

Feasibility of Academic Blogs as Learning Media for Electromagnetik Induction Material

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Abstract: Based on pre-observation results, researchers found that student learning outcomes in electromagnetic induction material were still below the standards set by the school. This is due to the lack of learning media used. Therefore, it is necessary to develop innovative media that can support learning, namely blog-based learning media. This research aims to determine feasibility according to media experts, feasibility according to material experts, and test students' responses to the media being developed. This research uses Thiagarajan's R&D steps with a 4D model, namely (Define, Design, Develop, and Disseminate), but in its implementation in this research it is modified to 3D, namely Define, Design, and Develop. The results of data analysis show that from the media aspect it is categorized as very appropriate with a score of 91%, from the material aspect it is categorized as appropriate with a score of 75% and the results of student responses to the media being developed are categorized as very feasible with a score of 95%. Based on this, it can be concluded that the learning media with the Academic Blog is said to be suitable for use in learning electromagnetic induction material.

Keywords: Academic blog; learning media; electromagnetic induction

Introduction

Physics is a science that studies natural phenomena in the context of space and time. From a learning aspect, physics is a subject that relies on skills in the fields of arithmetic, reasoning and logic. Therefore, students must understand physics concepts in an oriented manner. Studying physics requires understanding concepts, as well as various skills to understand them (Suryadi et al., 2022).

Based on the results of pre-observations that researchers have carried out regarding the implementation of teaching and learning at SMA Negeri 1 Capkala, Capkala District, Bengkayang Regency, it is known that researchers see that the learning media at SMA Negeri 1 Capkala is still very limited. The learning media used by teachers are physics textbooks and Power Point (PPT). In physics learning, especially in electromagnetic induction, there are still many students who get scores below the criteria set by the school, namely 72. The students' low

scores were due to students still not understanding the electromagnetic induction material. The lack of use of learning media results in student (Setiawan, 2023) learning outcomes not meeting minimum completeness (Fithriyah & Viyanti, 2023). For this reason, it is necessary to develop learning media to be able to overcome the problems found. Based on previous research, it is known that the media developed for learning in the last 10 years is flash media. Therefore, it is necessary to develop other types of learning media so that they are more varied (Setiawan, 2023).

Looking at the development of the teaching and learning process nowadays using digital and electronic systems, it has proven effective that by implementing and developing this method it can be interesting and facilitate understanding in learning. Therefore, there is a need for ideas to present technology-based teaching models to develop student knowledge (Handayani et al., 2023). For students in today's millennial era, using blog media can make it easier for students to access

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learning material individually and not be confused about technology. Therefore, it is considered important to develop an academic blog. This academic blog, which is applied to one of the physics learning materials, namely electromagnetic induction, is expected to be able to help teachers and students in learning. Based on a questionnaire regarding research subjects' opinions regarding learning with blogs, it shows that learning with blogs shows a positive response (Kahraman, 2021).

Academic blogging is a method that is suitable for use in the learning process in the digital age, namely a technology-based learning method. A blog is an application service on the internet that is similar to a website. This media is very suitable for use in learning at school and at home. With blogs, teachers can carry out learning anywhere and students can easily access learning materials at school using cellphones or computers (Septiana et al., 2021). Blogs have become a medium for distance teaching and learning, which is interactive, dynamic, economical and democratic, blogs provide opportunities to develop appropriate and learning-oriented learning and training. Blogs also represent a new paradigm in relation to learning, especially how learning is presented (Arsyad, 2019). The learning outcomes of students who use blogs are better than those who use textbooks (Susiyantri, 2018). The learning blog that was developed had the highest or most effective category according to student achievement and it could be concluded that this learning blog was suitable for use as a learning tool (Rumahorbo & Nurfajriani, 2022). Students' responses to this blog-based learning media were calculated in percentages, so it was found that 87.73% showed a very strong number if calculated using a Likert scale, this learning media does not only contain text only, but has videos and images (Subangkit & Kustijono, 2013).

Some of the blogs that have been developed previously are vlogs (video blogs) on YouTube channels (Sari, 2020) and only contain writings and images (Latifah & Kuswanto, 2018). Such blogs are felt to be ineffective because they provide less interaction for students. Media that can provide direct experience will help students think critically and master concepts (Septiana et al., 2021). For this reason, it is necessary to develop blogs that can help students learn and provide more experience. The academic blog that will be developed through research is an academic blog that does not only contain text, but contains videos, images, example questions, practice test questions, and rewards. After developing an academic blog for physics learning on electromagnetic induction material, it is hoped that teachers will find it easier to carry out learning. Apart from that, students will be more

motivated to learn, have mastery of physics concepts, and be technologically literate.

Method

The research uses Thiagarajan's R&D steps with the 4D model, namely Define, Design, Develop, and Disseminate. In this research it was modified into 3D, namely Define, Design and Develop. Research subjects include material experts, media experts and students. This research uses data collection techniques and tools, namely in the form of questionnaires. Questionnaires given to material experts and media experts to assess the feasibility of the product being developed. The media aspects assessed include the quality of the product content and the quality of the product appearance, the material aspects assessed include the relationship to teaching materials and product efficiency, and the student response aspects assessed include aspects of the quality of the learning media, as well as aspects of the performance of the academic blog as a learning medium. The data that has been obtained is then analyzed descriptively statistically to draw conclusions.

Result and Discussion

The research, which is development research, was carried out to determine the feasibility of the Academic Blog learning media on electromagnetic induction material. The research stages carried out include Define, Design, and Develop.

1. Define

The define stage is the stage that results from understanding the needs of learning activities in the form of learning objectives to be achieved, students' needs in the learning process, and the need for learning media, as well as understanding a problem. To find out the learning objectives, an analysis of the Class XII High School curriculum was carried out regarding electromagnetic induction material. To find out the problems being faced, researchers conducted in-depth interviews with physics teachers at SMA Negeri 1 Capkala. From the identification results, the learning objectives for electromagnetic induction material, material characteristics, material requirements, implementation of learning at school, and student learning outcomes were obtained. From the gaps seen, a learning media is needed that makes it easier for students to learn electromagnetic induction material, namely an academic blog.

2. Design

After determining the learning objectives, the researcher then designs the product design in the form of components that will be used. The components used in making this product include creating a blog account, YouTube, electromagnetic induction material, and quiz.

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3. Develop

In the develop stage, product development is carried out. At this stage the product design begins to be implemented into a product in the form of an academic blog on electromagnetic induction material. The things that are done in developing an academic blog can be seen in Figure 1. Figure 4 shows the steps for creating an academic blog, starting with creating a blog link until launching.

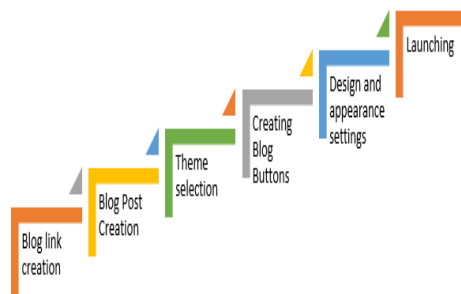


Figure 1. Stages of Creating an Ademic Blog

Products that have been developed and launched are then validated. Validation was carried out by two validators, namely media experts and material experts. In the validation process, several improvements were made to the academic blog material and media, an assessment of the academic blog being developed, and a trial of the academic blog in schools to determine student responses to the learning media being developed. This validation stage was carried out by 2 media experts and two material experts, while the trial was carried out by 30 class XII students at SMA Negeri 1 Capkala. The following are the results that will be presented, namely data from the Academic Blog feasibility assessment from two expert validators and the results of assessing student responses.

a. Validation Result

Data from material and media validation results for the academic blog learning media that is being developed shows that the average validation result is 83,00% with very feasible criteria. Details of the validation of academic blog learning media according

to experts can be seen in Figure 2. Based on Figure 2, it is known that the validation results from the material aspect by the validator obtained a score of 75,00% in the feasible category, while the validation results from the media aspect by the validator obtained a score of 91,00 % in the very feasible category.

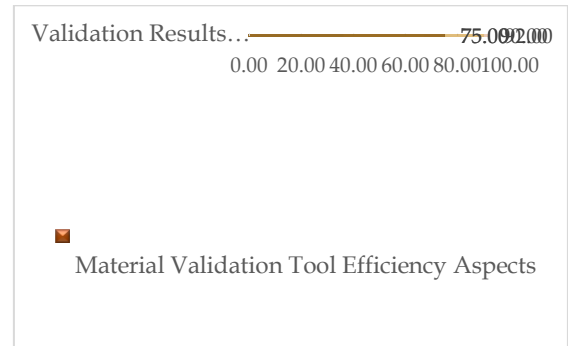


Figure 2. Material and Media Validation Results for Academic Blog Learning Media on Electromagnetic Induction Material

b. The Results of Student Responses

Student response data was obtained after the academic blog learning media was tested in school learning. After conducting the trial, students were then given a questionnaire to determine student responses to the media being developed. Obtaining student responses to academic blogs as a learning medium obtained a score of 95% in the very good category. In detail the results of student responses can be seen in Figure 3.

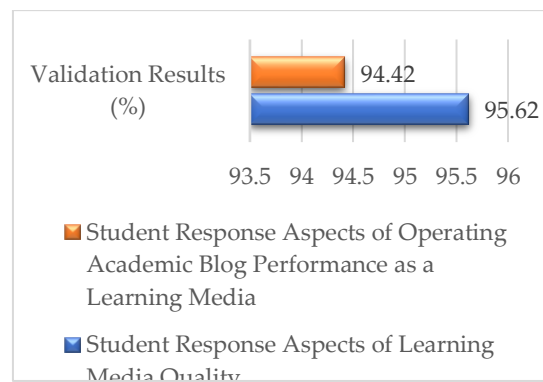


Figure 3. Results of Student Responses to Academic Blog Learning Media on Electromagnetic Induction Material

Based on the stages in research into the development of learning media with academic blogs on electromagnetic induction material, several findings were obtained which served as the background or definition stage. From the curriculum analysis and

understanding of the problem, several things are known as shown in Figure 4.

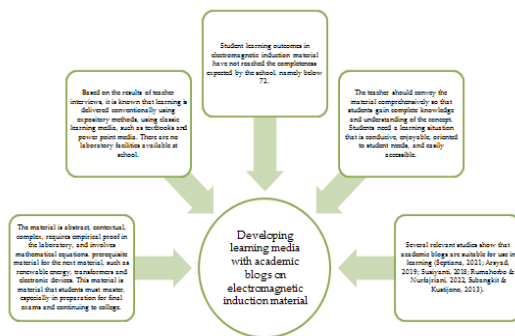


Figure 4. Need for Learning Activities and Problem Identification

Based on Figure 4, information is obtained that there is a gap between various school and teacher limitations and curriculum demands, causing some material to be presented "as is" and resulting in a lack of concept achievement and student learning experiences. Therefore, to meet all students' needs in accordance with the curriculum, learning media is needed. One of them is learning media with academic blogs which can facilitate students in achieving learning goals. Teachers must develop and apply learning techniques to meet the needs of their students (Vitolo & Isaac, 2022). Teachers must have innovative and creative strategies in creating good learning media to attract students' attention (Rohman et al., 2021).

Next, at the design stage, researchers try to design an academic blog that suits students' needs and learning objectives. Product design starts from creating a blog account, then creating material that will be included in academic blog posts when cr Through videos, students can train work skills eating the material and adapting it to basic competencies and indicators according to the curriculum used. Next, proceed with creating a blog button at the stage of creating this blog button, namely sorting the material according to the sub-material that will be developed on this academic blog. The buttons created, namely; Home, About Me, Magnetic Flux, Faraday's Law, Lenz's Law, Inductance/Induction, Quiz, and Bibliography. This was created with the aim of making it easier for readers to use the academic blog that was developed.

The next stage, namely develop. Based on the stages in Figure 4, at the beginning of development, a blog link was created. At the link creation stage, the components used are using Google after entering Google Home, then typing in the search for "blogger", then entering the email account, then creating a title on

the blog page and creating what material will be written on the blog.

Next, is creating a post, namely by selecting a "post" on the blog page. Use the "button" or "button" block to add buttons to the desired area. To fill the button content with text, write the text you want to appear on the button inside the button block. Specify the URL or link that will open when the button is clicked. To add an image, replace the link URL with the desired link and the desired image URL. Button styles, such as background color, text color, size, and so on, can be changed according to preferences.

The choice of theme for an academic blog is adjusted to the material being discussed, as well as the design and appearance. At the stage of creating a theme/title, that is by selecting the "Layout" menu, selecting the "Heading" menu, clicking "Edit" on the "Heading" menu, and writing the title, then save. At the stage of creating the design and appearance of the blog, that is by selecting the "Theme" menu on the blog, then selecting the "customize" menu, then selecting the "change image" menu (the image on this blog display is adjusted to the material being discussed), set the text color, and finally select the save menu listed in the bottom left corner.

Once everything is neat, the final stage is launch. At the launch stage, that is by selecting the "Posts" menu, then selecting the material that was created when creating the blog post, then selecting the "Update" menu, and to view the finished blog, select the "View Blog" menu.

Validation carried out on the material aspect received input in the form of several things that needed to be improved, namely the writing of mathematical equations used in the electromagnetism induction material should be made neater, the material content needed to be better, not monotonous and interesting. The Academic blog that has been launched is validated in material and media by a team of experts. In carrying out validation, several things were revised regarding the design that had been made previously. This revision aims to ensure that the quality of the product developed is maximally useful for assisting learning. Revisions made include, the academic blog needs to include basic competencies and learning indicators, the background must be adjusted to the theme of the material being discussed, the link buttons on the blog are tidied up and sorted according to the indicators of basic competencies, buttons need to be added for each material, need to add a bibliography, tidying up the simple practical video again. Apart from that, the example questions were converted from screenshot images into Power Point (PPT) form and made into videos accompanied by voice explanations. After several improvements have been made, the next stage

is the final assessment of the academic blog by experts from the material and media aspects.

Based on Figure 1, it is known that the academic blog material was declared appropriate by experts. When viewed from the material aspect, the electromagnetic induction material presented through the academic blog already has complete material content because it has been adapted to competency standards and basic competencies. Have clarity with the objects and phenomena presented, have theories that are easy to understand taken from theories sourced from university physics books and other relevant sources. Learning media in the form of blogs is very good to use because it has complete material content because it has been adapted to competency standards and basic competencies and has clarity regarding objects and phenomena (Ningsih et al., 2020)

Academic blogs have been able to help explain physics concepts, especially electromagnetic induction material because they have complete materials such as example questions, learning videos, practical videos and practice questions. Have images that are easy to understand because the images included in the academic blog are equipped with illustrative images and explanations of the images. The included images have contrasting colors and match the background color of the academic blog being developed. There is a significant relationship influenced by elements of learning content, teaching delivery, video design and video quality (Rahman et al., 2022).

Academic blogs have the quality aspect of efficiency and can be said to be worthy because they are effectively used to explain the concept of electromagnetic induction material. When used, it can speed up the effective and efficient teaching and learning process so that students can achieve understanding of the material concepts more quickly. Academic blog learning media on electromagnetic induction material is effective for use anywhere and at any time, whether at school or at home because academic blogs are easy to access repeatedly as long as they have an internet signal.

Assessing the media aspect based on Figure 1, information was obtained that the media aspect was declared very feasible by experts. It is said to be very feasible because it already has a type and size of writing that is easy to read, namely with just one type of writing, Times New Roman and writing size 12. It already has an appropriate learning video because it matches the material presented. The academic blog from the media aspect is said to be interesting because the learning videos have simple practical videos and video explanations of example questions.

Academic blogs make it easier to understand the language because they use Indonesian. It has buttons

and links that are easy to access because the links and buttons that have been prepared for use are very easy to operate. The product display quality is said to be very good because it has an attractive blog appearance, has clear images, clear writing and contrasting colors, namely red, black and orange.

In Figure 2, students' responses to academic blogs as learning media show that the quality of learning media received an average percentage score of 95% in the very good category. It can be said to be very good because learning media can function well when used in learning or when opened using the link that has been given by researchers to students. Learning media is easy to operate by just using a smartphone and using a link. Learning media makes students happy in studying physics, especially electromagnetic induction material because this learning media is packaged based on current developments. Academic blogs are not made to be monotonous or boring because they not only contain material writings, but also have learning videos, have simple practical videos that are related to everyday life, example questions, quizzes, as well as interesting pictures and are equipped with explanations. picture.

Academic blogs developed as physics learning media are suitable for use in learning electromagnetic induction material. In line with previous research, it is stated that students' interest in the Chemistry Academic Blog can very well influence their interest in learning (Khairiyah & Fernandes, 2021) Learning with blogs can positively increase learning motivation and can also improve learning outcomes, speaking skills, creativity, efficiency and effectiveness in creating products, understanding concepts and learning new characters and experiences (Pancawardhani et al., 2022)

Conclusion

The results of data analysis show that from the media aspect it is categorized as very appropriate with a score of 91%, from the material aspect it is categorized as appropriate with a score of 75% and the results of student responses to the media being developed are categorized as very feasible with a score of 95%. Based on this, it can be concluded that the learning media with the Academic Blog is said to be suitable for use in learning electromagnetic induction material.

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