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Development of Electronic Physics Modules with a Scientific Approach Using the *Lectora Inspire Application* in Static Fluid Materials

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Abstract. This research aims to scientifically develop a Physics-based electronic module approach using the *Lectora Inspire application* on Static Fluid material, knowing the feasibility of the electronic module being developed. The type of research used is R&D (*Research and Development)*, with development procedures using the ADDIE model. However, the procedures carried out only reached the third stage: analysis, design, and Development. The data used in this research are qualitative and quantitative data obtained from research subjects. The analysis stage is carried out by analyzing the needs of teachers and students in Physics learning activities. The design stage is the design of compiling electronic modules according to the results of the needs analysis. The development stage was validated by two expert lecturers as expert validators, three teacher validators (*users*), and trials by students consisting of 3 students in one-on-one trials, nine students in small group trials, and 96 students in field trials. Product feasibility is obtained based on validation results from expert validators, teacher validators (*users*), and student trials. The data collection techniques used were documentation and questionnaires, which were analyzed based on Azwar's opinion. Based on the results of the research and discussion, it can be concluded that the results of expert validation obtained an average score of 110, teacher validation of 108.6 from a maximum score of 116, and the average score of one-on-one trial results was 21.33, the average of small group trials was 22.11, and the average of field trials was 23.05 so that The developed electronic module meets criteria very good. Hence, it is very suitable for use in high school learning.

Keywords: Electronics module; learning of physics; lectora inspire; scientific; static fluid

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INTRODUCTION

Currently, Science and Technology (IPTEK) is growing increasingly rapidly. The Development of science and technology (IPTEK) has become widespread in various fields, one of which is the field of education, so all learning processes can be carried out quickly. With the Development of technology in education today, teachers and students can easily search for information to increase their knowledge via the Internet (Mulyani & Haliza, 2021). Development and improvement of the quality of education and the quality of human resources (HR) are indispensable tools to support the current Development of science (Martin, 2022).

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In order to increase the value of education in Indonesia, one of the efforts that has been implemented is carrying out a curriculum improvement pattern. Currently, the curriculum in our country that still applies is the 2013 curriculum, where in teaching and learning activities In progress, the students have the leading role, and the teacher acts as a facilitator to facilitate students in solving problems and discovering concepts (Yuniar et al., 2021). In its application to the learning process, curriculum 2013 prioritizes the use of scientific (scientific approach). Where the expected output is more active students, and they can get involved in the learning process (Ellizar et al., 2018). Where the Development of attitudes, knowledge, and skills becomes the center of learning goals to develop the whole person (Suluh & Jumadi, 2019), implementing teaching and learning activities with a scientific approach is a distinctive feature of the 2013 Curriculum (Thahir et al., 2019). This learning includes 5M in its application, namely (1) observing, (2) asking, (3) gathering information, (4) associating/reasoning, and (5) communicating (Solikha et al., 2022).

As the only Formal institutions, schools have a role in realizing goals. One way to achieve this goal is through interaction in the learning process in the classroom, which is carried out consciously, directed, and systematically toward changes in student behavior in accordance with what is expected (Ekayani, P, 2017). The entire learning process is directed at developing the three domains, which include cognitive, affective, and psychomotor domains; these three domains must be achievement targets in all lessons, including physics lessons (Kurniawan & Noviana, 2017).

Physics is an exciting subject that requires more understanding than memorization, but in practice, it is often misunderstood by students as an abstract science with theories and complex questions, so Physics is seen as a challenging and less exciting subject (Putri et al., 2016). In line with the research results conducted by Azizah (2015), as many as 51% of students said that physics is a subject that is difficult to understand; students have difficulty in studying physics because there are many formulas, the teacher is too quick when explaining the material and also the learning methods are boring with the use of less varied teaching materials (Azizah et al., 2015). The matter was also felt by many students in Senior High School N 5 Surakarta, high school N 8 Surakarta, and MAN 1 Surakarta, Who said that physics is a complex material. In learning Physics, difficulties can occur due to several things, including teachers' need to link Physics concepts with simple examples that students can observe. In everyday life (Al-Kussamiet.al.,2013).

One of the materials studied in Physics in high school is Static Fluid material. Students often need help understanding static fluid material because, in this material, students are required to do arithmetic (exacts) and memorize theory (Puspita & Jatmiko, 2013). In line with research by Ichtiyaranisa (2013), static fluid material is one of the materials that is still considered problematic by some students and teachers to understand concepts, where students tend to experience errors in solving problems (Ichtiyaranisa., et al. 2013).

Physical material requires practical and interactive teaching materials so that students will more easily understand the material being presented. Therefore, physics learning must be packaged in a more exciting and innovative way so that it can stimulate students' level of activity in the learning process. According to Dohot and Nurul (2020), one of the factors that can influence student learning achievement is the use of learning media. One of the exciting learning media that can facilitate students in the learning process is electronic modules (e-modules) (SD Siregar et al., 2020).

Module m is a teaching material that is arranged 0 systematically based on a 0 curriculum that is designed in the form of the most minor 0 learning units 0 so that it is possible to 0 be studied independently 0 by students in a particular unit of time, I with the aim of l mastering competencies taught (Sirate & Ramadhana, 2017). Modules are divided into two types, namely printed modules and electronic modules. As technology develops today, printed modules are rarely used because learning is required to utilize technology, so the use of electronic modules is more necessary.

Electronic modules (e-modules) are a format for delivering classroom tools designed to help small groups of students achieve learning goals. These teaching materials include text, audio, graphics, video, navigation, and other features to make users more interactive. (Sugianto, 2013). E-modules can be accessed via electronic devices such as laptops, computers, or smartphones. In terms of use, currently, smartphones are dominated by young people, so smartphones can be used in teaching and learning activities (Rismayanti, 2022). The advantages of smartphones are that they are easy to use and have

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minimum costs because they are open source, making it easier to access applications; apart from that, when accessing smartphones, there are no restrictions on place and time (Ronaldo & Ardoni, 2020).

One program or application that is effectively used to create learning media is Lectora Inspire. Where in its implementation and application, Lectora Inspire is relatively easy to use because it does not require an understanding of sophisticated programming languages. Teaching materials developed with Lectora Inspire authoring software can be published in various forms such as HTML, Single File executable (exe), and CD-ROM. Lectora Inspire has many features, such as many templates available, adding buttons directly, creating evaluation content, and inserting videos, images, or audio. (Sitinjak, 2020) .

Research on the Development of learning media with Lectora Inspire has been carried out by Putri (2016) with Business and Energy material, where the content of the media includes core competencies (KI), business and energy material, animations and videos, evaluation questions and value results (Putri et al., 2016). In another research by Nurjanah & Suharyanto (2016) with Static Fluid material, the content of the media includes instructions for use, Core Competencies (KI), Basic Competencies (KD), Indicators, practice questions, creator/writer, and glossary. The media developed by Nurjanah Suharyanto (2016) still needs to contain videos or animations, question evaluations, or material summaries. Suitable teaching materials (media or modules) are composed of a series of well-coordinated activities related to media, materials, and evaluation (Harta & Idris, 2014). Based on this description, the author is interested in developing electronic modules with complete content, including competencies, apperception videos, material summaries, LKPD, example questions, practice questions, evaluation questions, and a glossary. With this electronic module, interactive, exciting learning can be created. It is fun and not monotonous, so students can understand the material more easily.

METHOD

The type of research used is research *and development (R&D). The* development model used is ADDI E, which includes *Analysis*, *Design*, *Development, Implementation,* and *Evaluation*. According to the purpose, this research only reaches the third stage, namely *Development, and* the last two stages, namely implementation *and* evaluation, still need to be carried out.

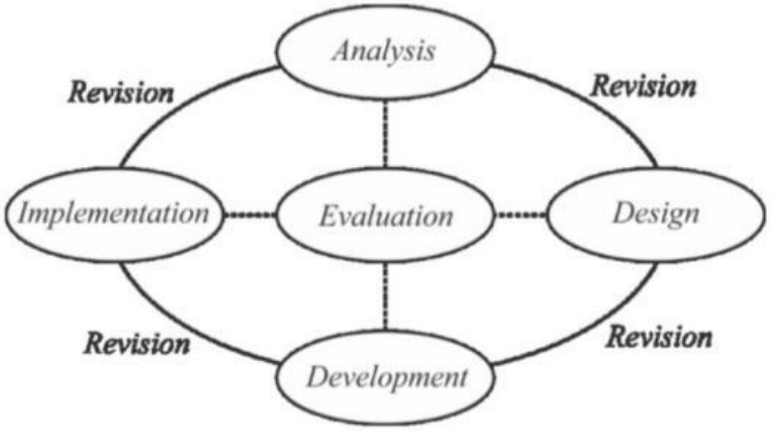

Figure 1. Steps for R&D Research using the ADDIE Method According to Branch (2009)
(Source: Sugiyono, 2015)

At the analysis stage, learning needs are analyzed through a literature review and distribution of teacher and student needs analysis questionnaires. The aim is to find out needs and problems during the learning process. Next, I plan product creation at the design stage, make flow charts and storyboards, and prepare teaching materials. Then, at the development stage, the product *draft* is developed based on the assessments of expert lecturers and teachers as well as student trials.

This research was conducted in 3 schools, namely at SMA N 51 Surakarta class XI MIPA 3, SMA N 8 Surakarta class XI MIPA 4, and MAN 1 Surakarta class students. Research instruments

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include questionnaires1needs analysis and data collection instruments in the form of *questionnaires* (questionnaires), where questionnairesspread to respondents containing questions with answers that have been provided. The data collection questionnaire instrument can be seen in Table 1 in detail.

Table 1. Data Collection Questionnaire Instrument

No	Instrument Name	Data source	Scale	Question items
1	The teacher needs a questionnaire instrument	Teacher		13
2	Student needs questionnaire instrument	Student	*Guttman*	10
3	E-module assessment questionnaire instrument	Expert lecturer, teacher	*Likert*	29
4	Trial questionnaire instrument	Student	*Likert*	24

Determining product criteria developed based on quantitative analysis by converting the average score according to Azwar's opinion (20 10) in Table 2.

Table 2. Assessment Classification

Intervals	Criteria
Mi + 1.5 Sbi < X	Very good
Mi + 0.5 Sbi < X ≤ Mi + 1.5 Sbi	Good
Mi - 0.5 Sbi < X ≤ Mi + 0.5 Sbi	Enough
Mi - 1.5 Sbi < X ≤ Mi - 0.5 Sbi	Not enough
X ≤ Mi - 1.5 Sbi	Very less

Source: Kuswandari et al., 2013

Information:

X = respondent's score

Mi = ideal average = $\frac{1}{2}$ (ideal maximum score + ideal minimum score)

Sbi = s ideal standard deviation = $\frac{1}{6}$(ideal maximum score + ideal minimum score)

The assessment categories carried out were by expert lecturers and teachers on material, media aspects, and all aspects, as in Table 3, Table 4, and Table 5. The assessment categories at the student trial stage are material aspects and media aspects, as shown in Table 6.

Table 3. Assessment Categories of Expert Lecturers and Teachers on Material Aspects

Intervals	Criteria
5 8.5 < X	Very good
49.5 < X ≤ 58.5	Good
40.5 < X ≤ 49.5	Enough
31.5 < X ≤ 40.5	Not enough
X ≤ 31.5	Very less

Table 4. Assessment Categories of Expert Lecturers and Teachers on Media Aspects

Intervals	Criteria
35.75 < X	Very good
30.25 < X ≤ 35.75	Good
24.75 < X ≤ 30.25	Enough
19.25 < X ≤ 24.75	Not enough
X ≤ 19.25	Very less

Table 5. Assessment Categories of Expert Lecturers and Teachers in All Aspects

Intervals	Criteria
94.25 < X	Very good
79.75 < X ≤ 94.25	Good
65.25 < X ≤ 79.75	Enough
50.75 < X ≤ 65.25	Not enough
X ≤ 50.75	Very less

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Table 6. Student Trial Assessment Categories

Intervals	Crteria
18 <	Very good
14 < X ≤ 18	Good
10 < X ≤ 14	Enough
8 < X ≤ 10	Not enough
X ≤ 8	Very less

The eligibility criteria for the electronic module being developed can be determined using percentage techniques in analyzing the scores obtained with the following equation :

$$\text{persen kelayakan} = \frac{total\ skor\ yang\ diperoleh}{total\ skor\ maksimum} \times 100\%$$

The percentage of results obtained can be analyzed using Table 7.

Table 7. Module Eligibility Criteria

No	Yield Percentage	Eligibility Criteria
1	< 21%	Not really worth it
2	21- 40 %	Not feasible
3	41- 60 %	Decent enough
4	61 - 80 %	Worthy
5	81 - 100%	Very Worth It

Source: Arikunto quoted from Ernawati and Sukardiyono 2017

RESULT AND DISCUSSION

RESULTS

Analysis Stage

The analysis stages were carried out through literature studies and the distribution of questionnaires analyzing the needs of students and teachers during the physics learning process. From the distribution of needs analysis questionnaires at SMA N 5 Surakarta, SMA N 8 Surakarta, and MAN 1 Surakarta, it was found that 87.04% of students said that physics was a difficult subject. In the learning process, students said that they used textbooks from school as learning resources. As many as 8 3.33% of students felt that there were limitations to the textbooks or handbooks used, so they had to look for other sources on the internet. As many as 62.04% of students said that during the lesson, the teacher had not used interactive learning media; the use of media was limited to PowerPoint and video shows.

The physics material taught requires interactive and effective teaching materials so that the lessons will be easier for students to understand. Therefore, physics learning must be packaged in a more interesting and innovative way so that it can stimulate student activity in the learning process, especially physics. As stated by Dohot and Nurul (2020), the use of learning media is one of the factors that can influence student learning achievement. One of the teaching materials or learning media that is interesting and can facilitate students in the learning process is electronic modules (SD Siregar et al., 2020).

The results of the teacher needs analysis stated that they agreed that electronic modules were developed as learning resources. As many as 93.52% of students said it was necessary to develop electronic modules as a means of teaching physics, and 98.15% of students agreed that the electronic physics modules being developed were packaged in an attractive appearance and accompanied by videos/images/simulations. Electronic modules are developed using a scientific approach in each learning activity. A scientific approach is the right step for educators to take in the process of learning activities (Syaifudin & Masyhadi, 2022).

Based on research literature, Ichtiyaranisa (2013) states that some students and teachers still need help understanding static fluid material, so students tend to experience errors in solving problems (Ichtiyaranisa et al., 2013). This is in line with the results of the needs analysis, which stated that 80.55%

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of students needed help understanding static fluid material. Based on the results of this analysis, it is necessary to develop an electronic physics module based on a scientific approach to static fluid materials.

Design Stage

The design stage is carried out by designing the product to be developed in accordance with the results of previous analysis. The application used to make this product is *Lectora Inspire*. Activities at the design stage can be explained as follows:

1. Making *Flowcharts*, *Flowcharts,* and *Storyboards*: The purpose of this creation is to simplify the product design process.
2. Preparation of Teaching Materials: Preparing teaching materials by collecting sources of materials that will be included in the product.

Product Design: Electronic module product design using the *Lectora Inspire application*, supported by additional applications such as Canva, video editing applications, *YouTube*, Google Forms, and *Google Drive*. The results of designing this electronic module are composed of several components, which include the start page (*cover*), main menu, learning activities menu, practice questions, glossary, bibliography, and creator. The home page contains the module title and login button. If the enter button is clicked, it will automatically go to the main. The main menu, page can be seen in Figure 2.

(a) (b)

Figure 2. (a) Electronic Module Home Page Display; (b) Display Menu Main Electronic Module

Development Stage

The development stage is the stage where the product draft that has been produced is assessed by expert lecturers and tested on students. The initial stage carried out is a product assessment by an expert lecturer in the form of an assessment of media aspects and material aspects accompanied by comments and suggestions regarding the product that has been developed. Then, revisions are made according to comments and suggestions from experts. After the assessment by expert lecturers, the next step is the assessment by the Physics teacher through an assessment questionnaire accompanied by comments and suggestions on the product in the form of an e-module that has been developed. After the teacher's revision, according to comments and suggestions, the next stage is the stage test try one by one, then the test tries group small, and then the test try field. Following detailed data results were obtained :

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Expert Lecturer Assessment

The expert lecturer assessment was carried out by two thesis supervisors with the aim of assessing the quality of the electronic modules created before being tested on students. Comments and suggestions provided by lecturer experts are used as a reference for product improvement.

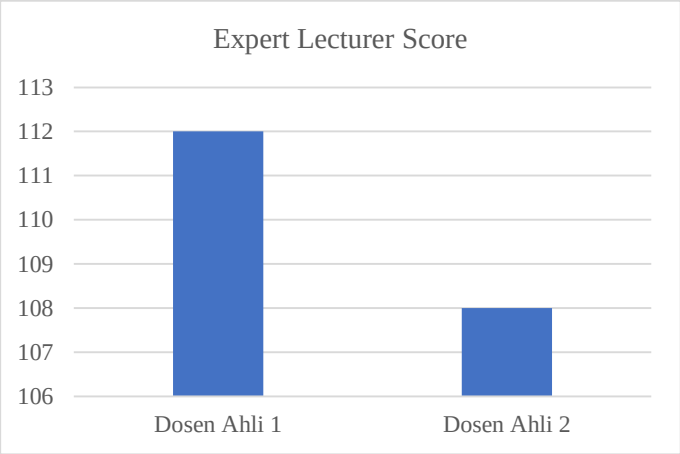

Figure 3. Expert Assessment Results Diagram

Based on Figure 3, the assessment of the two expert lecturers can be concluded that the average score obtained is 110, so based on the overall assessment criteria, the aspects referred to in Table 3.4 meet the very good criteria. Details of the expert lecturer's assessment results on all aspects are presented in Table 8 while the score criteria and eligibility criteria can be seen in Table 9 and Table 10.

Table 8. Expert Lecturer Validation Results in All Aspects

Validator	Score
Expert 1	112
Expert 2	108
Average	110

Table 9. Score Criteria Based on Expert Validation

Intervals Score	Score Category	f	%
X > 94, 2 5	Very good	2	100%
79 , 7 5 < X ≤ 94 , 2 5	Good		
65 , 2 5 < X ≤ 79 , 7 5	Enough		
50 , 7 5 < X ≤ 65 , 2 5	Very less		
X ≤ 50, 7 5	Not enough		

Table 10. Eligibility Based on Expert Validation

Validator	Results Percentage	Eligibility Criteria
Expert 1	96.6 %	Very Worth It
Expert 2	93.1 %	Very Worth It

Based on the calculation of the feasibility percentage, the percentages obtained were 96.6% and 93.1%, with very feasible criteria. The results of expert lecturers' assessments on each aspect can be seen in Table 11 and Table 12.

Table 11. Results of Assessment of Material Aspects by Expert Lecturers

Intervals	Criteria	f	%
5 8.5 < X	Very good	2	100%
49.5 < X ≤ 58.5	Good	-	-
40.5 < X ≤ 49.5	Enough	-	-
31.5 < X ≤ 40.5	Not enough	-	-
X ≤ 31.5	Very less	-	-

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Table 12. Results of Media Aspect Assessment by Expert Lecturers

Intervals	Criteria	f	%
35.75 < X	Very Good	2	100%
30.25 < X ≤ 35.75	Good	-	-
24.75 < X ≤ 30.25	Enough	-	-
19.25 < X ≤ 24.75	Not enough	-	-
X ≤ 19.25	Very less	-	-

Stage 1 Revision

After expert validation, next is stage 1, product revision of the electronic module, which was developed in accordance with comments and suggestions from expert validators. In stage 1 revision, there were several comments and suggestions on the material aspect, namely in the LKPD, the statement of equation variables needed to be written before the sound of the law. Then, the competency map is less flexible when operated, so it needs to be improved to make it easier to operate; in the summary of the material, we need to add more examples of application in everyday life and in the viscosity sub-material we add another LKPD in the form of a video show. Then, in the learning reflection, the KKM (Minimum Completeness Criteria) score is given as a benchmark so that students can see whether they have completed it or not; the font needs to be enlarged again to make it easier to read—meanwhile, comments and suggestions from teachers as a whole need to be added to the glossary. The results of the revised stage 1, which had been corrected based on comments and suggestions from both expert lecturers and teachers at the assessment stage, produced *draft* product 2, which was then tested one by one on students.

Teacher Assessment

The teacher assessment was carried out by three Physics teachers in three different schools; all three teachers taught class XI. The aim is to assess the quality of the electronic modules that have been developed before being tested and to try them on students. Comments and suggestions given by the teacher are taken into account as a reference for product improvement.

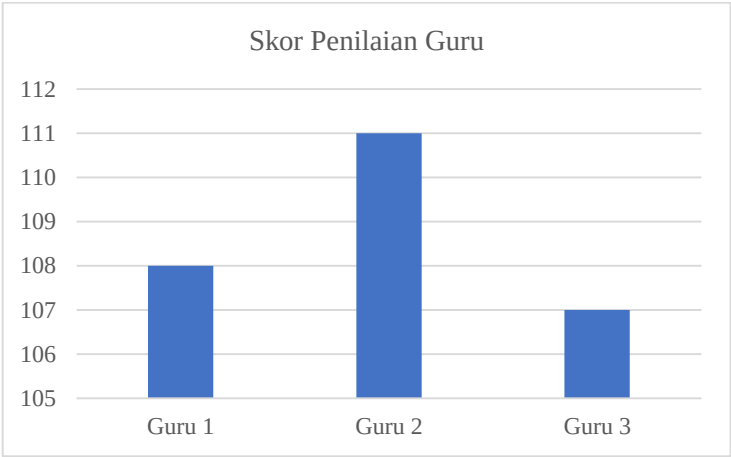

Figure 4. Teacher Assessment Results Diagram

Based on Figure 4, the average score obtained from the third teacher is 10 8.6, so based on the evaluation of the criteria, all aspects meet the criteria very well. Details of results evaluation teachers, score criteria, and eligibility on all aspects served in Table 13, Table 14, and Table 15.

Table 13. Teacher Validation Results in All Aspects

Teacher *(User)*	Score
Teacher 1	108
Teacher 2	111
Teacher 3	107
Average	108.6

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Table 14. Score Criteria Based on Teacher Assessment

Intervals Score	Score Category	f	%
X > 94, 2 5	Very good	3	100%
79 , 7 5 < X ≤ 94 , 2 5	Good		
65 , 2 5 < X ≤ 79 , 7 5	Enough		
50 , 7 5 < X ≤ 65 , 2 5	Very less		
X ≤ 50, 7 5	Not enough		

Table 15. Eligibility Based on Teacher Assessment

Evaluator	Results Percentage	Eligibility Criteria
Teacher 1	93.1 %	Very Worth It
Teacher 2	95.7 %	Very Worth It
Teacher 3	92.2 %	Very Worth It

Based on the calculation of feasibility, a percentage of 9 3.6 1 % was obtained; 95.7% and 9 2, 2 % with very feasible criteria. The results of the teacher assessment on each aspect can be seen in Tables 16 and tables 17.

Table 16. Results of Assessment of Material Aspects by Teachers

Intervals	Criteria	f	%
5 8.5 < X	Very Good	3	100%
49.5 < X ≤ 58.5	Good	-	-
40.5 < X ≤ 49.5	Enough	-	-
31.5 < X ≤ 40.5	Not enough	-	-
X ≤ 31.5	Very less	-	-

Table 17. Results of Media Aspect Assessment by Teachers

Intervals	Criteria	f	%
35.75 < X	Very good	3	100%
30.25 < X ≤ 35.75	Good	-	-
24.75 < X ≤ 30.25	Enough	-	-
19.25 < X ≤ 24.75	Not enough	-	-
X ≤ 19.25	Very less	-	-

Stage 2 Revision

Stage 2 revision was carried out based on the teacher's comments and suggestions. Overall, comments and suggestions from teachers are that more words need to be added to the glossary. The results of stage 2 revisions, which have been corrected based on comments and suggestions from teachers at the assessment stage, produce a stage 3 product *draft*, which is then tested one by one on students.

Student's Test

The student trial stage includes one-on-one trials, then small group trials, then field trials

- ***Test Try One on One.***

Stage test try one by one, is a test that is done on the student for the first time. In the test, try one by one, and the product w a s tried out to 3 students with each school one student. Details of results evaluation on test phase one by oneserved in Tables 1 8 and assessment criteria in Table 19.

Table 18. One-on-One Trial Assessment Results

Student	Score
Student 1	24
Student 2	17
Student 3	23
Average	21.33
Eligibility Criteria	Very Worth It

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Table 19. One-on-One Trial Assessment Criteria

Intervals	Criteria	f	%
18 <	Very good	2	67%
14 < X ≤ 18	Good	1	33%
10 < X ≤ 14	Enough	-	-
8 < X ≤ 10	Very less	-	-

Stage 3 Revision

Three revisions were carried out based on students' comments and suggestions. Stage f test was tried one by one. Comments or suggestions from students, namely, the size of the writing on some parts in the electronic module is different, or some are too small, so the error size needs to be corrected. Improved product *draft* stage 3, which has been carried out according to comments and suggestions by three students, produced *drafts* of product in stage 4, which was then tried out to students in the test small group.

- ***Test Small Group Test***

Stage test try small group is test 1 try, which is performed on nine students with each school having three students. From this stage, an average score of 22.11 was obtained. Details result in assessment and assessment criteria on f test try group i is smallserved on Table 20 and Table 21

Table 20. Small Group Trial Assessment Results

Target	Student	Score
School 1	Student 1	24
	Student 2	24
	Student 3	22
School 2	Student 1	20
	Student 2	24
	Student 3	23
School 3	Student 1	15
	Student 2	24
	Student 3	23
Average		22.11
Eligibility Criteria		Very Worth It

Table 21. Small Group Trial Assessment Criteria

Intervals	Criteria	f	%
18 <	Very good	8	89%
14 < X ≤ 18	Good	1	11%
10 < X ≤ 14	Enough	-	-
8 < X ≤ 10	Very less	-	-

Stage 4 Revision

Four revisions were carried out based on students' comments and suggestions for stage p small group x trial. Student comments or suggestions, namely, competency maps and concept maps, are provided with download facilities to make them easier to operate so that researchers change what was originally a concept map and competency map in the form of an image and then change it into a PDF file so that it is easier to operate. Improvements to the stage 4 product *draft* that has been completed and carried out based on comments and suggestions by nine students produce *a draft* product stage 5, which is then tested on students on the trial field.

- ***Field trial stage***

In the field trial phase, the product was tested on 9 6 students with each school, namely 32 students. Details of the results of the assessment and assessment criteria in the field trials are presented in Table 22 and Table 23.

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Table 22. Field Trial Assessment Results

Score	Frequency
24	67
23	11
22	6
21	2
20	3
19	2
17	1
16	1
15	2
Average	23.07
Eligibility Criteria	Very Worth It

Table 23. Field Trial Assessment Criteria

Intervals	Criteria	f	%
$18 <$	Very good	93	96.87%
$14 < X \leq 18$	Good	3	3.13%
$10 < X \leq 14$	Enough	-	-
$8 < X \leq 10$	Very less	-	-

Stage 5 Revision

Five revisions are the final revisions in this research, which were carried out based on comments and suggestions from students at the field trial stage. As for the comments and suggestions given by students, it is necessary to add LKPD (Learner Worksheets) in word form, so that students can work straight away. Apart from that, the e-module can be accessed on IOS. *(iPhone Operating System).* Improved product *draft* stage 5 stages final from the Suite study, Which produces *drafts* of the product end.

DISCUSSION

The objectives of this research are to explain specifications and develop electronic modules with good criteria. This electronic module was created using the Lectora Inspire application for static fluid material, and its learning activities used a scientific approach. This electronic module has a relatively small size for the .apk format, namely only 6 MB. This electronic module can be accessed via an Android smartphone. This electronic module is equipped with several features which include: (1) The home page contains the title of the electronic module and an entry button to go to the main menu (2) The main menu contains buttons to go to the other nine *screens*, (3) The User's Guide page contains instructions. Regarding navigation and brief explanations in using electronic modules, (4) the Foreword page contains introductory words, (5) the Competency page contains core competencies, essential competencies, competency achievement indicators, learning objectives, concept maps, and competency maps, (6) the Activities page The lesson contains six static fluid sub-materials. Each sub-material is accompanied by an apperception video, LKPD, and material reinforcement using a scientific approach. (7) The Practice Questions page contains two questions for each sub-material and is accompanied by the response *"congratulations, your answer is correct :)"* for the correct answer, while *"sorry your answer is not correct :("* for the wrong answer and a discussion will be provided after completing the questions, (8) Question Evaluation page contains ten questions equipped with *a timer*, automatic score results, discussion, facilities for uploading score results and learning reflections, (9) Static fluid glossary, (10) References or Bibliography, (11) Creator contains information author's brief.

After creating the electronic module design, the next stage is the development stage. By assessing the product that has been produced in the form of an electronic module, the assessment is carried out by expert lecturers accompanied by comments and suggestions. Next, an assessment is carried out by the physics teacher to obtain comments and suggestions regarding the electronic module developed.

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Comments and suggestions were used as a reference in improving the product. Next, the electronic module was tested on students at the three schools where the research was conducted.

The results of this product development obtained quantitative data and qualitative data. Quantitative data was obtained from the assessment of the two expert lecturers, with an average score of 110, and the teacher, with an average score of 108.6 in the trial; the average score was 21.33 in the trial of small groups the average score was 22.11, and in the first trial, the average score was 22.11. The field obtained an average score of 23.05. The results of this assessment indicate that the module developed meets the criteria very well. Apart from that, product improvements have been made based on comments or suggestions from expert lecturers, teachers, and students, which include stage 1 revision, then stage 2 revision, followed by stage 3 revision, and finally, stage 4 revision, which produces the final product *draft*.

It is hoped that the electronic physics module created using the Lectora Inspire application can overcome the limitations of previous research by Sitinjak (2020) with Newton's Law material, where the content of the media developed includes competencies, materials, sources, and practice questions (Sitinjak., 2020). This media is not equipped with an evaluation menu, a timer automatic score results, or LKPD (Learner Worksheets). So, in this research, an electronic module was developed with more complete facilities so that it can be used as the leading learning media.

During the ongoing research, there are several obstacles that are limitations of the research, including that this research only aims to find out the specifications and criteria for evaluating e-modules by expert lecturers and teachers and testing the product on students both in terms of material and media. Apart from that, this research only reaches the stage. This development research also has *limitations* regarding products that only contain one KD; this module is not yet equipped with the ability to save answers in the question column and cannot save student evaluation results collectively to the teacher. Video viewing requires a smooth internet connection delay. Only an Android smartphone can be installed to install this application, so iOS users can only access it via a link; they cannot install the application. Application electronic module This has its own limitations. No one canupload *to the Play Store* because uploading the application requires account*developers* Google Play to pay for account creation registration.

CONCLUSION

An electronic module has been successfully developed with specifications using the Lectora Inspire application containing static fluid material in the form of a .apk file with a capacity of 6 MB. Other specifications include instructions for use, foreword, competencies (containing KI, KD, GPA, learning objectives, concept map, and competency map), learning activities using a scientific approach, practice questions, discussion, and evaluation. The electronic module developed has complied with the criteria very well, so it is suitable for use in high school/MA learning.

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