cycle 7e Model Assisted by E-Modules to Improve Critical Thinking Skills for Middle School Students]. *Program Studi Pendidikan Matematika, 8*(1), 41-48.

Devy Herliandry, L., Nurhasanah, Enjelina Suban, M., & Kuswanto, H. (2020). Pembelajaran Pada Masa Pandemi Covid-19 [Lessons Learned During the Covid-19 Pandemic]. *Teknologi Pendidikan, 22*(1), 65-70.

Dian Lestari, N., & Agus Yusmiono, B. (2018). Analisis Penggunaan Sarana Dan Prasarana Untuk Menunjang Kegiatan Belajar Mahasiswa Di Universitas Pgri Palembang Tahun Akademik 2016/2017 [Analysis of the use of facilities and infrastructure to support student learning activities at Pgri Palembang University for the 2016/2017 academic year]. *JMKSP (Jurnal Manajemen, Kepemimpinan, dan Supervisi Pendidikan), 3*(1), 45.

Dwinggo Samala, A., Ramadhani Fajri, B., Ranuharja, F., & Darni, R. (2020). Pembelajaran Blended Learning Bagi Generasi Z Di Era 4.0 [Blended Learning for Generation Z in Era 4.0]. *Teknologi Informasi dan Pendidikan, 13*(1), 45-53.

Elok Youarti, I., & Hidayah , N. (2018). Perilaku Phubbing Sebagai Karakter Remaja Generasi Z [Phubbing's Behavior as a Generation Z Character]. *Fokus Konseling, 4*(1), 143-152.

Firdausi, E., Suyudi, A., & Yulianti, L. (2020). Identifikasi Kemampuan Penalaran Ilmiah Materi Elastisitas dan Hukum Hooke pada Siswa SMA [Identification of Scientific Reasoning Ability Materials on Elasticity and Hooke's Law in High School Students]. *Riset Penddikan Fisika, 5*(2), 69-75.

Fitrianingsih, D., Aulianingsih, I., & Yuliani, H. (2021). Analisis Kebutuhan Pengembangan Modul Elektronik (E-Module) IPA Terintegrasi Islam [Needs Analysis of Islamic Integrated Science Electronic Module (E-Module) Development]. *Ilmiah Pendidikan Fisika, 5*(1), 27-37.

Fitrianingsih, D., Yuliani, H., Inayah Syar, N., & Nasir, M. (2021). Analisis Kebutuhan Pengembangan Lembar Kerja Siswa (LKS) Berbasis Problem Based Learning Pada Materi Elastisitas Dan Hukum Hooke Kelas XI di SMA Negeri 1 Palangka Raya [Needs Analysis of Student Worksheet Development (LKS) Based on Problem Based Learning on Materials

Elasticity and Hooke's Law Class XI at SMA Negeri 1 Palangka Raya]. *Jurnal Pendidikan Fisika dan Terapannya, 4*(1), 1-7.

Gede Muhammad Zainuddin Atsani, K. (2020). Transformasi Media Pembelajaran Pada Masa Pandemi COVID-19 [Learning Media Transformation During the COVID-19 Pandemic]. *Studi Islam, 1*(1), 82-93.

Giawa, T., Montessori, M., & Yusuf, M. (2021). An Analysis of the Teachers Professionalism Performance of Pancasila and Civic Education at Padang City. *JMKSP (Jurnal Manajemen, Kepemimpinan, dan Supervisi Pendidikan), 6*(2), 239.

Joko Raharjo, T., Suminar, T., & Mu'arifuddin. (2016). Peran Pusat Kegiatan Belajar Masyarakat Dalam Menanggulangi Kemiskinan Melalui Pendidikan Nonformal Di Jawa Tengah [The Role of Community Learning Centers in Reducing Poverty Through Non-Formal Education in Central Java]. *Journal of Nonformal Education, 2*(1), 22-38.

Malina, I., Hadma, Y., & Inayah Syar, N. (2021). Analisis Kebutuhan E-Modul Fisika Sebagai Bahan Ajar Berbasis PBL DI MA MUSLIMAT NU [Needs Analysis of Physics E-Modules as PBL-Based Teaching Materials in MA MUSLIMAT NU]. *Jurnal Pendidikan Ilmu Fisika, 3*(1), 70-80.

Marisa, U., Yulianti, & Rahman Hakim, A. (2020). Pengembangan E-Modul Berbasis Karakter Peduli Lingkungan di Masa Pandemi Covid-19 [Development of Character-Based E-Module Caring for the Environment during the Covid-19 Pandemic]. *Unikama, 4*(10), 323-330.

Meiwandri, M. (2020). Pengembangan Perangkat Pembelajaran IPA SMP Kelas Viii Berbasis Keterampilan Berpikir Kritis [Development of Science Learning Devices for Middle School Class VIII Based on Critical Thinking Skills]. Universitas Sriwijaya. Palembang: Unsri.

Nurhayati, S., Musa, S., Boriboon, G., Nur'aeni, R., & Putri, S. (2021). Community Learning Center Efforts to Improve Information Literacy in the Community for Cyber Crime Prevention during a Pandemic. *Of N onformal Education, 7*(1), 32-38.

Pratama, R., Masykuri, M., & Ashadi. (2019). Modul Virtual Berbasis Inkuiri Terbimbing Untuk Meningkatkan Kemampuan Berpikir Kritis [Guided Inquiry-Based Virtual Module To Improve Critical Thinking Skills]. *EDUSAINS, 11*(1), 62-69.

Prihatiningrum, A., Anom Ramawangsa, P., & Bahri, S. (2020). Karakter Bentuk Hunian Suku Rejang Di Daerah Rawan Gempa (Studi Kasus: Desa Gunung Alam, Kabupaten Lebong) [Characteristics of Residential Forms of the Rejang Tribe in Earthquake Prone Areas (Case Study: Gunung Alam Village, Lebong Regency)]. *Ilmiah Arsitektur dan Lingkungan Binaan, 18*(1), 84-93.

Puspitasari, R., Hamdani, D., & Risdianto, E. (2020). Pengembangan E-Modul Berbasis Hots Berbantuan Flipbook Marker Sebagai Bahan Ajar Alternatif Siswa SMA [Hots-Based E-Module Development Assisted by Flipbook Markers as Alternative Teaching Materials for High School Students]. *Jurnal Kumparan Fisika, 3*(3), 247-254.

Putri, A., Sjaifuddin, & Berlian, L. (2022). Pengembangan E-Modul IPA Berbasis Adobe Flash Pada Tema Makananku Kesehatanku Untuk Kelas VIII SMP [Development of Adobe Flash-Based Science E-Module on My Food, My Health for Class VIII SMP]. *Journal of Science Education, 6*(1), 143-150.

Putu Puspita Dewi Palgunadi, N., Gusti Putu Sudiarta, I., & Made Ardana, I. (2021). Pengaruh Model Pembelajaran ALC berbasis E-Modul Terhadap Kemampuan Pemecahan Masalah Pada Masa Pandemi COVID-19 [The Influence of the E-Module-based ALC Learning Model on Problem-Solving Ability During the COVID-19 Pandemic]. *Ilmiah Pendidikan Matematika, 9*(2), 114-125.

Ratu Ayu Uswatun Khasanah, D., Pramudibyanto, H., & Widuroyekti, B. (2020). Pendidikan Dalam Masa Pandemi Covid-19 [Education During the Covid-19 Pandemic]. *Jurnal Sinestesia, 10*(1), 40-48.

Risdianto, E., Yanto, M., Kristiawan, M., & Gunawan, G. (2021). Respon Guru Pendidikan Anak Usia Dini terhadap MOOCs berbantuan Augmented Reality [Early Childhood Education Teacher's Response to Augmented Reality-assisted MOOCs]. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini, 5*(2), 1487-1500.

Sri Wahyuni, I., Risdianto, E., & Henny, J. (2019). Pengembangan Bahan Ajar Elektronik Menggunakan Flip Pdf Professional Pada Materi Alat-Alat Optik Di SMA [Development of Electronic Teaching Materials Using Flip Pdf Professional on Optical Instrument Materials in High School]. *Kumparan Fisika, 2*(3), 145-152.

Sugiyono. (2013). *Metode Penelitian Kuantitatif Kualitatif dan R&D [Qualitative Quantitative Research Methods and R&D]*. Bandung: Alfabeta.

Widiastutik, T. (2021). Pengembangan E-Modul Bahasa Indonesia Kelas XII Dengan Flip Pdf Profesional Sebagai Alternatif Pembelajaran Di Tengah Pandemi COVID 19 [Development of an Indonesian E-Module for Class XII with Professional Flip Pdf as an Alternative for Learning Amid the COVID-19 Pandemic]. *Diklat Keagamaan, 15*(1), 35-41.

Widayoko, A. (2021). Penggunaan LMS Schoology Pada Pembelajaran Fisika SMA Materi Fluida Statis Saat Pandemi Covid-19 [The Use of LMS Schoology in High School Physics Learning Materials for Static Fluids During the Covid-19 Pandemic]. *Riset Pendidikan Fisika, 6*(1), 13-19.