

## Literature study: Application of lectora inspire interactive learning media in physics courses in Indonesia

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**Abstract.** This study aims to determine the application of Lectora Inspire interactive learning media in physics learning, and to find out the average rating of the articles studied so that the strengths and weaknesses can be identified. This research method is a literature study. The approach used in this study is a qualitative approach and examines the research journal on the development of interactive learning media Lectora inspire which was published in the last 6 years and indexed by Google Scholar. The results of the study are based on the calculation of the average assessment from various articles and show that the development of Lectora inspire media expert validation assessment results has an average percentage of 84.85%, and material expert assessments get an average of 85.14%, while the trial results get an average of 82.17%. The advantages of the media show that the media has a high value on the critical thinking aspect, is said to be interesting, practical, effective, and the results of the assessment from various aspects are valid. So that the Lectora inspire media deserves to be applied as a teaching medium. Lack of media is the need to be combined with learning models in order to achieve learning objectives. The application of Lectora inspire is suitable for physics learning.

### 1. Introduction

Advances in science and technology are having an increasing influence on human activities and will have a significant impact in the 21st century [1] [2]. Rapid development triggers changes in the learning system [3]. Technological developments have varied influences on various fields of life, including in the field of education [4] [5].

Education will be said to be effective if education can give birth to students who master the material and can reach the expected learning targets [1]. This forces educators to improve student learning outcomes, so that they can produce effective education. In the field of education, the internet is dominantly used as a learning medium that helps show facts, concepts, principles, to certain procedures [6]. In line with the progress of science, effective and efficient learning focuses on perfect mastery of science, one of the lessons that emphasizes perfect mastery of science is physics learning. [7].

Physics is one of the disciplines that study natural phenomena which aims to improve thinking skills and aims to provide students' abilities, improve science and technology, and be able to stimulate students in developing knowledge and mastery of students' concepts about science. [8] [9]. Physics is classified into facts, principles, concepts, theories and laws [10]. Efforts that can be used to improve the learning process is to use learning media [11].

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Learning media visualizes the learning process commonly used in physics learning [12]. Learning media is one solution that can be used by educators in teaching, with learning media educators can explain the material with models, photos, and videos about the object being studied. [13]. The lack of learning media developed as one of the triggers for learning cannot be optimal, causing students to be unmotivated in participating in learning, and lack of awareness of the material being taught. [14] [15].

Improving learning media using technology is a good alternative, if applied in the form of computer-based interactive media [16]. Innovative and interesting learning media, one of which is to create interactive learning media by applying Lectora inspire [17] [18].

*Lectora inspire* is computer software used to develop electronic learning (e-learning) that is easy to use and apply because its use does not require an understanding of complex programming languages. [19]. Lectora inspire can design interesting subject matter added with videos, animated images, and characters that can be used immediately [20] [21]. Lectora Inspire can be used to combine flash, unify images, record video, and screen capture, and the output of Lectora Inspire is in the form of a single executable file (exe), CDROM, HTML, SCORM (Web Based), and many others. [14] [22].

Media utilization *lectora inspire* As the output of advances in educational technology, it is hoped that it can be one of the supports for the learning process, especially subjects that are less attractive [23]. Lectora inspire software can be published online or offline, therefore the designs made can be used for various systems, learning methods and make it easier for educators to prepare for learning [24]. Utilization of learning media is one way that can be used by educators to improve student learning outcomes [25].

Careful and varied application of interactive media is able to solve the passive view of students [8]. The application of Lectora Inspire media is adequate to be used as a learning medium that can support students in understanding the topic of the material [26]. Based on the introduction above, to conduct research on Literature Study: Application of Lectora Inspire Interactive Learning Media in Physics Subjects in Indonesia to see the results of development validation and the advantages and disadvantages through the articles studied. This research serves as a material for consideration in the application of Lectora Inspire interactive media in physics learning.

## 2. Methods

This research method is a literature review. Literature review is an exploration of various literatures on a topic carried out in a structured manner. Data or information will be reviewed, considered, and integrated into a unified discussion [27].

There are several stages in the literature review procedure, namely: first, deciding the topic of the study by conducting a study and identifying it against the discussion or topic problem from reference sources. Second, tracking and determining the right articles with the topic of discussion are then identified to obtain structured information. Third, classify the reviewed journals or articles into analysis from various linked sources, decide on the objectives and methods to be applied to the research. Fourth, look at the literature and focus the reader so that they can accurately capture the literature review [28].

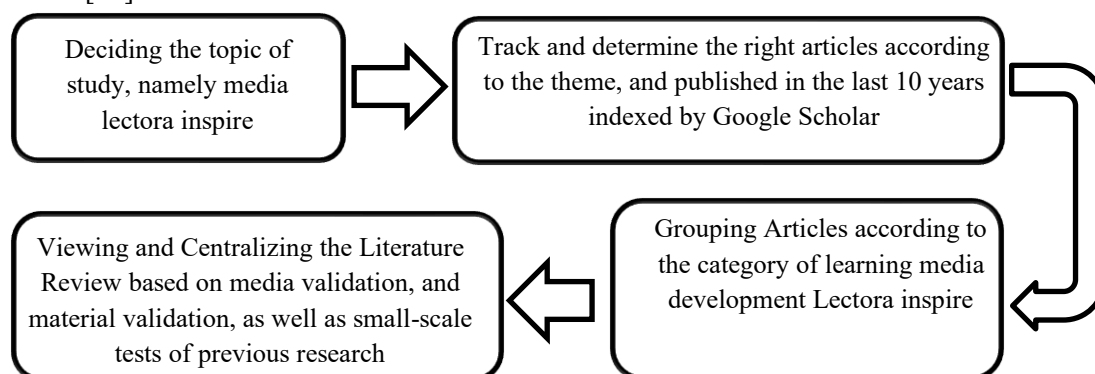


Figure 1. Steps in the literature review process

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The data used as sources in this research are relevant journals/articles in the last 6 years and published nationally and internationally. The results of the research are presented in the form of a table regarding the research and development of Lectora Inspire media as a media to support learning. The final result of this research is to become one of the reference materials and considerations in research and development as well as the application of Lectora Inspire-based physics learning media.

### 3. Results and Discussion

#### 3.1. Lectora Inspire interactive learning media

Lectora inspire interactive learning media is prepared by including a menu that will help teachers and students participate in the teaching and learning process in the classroom, the menus available on the media are divided into four main menus, namely: competency standards, virtual laboratories, materials, and learning evaluation [5]. Learning media made with attractive designs will make students involved in learning and educators as facilitators [3]. The following are the results of the Lectora Inspire media research on physics learning in high school.

**Table 1.** Summary of research and development by lectora inspire interactive in Indonesia

Researcher Name and Publication Year	Research Title	Article	
		Media Validation	Research Result Material Validation
Fitri Rizki, Indra Gunawan, Amirudin (2020)	<i>The Development of Problem Solving-Based Interactive Learning Media Using Lectora Inspire</i> [1].	The results of the assessment of the experts regarding the feasibility of the media with a percentage of 95% (very feasible).	Based on the assessment of material experts, the material assessment reached 81% with a very decent category.
S. Latifah, Yuberti, V Agestiana (2020).	Development of HOTBased Interactive Learning Media Using the Lectora Inspire Application [4].	media expert validation got an average score of 94% with very good criteria, so that HOTSbased media with the Lectora inspire application is feasible to use.	Material expert validation gets a score with an average of 98% with very good criteria.
Adi Kurniawan, Ashari, Arif Maftukhin (2017).	Development of Learning Media Using Lectora Inspire Software to Increase Students' Motivation for Learning Physics in Class X MAN Purworejo Academic Year 2016/2017 [23].	The validation results from the assessment of media experts, the feasibility level gets a percentage of 76%, so that the learning media using Lectora Inspire software is feasible to be used as a learning medium.	Based on the results of material validation from material experts, getting a percentage of 83% with a good category.
Muh Arbaun, Tineke Makahinda, Jimmy Lolowang (2021)	Development of Interactive Learning Media Using Lectora on Newton's Laws of Motion [29].	From the results of validation by media experts, the percentage is 92%. As a result, the developed media is feasible to be applied/used as a learning medium.	From the assessment of material experts, the material gets a percentage of 81% in the good category
Khairunnisa, Ishafit, Suritno Fiyanto (2020).	<i>Physics Teaching: Development of Lectora Inspire with Multiple-Representation Approach to</i>	media expert validation got an average score of 82.64% with very valid criteria. Learning media with a	From the validation assessment by material experts, the average score was 95.83% with

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Researcher Name and Publication Year	Research Title	Article	
		Media Validation	Material Validation
	<i>Reduce of Misconception</i> [26].	valid	very valid criteria.
Irwandani, Umarella, Rahmawati, Meriyati, Susilowati (2019).	<i>Interactive Multimedia Lectora Inspire Based on Problem Based Learning: Development in The Optical Equipment</i> [30].	Based on the results of product validation, the feasibility of the product from and for media experts is 93% (very feasible).	Based on the results of validation by material experts is 86% (very feasible).
Siti Mayyuthi'I Ristiani, Triwoelandari, and Yono (2021).	Development of Lectora Inspire Media version 12 on STEM-Based Science Learning to Grow Students' Creative Characters [31].	Based on the results of the assessment of media experts, the percentage was 69% in the valid category.	The results of the material expert assessment get a feasibility percentage of 79% with a valid category.
Sri Rezeki, Ishafit (2017).	Development of Interactive Learning Media for High School Class XI on the Subject of Momentum [2].	The media developed according to the assessment of the media expert Validator received a percentage of 81.98% with a very decent category.	Based on the results of the assessment of the material expert validator, the media got a score of 78.47% with a decent category.
NV Saputro, Masturi, and Supriyadi (2020)	The Effectiveness of Instructional Media Based on Lectora Inspire Towards Student's Achievement [32].	The results of the media assessment get a percentage of 80% with a decent category.	The results of the material assessment get a percentage of 84% with a very decent category.
Validation Average		84.85%	85.14%

Based on the nine national and international journals above, the research and development of interactive learning media Lectora inspire was compiled on the basis of validation results from media experts and material experts as review material. Research conducted by Fitri Rizki et al. carry out the development of problem solving-based media with the results of the feasibility of the material and the media being very feasible [1]. S Latifah et al. conduct HOTS-based research, and the results of the developed media can be applied as learning media [4].

Adi Kurniawan et al. conducting research that aims to see students' motivation to learn physics. The advantage is that they are able to create interactive media and after validating it is said to be feasible to apply. The drawback is that the increase in motivation in students is still categorized as moderate [23]. Research conducted by Muh Arbaun et al. using the ADDIE development model which is used as a guide for making effective tools and infrastructure. The advantage is that the developed media meets the criteria for appropriate learning media to be applied [29].

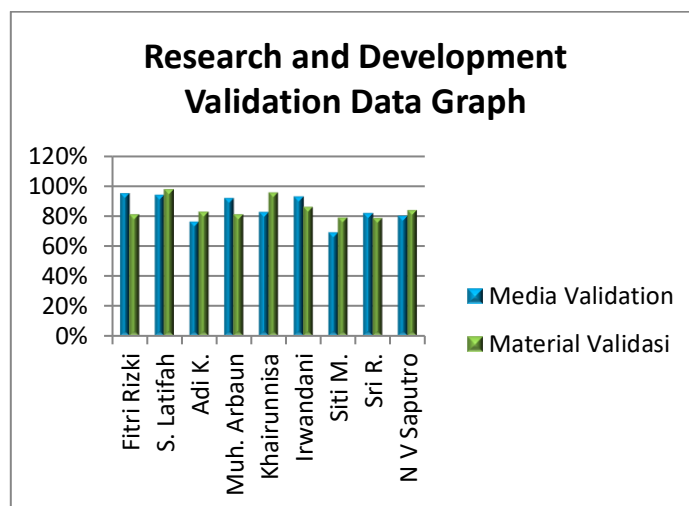
In a study conducted by Khairunnisa et al. The results of the validation that have been carried out show that the multi-representation-based physics learning media with the Lectora inspire application is valid and can be applied in schools with the aim of reducing misconceptions in students, but the research conducted is preliminary research so that further research is needed. [26]. The research product of Irwandani et al. have quality and suitability based on the assessment of experts and can be used as follow-up material in similar research so that the media developed is better [30]. Based on research conducted by Siti Mayyuthi'I Ristiani, et al. get an assessment from media experts get a percentage of 69% with a valid category. And the results of the material expert's assessment got a feasibility percentage of 79% with a valid category.

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Sri Rezeki, and Ishafit validated media and materials with the percentage of assessment from media experts amounting to 81.98% in the appropriate category and the percentage assessment from material experts at 78.47% in the appropriate category, in a study conducted by NV Saputro et al. the results of the media assessment got a percentage of 80% with a decent category and material assessment got a percentage of 84% with a very decent category. Based on Table 1, the validation results can be displayed using a graph, namely:



**Figure 2.** Data of Research and Development Validation Results

Based on the results of a review of the validation of the development of interactive learning media Lectora inspire, it can be concluded that it is valid based on the assessment of experts and can help in the learning process with its features with the percentage of media being 84.85% and material 85.14%. The use of the Lectora inspire application in a valid multi-presentation approach is used as a learning medium.

**Table 2.** Small-scale trial results of lectora inspire interactive research in Indonesia

Researcher Name and Publication Year	Research Title	Article	Research Result
Yoto, Zulkardi, Ketang Wiyono (2015).	Development of Interactive Multimedia for Lectora Inspire Assisted Learning of Gas Kinetic Theory for High School Students (SMA) [33].		Based on the results of field trials, it was found that the students' learning mastery scores reached 80%, greatly impacting the learning outcomes of students.
S. Latifah, Yuberti, V Agestiana (2020).	Development of HOTS-Based Interactive Learning Media Using the Lectora Inspire Application [4].		Based on the results of small-scale trials, the percentage of assessment is 84%, this shows that the media using the Lectora inspire application can or is suitable to be applied as a learning medium
Siti Mayyuthi'I Ristiani, Retno Triwoelandari, and Yono (2021).	Development of Lectora Inspire Media version 12 on STEM-Based Science Learning to Grow Students' Creative Characters [31].		Based on the results of trials on a small scale, obtaining a percentage of 85%, this indicates that the developed media can foster the creativity of students
Achmad Aswal, Hunaidah, and Erniwati (2019).	Development of Lesson Plan (LP) with Lector Inspired Problem Based Learning Software in Improving Learning Outcomes for High Schools [34].		Based on the results of trials that have been carried out on 25 students, the percentage is 76.9%. The learning process becomes entertaining and meaningful, and student performance improves.
Irwandani, S. Umarella,	<i>Interactive Multimedia Lectora</i>		Based on the results of small-scale trials

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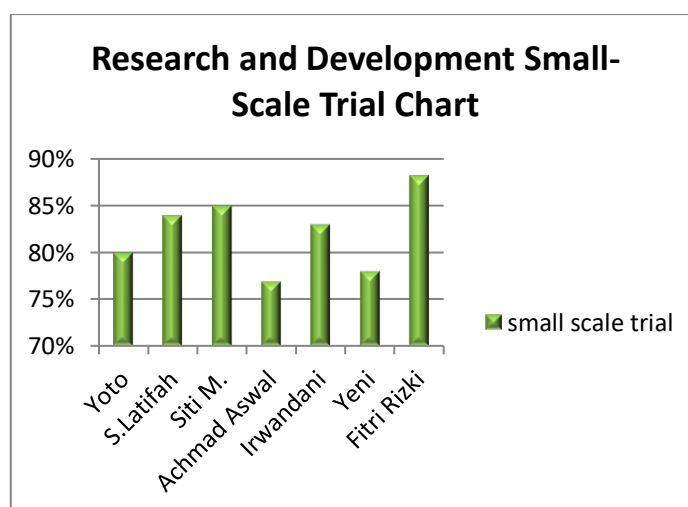
Researcher Name and Publication Year	Article	
	Research Title	Research Result
A Rahmawati, Meriyati, NE Susilowati (2019).	<i>Inspire Based on Problem Based Learning: Development in The Optical Equipment</i> [30].	83% (interesting). Multimedia lectora inspire can be said to be very interesting.
Yeni Megalina, et al. (2020).	Development of Physics Learning Media Using Lectora Inspire on Newton's Law Material for Class X SMA/MA [13].	The small-scale trial carried out got a percentage of 78% with a good category and it can be concluded that the media is feasible to use.
Fitri Rizki, Indra Gunawan, Amirudin (2020).	<i>The Development of Problem Solving-Based Interactive Learning Media Using Lectora Inspire</i> [1].	Small-scale trials carried out obtained an average score of 88.28% with very good categories or criteria
Small Scale Trial Average		82.17%

Based on the seven national and international journals above, the development of interactive learning media Lectora inspire was carried out in the advanced stage of media testing on students. Yoto et al. conducted an evaluation in small groups and got the results that the media developed was categorized as practical. The advantages of the developed media are that when testing is carried out, the level of completeness is high, reaching above 80% and the weakness has not been tested in large groups. [33].

Research conducted by S Latifah by conducting trials in small groups and large groups and the results are that the media can be applied [4]. Research conducted by Siti Mayyuthi'I shows that the media developed can foster the creativity of students with a percentage of 85% [31]. In the research conducted by Achmad Aswal there was an increase in learning outcomes for students and in the learning process it was in the extraordinary category, the learning process became better [34].

In a study conducted by Irwandani et al. the developed product received an attractiveness percentage of 83% in small trials and 80% in large-scale trials. in further research it is necessary to review on different materials. Yeni Megalina conducted a trial and concluded that the media developed was feasible to use [13].

Meanwhile, the small-scale trial conducted by Fitri Rizki, et al. obtained an average score of 88.28% and categorized as very good. Based on the table. Data from small-scale trials of research and development of interactive learning media Lectora inspire on physics subjects in Indonesia, can be displayed using graphs, namely:



**Figure 3.** Data from research and development trials

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Based on the results of the review of the results of the trial development of the interactive learning media Lectora inspire got a percentage of 82.17% and it can be concluded that the learning media Lectora inspire can increase students' learning motivation, the use of media for remediation can reduce the level of misconceptions and improve understanding of concepts, and can improve students' critical thinking skills.

## 2. Conclusions and Suggestions

### *Conclusion*

Based on the results of the reviews that have been carried out, it can be concluded that 1) the results of the feasibility of the Lectora inspire learning media are valid based on several experts and are feasible to apply, with details of the results of the media validation assessment getting an average of 84.85% and the material validation assessment getting an average of 84.85%. an average of 85.14%, and the results of small-scale trials got an average of 82.17% so that the results of the application of media can increase students' learning motivation, increase understanding and affect students' critical thinking processes; 2) the advantages of Lectora inspire media are practical and do not require complicated programming languages, can present interesting materials, images, videos, and animations as well as varied types of questions, and are easily accessible;

### *Suggestion*

Based on the results of the reviews that have been carried out, the researchers would like to provide suggestions, namely: 1) Lectora inspire media needs to be investigated further in large-scale classes to determine the level of effectiveness; 2) Lectora inspire media would be better to develop it on android so it's easier to use; 3) Lectora inspire media development requires creative developers so that the existing features can be used optimally.

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