The Effectiveness of the Use of Instagram Social Media in Discovery Learning-Based Learning on Plantae Materials to Increase the Learning Interest of Class X Students

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Abstract

This study aims to determine the effectiveness of the use of Instagram social media to increase the learning interest of class X students in Discovery Learning-based Plantae material. This type of research is a quasi-experiment with a pre-test and post-test control group design. The subjects of the limited trial in this study were 22 students in class X of SMA Negeri 1 Depok. The field test subjects consisted of 36 students of the experimental class and 36 students for the control class of class X of SMA Negeri 1 Depok. Data collection techniques are carried out by interview, observation, questionnaire, and test methods. The data analysis technique used the normality test, homogeneity test, Mann whitney test and n-gain score. The results showed that there was an increase in students' interest in learning according to the n-gain score in the experimental class with a score of 0.17 in the low category. This result is higher than the score in the control class, which is 0.06. Based on this, it can be concluded that the use of Instagram social media in the discovery learning-based learning process on plantae materials can increase the learning interest of class X students.

Keywords: *Instagram Social Media; Discovery Learning; Learning Interests*

Introduction

The development of information and communication technology in today's digital era has a great influence on all fields, both agencies and companies. Almost all companies or agencies need information technology resources to meet the necessary needs in order to get more efficient and effective results. Likewise in the field of education, information technology today has a great impact on the learning process in schools and universities. With adequate information technology in the world of education, it is able to provide knowledge, increase productivity, improve thinking patterns, and maximize the skills of students or students (Criollo-C et al., 2021; Geckova et al., 2023).

The use of information and communication technology in the field of education is increasingly prominent, especially during the coronavirus pandemic in 2020 and until now. As an effort to suppress the spread and transmission of coronavirus infections that cause Covid-19, the central and regional governments have enforced a stay-at-home policy for students at all levels of education in Indonesia. Learning process activities continue to run during the pandemic, where learning activities are shifted from

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face-to-face in the classroom to online learning (online or e-Learning). This change clearly has implications for the adaptation that needs to be made by both teachers, students, and the community (including parents and internet service providers) in carrying out online learning, where situations and conditions like this are required for all teachers or educators to replace learning using e-Learning or through online media from various platforms to support the implementation of learning. The use of the right learning media during the online learning period will greatly help students to still be able to follow the learning routine properly and optimally (Jamilah et al., 2021). Based on the results of observations and interviews at Senior High School 1 Depok, it is known that during online learning, the school uses a Learning Management System (LMS) such as edmodo and a special LMS from the school. In addition to LMS, they also use other media or platforms such as Youtube, google meet, zoom, learning videos and even social media platforms. The media or platform, according to Pikhart & Botezat (2021) stated that some of the media used often have shortcomings, both in use and in a drab appearance. Therefore, many educators are innovating with social media that is interesting and easy to use as an innovative and not boring online learning medium. One of these social media is Instagram.

The use of Instagram as an online learning medium is perfect for everyone because of its ease of use. The appearance of the application is very attractive and easy to understand, users can open the application on a smartphone or personal computer (PC) has features that can support the online learning process or activities. Additionally, Instagram offers learners the opportunity to create their own content and products, upload them or share them with a wider audience to understand the material being studied or understood. Of course, this has a positive impact on teenagers and school children in using social media. According to Rejeb et al., (2025) Instagram is a cross-platform social network with daily active users reaching more than 1 billion people worldwide, serving in the form of photo and video sharing services and social networks. Instagram offers various features such as Instagram stories, live streaming, reels, by always updating existing features according to user needs. The presence of the Instagram feature combines an individual's personal space with the public space of social media. Users can share their activities with real-time selfies and selfies. Users can also share their activities, thoughts or feelings by uploading them to Instagram Stories, Live Streams or Reels (Chen, 2021). This can be used in learning such as processing more interesting and not boring material, presentations and other things. The use of Instagram social media with various features in supporting online learning, such as live streaming, can function as video conferencing to facilitate online interaction between teachers and students as well as presentation activities that can be carried out in the learning process. The Instagram Posts Feed feature also allows students to collect assignments or project works that can later be shared through Instagram social media in the form of posts. The existence of the Instagram quiz filter feature also makes students can study or take learning quizzes more fun. Adopting Instagram social media as a learning medium makes it easier for teachers to see students' learning progress more concisely and in a timely manner. The more interesting the learning media and the right methods used by teachers in the teaching and learning process, the more likely it is that students will receive the subject matter delivered. Thus, this will of course affect students' interest in learning. Based on the results of the preliminary study, it is also known that 98.30% of students who have an Instagram account and use Instagram quite often in their daily lives are 74.57%.

A problem that often arises in online learning is the emergence of boredom in students in participating in learning. The activities or learning patterns carried out are considered too monotonous, less challenging and less interactive so that students' interest in learning is low. Opinion Nuraisyah et al., (2021) causes of low interest in learning in terms of physiological aspects of students' health factors can affect interest in learning if the student has health problems, physical disabilities. The low interest in learning of students from the aspect of the school environment used is not appropriate, such as the applicable curriculum, teacher teaching methods, relationships between students and students, relationships between teachers and students, and media or learning tools.

Based on the results of an interview that has been conducted with one of the biology teachers at Senior High School 1 Depok, it is known that there are several biology materials that are difficult for students to understand, one of which is Plantae. This is because the Plantae material in class X even semester has quite a lot of sub-chapters and is quite broad so that it takes longer to learn the Plantae material. Students are also quite difficult in understanding the material taught by teachers, especially the classification of plants and life cycles. Based on the results of the research study at Senior High School 1 Depok, it shows that in biology material, especially Plantae, students experience difficulties or obstacles in understanding the material by 77.96%. The percentage of difficulties per sub-material by students was plant characteristics 15.25%, moss (Bryophyta) 20.33%, fern plants (Pteridophyta) 28.81%, seed plants (Spermatophyta) 37.28%, and phenetic and phylogenetic analysis in plants 71.18%. Based on the results of the preliminary study, it is also known that the percentage of causes of this includes the method or way of teachers in teaching is less interesting 27.11%, the teaching materials or LKPD used are less interesting 11.86%, there are no other learning resources because only package books are available 11.86%, the material is too much and only memorized 86.44%, the material is difficult to understand 15.24%. These difficulties or obstacles will certainly greatly affect the learning outcomes obtained by students to be less than optimal. This can also be seen from the results of the previous Plantae test where the value of the students' test results in the material is below the Minimum Completeness Criteria (KKM) 75 with the average score of the student's daily test is 66.17 so that it has not reached the expected completeness standard. Based on the results of observations in class X of Senior High School 1 Depok, in the learning process, the methods carried out by the teacher, namely lectures and questions and answers, were assisted by power point media and student package books. This results in the learning process becoming passive and monotonous because students only listen to explanations from the teacher. In addition, students are busy with their own activities, do not pay attention and prefer to create their own forum to tell stories with friends nearby, there are also some students who use mobile phones during the learning process without paying attention to explanations from teachers, open social media, play games and some sleep. Therefore, in order for students' interest or desire to participate in learning increases and it is easier to understand the material taught in class, subject teachers must be creative and be able to choose the right media, methods, and approaches to the student's condition, so that a quality, efficient, and attractive learning process can be created that makes the learning process enjoyable. One of the things that can be done is to use the discovery learning learning model. Discovery learning is a learning model where students are guided to find and investigate on their own about a concept so that the knowledge and skills that students have are not the result of remembering but from the results of students' own findings (Amin et al., 2022; Raya et al., 2024). Other opinions Kudus & Java (2022) stated that the Discovery Learning learning model is an important component in the constructivism approach so that this learning model is appropriate for use in learning.

Based on the problems that have been described, the purpose of this study is to determine the effectiveness of the use of Instagram social media to increase the learning interest of class X students in Discovery Learning-based Plantae material.

Methodology

This type of research is a quasi-experiment with a pre-test design and a post-test control group design. The subjects of the limited trial in this study were 22 students of class X of Senior High School 1 Depok. The field test subjects consisted of 36 students in the experimental class and 36 students for the control class in class X of Senior High School 1 Depok. Data collection techniques are carried out by interview, observation, questionnaire, and test methods. The data collection instrument used an interview guide sheet, a questionnaire for analyzing student needs, an observation sheet for learning implementation, and a questionnaire for learning interests. Data analysis techniques used normality test, homogeneity test, Mann whitney test and n-gain score.

Results and Discussion

Results

The effectiveness of the use of Instagram social media in discovery learning-based learning on students' learning interests was analyzed using non-parametric statistics using the Mann Withney test. The results of the Mann Withney test can be seen in Table 1 below:

Table 1. Results of the Mann Whitney pretest of learning interest

	Learning Interest
Mann-Whitney U	46.,000
Wilcoxon W	1127.000
Z	-2.1098
Asymp. Sig. (2-tailed)	0.035

The above output results show that p < α value (0.035 < 0.05), meaning that there is a significant difference in the learning interest of students in the control class and the experimental class. This shows that the use of Instagram social media in discovery learning-based learning is effective in increasing students' interest in learning. The increase in students' interest in learning in the control class and experimental class can be determined through the Normalized Gain Score (N-gain score). The data on the n-gain score of students' learning interest is presented in Table 2 below:

Table 2. Data on increasing students' interest in learning

Class	Results of Learning Interest		N-Gain Score	Category
	Pretest	**Postest**		
Control	68,08	69,86	0,06	Low
Experiment	68,53	74,47	0,17	Low

Based on Table 2, it can be concluded that there is an increase in learning interest in the control class and the experimental class. The n-gain score in the experimental class was higher than that of the control class. In the control class, the n-gain score of learning interest was 0.06 in the low category, while the n-gain score in the experimental class was 0.17 in the low category. Based on these results, it can be concluded that the use of Instagram social media in discovery learning-based learning has an effect on students' learning interests. The score of increased learning interest in the control class and the experiment before and after the learning process can be seen in the following graph:
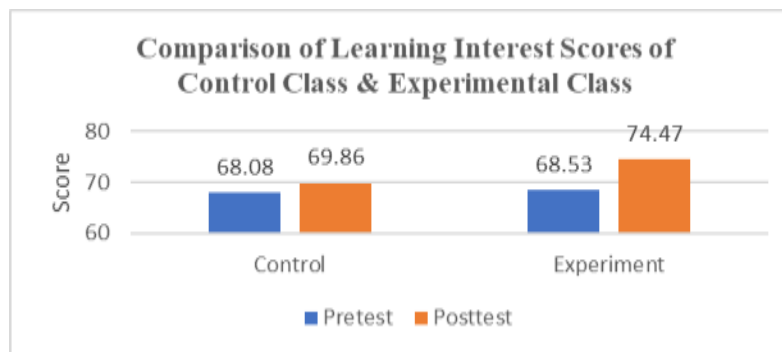

Figure 1. Comparison diagram of the average learning interest in the control and experimental classes

Based on the graph above, it shows that the average score of learning interest in the control class and the experimental class has increased, but the percentage of increase in the experimental class is higher than that of the control class.

Discussion

The effectiveness of the use of Instagram social media in discovery learning-based learning developed to increase students' interest in learning was carried out through a large group trial. The results of the analysis of large group trials in the experimental class showed that the use of social media Instagram based on discovery learning was effective in increasing students' interest in learning. This is because the design of the use of Instagram social media in discovery learning-based Plantae learning is supported and equipped with image, photo and video content which greatly supports the creation of learning activities that are not monotonous so that students can be interested and easily understand the material. This is supported by the theory put forward by Amelia & Harahap (2021) which states that interest can arise due to external appeal such as attractive appearance and ease of use.

Apart from design, the use of Instagram social media in the learning process such as Instagram quiz filters that are available and can be used many times can certainly encourage students' curiosity regarding the material studied. Students can try to answer the quizzes available on the Instagram quiz filter where the Instagram quiz fitler will also display the correct answers to the questions displayed. The quiz can be done repeatedly and has a variety of different questions so that it can encourage students' curiosity and attention in learning which can have an influence on the students' interest in learning. In line with the research conducted by Kurniawan et al., (2021) who said that one of the internal factors that affect students' interest in learning is curiosity. One of the students' attention in participating in learning is because it is driven by curiosity from within themselves, where this curiosity needs to be stimulated so that students can always pay attention to the subject matter given, one of which is by using the media (Abdelghani et al., 2022).

Based on research that has been carried out, the use of Instagram media on the subject of plantae with the discovery learning model can also increase students' interest in learning in the aspects of pleasure, interest, attention and involvement of students (collaborating) in learning so that the learning that takes place will be more meaningful and can improve student learning outcomes. This is in line with research by Ekaputra (2023) that the application of the Discovery Learning model can improve students' collaboration skills. Collaboration skills are important for students to help them stay competitive and by working together to make it easier to solve problems (Laakso et al., 2021; Mydin et al., 2021). Collaboration is one of the learning processes that can be done in groups and discuss several things and knowledge, through discussion activities such as conveying suggestions/ideas, listening and listening to discussions and respecting each other's opinions (Michaelsen et al., 2023; Supena & Hariyadi, 2021). Collaboration skills make a learning group more harmonious and help each other between group members so that group success is easily achieved. Groups that run in harmony will make it easier for students to solve and solve problems (Herrera-Pavo, 2021). Research Owens & Hite (2022) stated that in problem solving, students communicate and collaborate with each other so that they can achieve the desired learning goals.

Conclusion

Based on the results obtained from the research that has been conducted, it can be concluded that the use of Instagram social media in the discovery learning-based learning process for Plantae material can increase students' interest in learning.

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