

Analysis of students learning interest in biology subject matter of viruses in grade X senior high school

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Abstract

Virus concept biology subjects whose material is abstract in nature can generally reduce students' interest in learning. Students' interest in learning affects their learning outcomes both academically and non-academically. This study aims to analyze the learning interests of students at SMA Negeri 2 Bilah Hilir in the subject of virus concept biology. The samples in this study were students in class X MIA-1 and X MIA-2 with a total of 65 people. This type of research is qualitative research. The data collection technique uses a questionnaire of students' learning interest, and interviews as supporting data. The results showed that the indicators of students' feelings of pleasure in participating in learning were as large as and the involvement of students in learning received the "most" category, while the indicators of students' attention to the lesson and students' interest in learning received the "almost all" category. Based on the results of questionnaires and interviews it was concluded that the media, methods, and supporting facilities in schools in an integrated manner affect students' learning interest.

Abstrak

Mata pelajaran biologi konsep virus yang materinya bersifat abstrak umumnya dapat menurunkan minat belajar peserta didik. Minat belajar peserta didik mempengaruhi hasil belajarnya baik secara akademik maupun non akademik. Penelitian ini bertujuan untuk menganalisis minat belajar peserta didik di SMA Negeri 2 Bilah Hilir pada mata pelajaran biologi konsep virus. Sampel dalam penelitian ini adalah peserta didik kelas X MIA-1 dan X MIA-2 dengan total sebanyak 65 orang. Jenis penelitian ini adalah penelitian kualitatif. Teknik pengumpulan data menggunakan angket minat belajar peserta didik, dan wawancara sebagai data pendukung. Hasil penelitian menunjukkan indikator perasaan senang peserta didik dalam mengikuti pembelajaran sebesar dan keterlibatan peserta didik terhadap pembelajaran memperoleh kategori "sebagian besar", sedangkan indikator perhatian peserta didik terhadap pelajaran dan ketertarikan peserta didik terhadap pembelajaran memperoleh kategori "hampir seluruhnya". Berdasarkan hasil angket dan wawancara disimpulkan bahwa media, metode, dan sarana pendukung di sekolah secara terintegrasi mempengaruhi minat belajar peserta didik.

A. Introduction

Education is the foundation for the next generation of the nation in the era of society 5.0. Education graduates are required to have high-order thinking skills (Nesi & Akobiarek, 2018). Education is an interaction that occurs between teachers and students who are assisted by various learning resources (Fernandez et al., 2021). Education can also be used as a place to find and grow potential human resources (HR), in this case there are students (Mawati et al., 2023).

The results of the learning process in educational institutions that are often considered are learning outcomes (Syafi'i et al., 2018; Harefa, 2020; Ula et al., 2021). However, there are several factors that influence it, including students' interest in learning itself (Adawiyah, 2019; Muliani & Arusman, 2022). Interest in learning is a desire that can generate attention due to something interesting (Khairina et al., 2017; Sari et al., 2021).

Desire or interest determines student learning outcomes both academically and non-academic (Amrullah, 2018). Interest as a perspective that starts from one's feelings to carry out an activity and make it happen, including in the learning process (Yohana et al. 2022). Students who have a high interest in learning will definitely try harder than students who have a low interest in learning (Amelia et al., 2022). Likewise, if learning is not designed to empower students' interests, students will not learn well because it is not interesting for them (Kurniasih, 2020).

When studying, students who have an interest in a particular subject will tend to focus their attention continuously during the learning process (Sholehah et al., 2018; Ariyanti & Syarifah, 2021). Interest is a psychological aspect that affects everyone in learning (Korompot et al., 2020; Muliani & Arusman, 2022), because the interest that each individual has will cause a feeling of liking for something or activity without any compulsion (Sukmawati, 2019). Interest in learning affects students' desire to be active until the final stage to achieve learning goals (Charli et al., 2019).

Interest in learning is needed in subjects that demand attention and thoroughness such as biology. Students in studying biology are required to understand concepts (Fithri et al., 2021), relate concepts and facts in life (Wulandari, 2021), and also think analytically (Talakua & Sahureka, 2021). Understanding concepts, connecting concepts with facts, and analytical thinking requires students' interest in participating in biology lessons (Irwandi & Fajeriadi, 2019).

Much of the material presented in biology subjects is complex to learn (Oktavian & Aldya,

2020). One such material is about viruses. Viral materials are becoming more popular when many countries are experiencing the Covid-19 pandemic. According to Tasyari et al. (2021); Ummah (2021) virus material is still considered abstract and relatively complex so students find it difficult to understand. According to Lestari (2020), complex learning materials can cause boredom and reduce students' interest in learning.

Students' interest in learning about viruses has been studied from various perspectives. The research results by Luzyawati et al. (2020); Nasir et al. (2022) shows that students' learning interest is influenced by the learning methods used. Students who actively discuss, get the same opportunity to speak and listen, and respect the opinions of discussion group friends will have a positive impact on learning outcomes. The results of research by Agustine et al. (2020) shows the low interest of students in making observations and carrying out assignments according to the rules of observation making the results of the assessment of critical thinking skills low.

Based on this research, students' interest in learning affects their learning outcomes and thinking skills. Research that focuses on analyzing students' learning interest in studying viral material is needed as a basis for following up to solve this problem. Based on interviews with biology teachers at SMA Negeri 2 Bilah Hilir, research on analyzing students' interest in learning about viruses has never been carried out. Therefore, this study aims to analyze students' interest in learning while participating in biology lessons on viruses.

B. Material and Method

This type of research is descriptive qualitative. Samples were collected through saturated sampling technique. According to Sugiyono (2010), saturated sampling is a sampling technique that involves all samples. The samples involved in this study included students in class X MIA-1 with a total of 33 people, and class X MIA-2 with a total of 32 people in SMA Negeri 2 Bilah Hilir, Sidomulyo Village, Bilah Hilir District, Labuhanbatu Regency.

This research was conducted from October 2022 to January 2023. The data collection method was carried out through a student response questionnaire. The student response questionnaire includes questions about students' feelings, concerns, interests, and involvement in learning which consists of 30 questions. Interviews were conducted with students after learning activities to

collect data about students' experiences in participating in viral learning.

Analysis of student learning interest questionnaire data was calculated by percentage and then categorized. The average percentage of students' answers per question item was calculated using Formula 1. Then the average percentage of students' answers per indicator and as a whole was determined using Formula 2. The interview data were analyzed descriptively.

$$P_i = \frac{\sum f_i P_i}{n} \times 100\% \dots \dots \dots \text{Formula 1}$$

Information:

- P_i = The average percentage of student answers for the i-th question item
- f_i = The frequency of students' answer choices for the i-th question item
- P_i = Percentage of student answer choices for question item i
- n = Number of students

$$P_{\bar{T}} = \frac{\sum P_i}{k} \times 100\% \dots \dots \dots \text{Formula 2}$$

Information:

- $P_{\bar{T}}$ = The average percentage of student answers per indicator or overall
- P_i = The average percentage of student answers for the i-th question item
- k = Number of question items

The percentage of students' learning interest questionnaires is interpreted using the categories according to Table 1.

Table 1 Category Interpretation of the Student Learning Interest Questionnaire Results

Percentage	Category
$P = 0\%$	No one
$0\% < P < 25\%$	Few
$25\% \leq P < 50\%$	Almost half
$P = 50\%$	Half
$50\% < P < 75\%$	Most
$75\% \leq P < 100\%$	Almost all
$P = 100\%$	All

(Source: Adapted from Lestari & Yudhanegara, 2017)

C. Results and Discussion

The results of the questionnaire on the learning interest of SMA Negeri 2 Bilah Hilir students in the subject of virus concept biology can be seen in Table 2 with an average interest percentage of 76.26%. In addition, interviews were conducted with students after attending the virus concept lesson to strengthen the questionnaire result data. Interview data can be seen in Table 3.

Based on Table 2, the percentage of the results of the questionnaire for each indicator of student interest in learning is almost the same,

where the highest is an indicator of student attention to the lesson, and the lowest is an indicator of student involvement in learning. Classically, the average percentage of students' interest in learning is 76.26% in the "almost all" category. This percentage shows that almost all students in SMA Negeri 2 Bilah Hilir have a high interest in the biology concept of viruses. Even so, students who enjoy participating in lessons and are actively involved in learning activities are still in the "most" category but have almost reached the "almost all" category. Feelings of pleasure and involvement of students get scores below the other two indicators because learning activities have not used media and learning resources optimally.

When compared with previous studies, there are similarities and differences. The results of the research by Fernandez et al. (2021) showed that the indicators of student interest in learning at SMAN 1 Ujung Batu used Powerpoint in biology learning with the highest percentage being student involvement, compared to indicators of fun, attention, and interest. Research from Rulita et al. (2021) showed that students' interest in studying biology at SMAN 1 Unggulan Muara Enim online and offline remained high even though students also experienced boredom because learning methods were less attractive. The research results by Yohana et al. (2022) shows that students' interest in learning in biology at Kasih Depok High School remains high and is not affected by the co-19 pandemic. Unlike the results of research from Harefa et al. (2022) which explains that students' interest in learning at SMA Negeri 2 Namohalu Esiwa has decreased because learning is carried out online. Besides that, the results of Kurnia et al. (2021) showed that class XI students at Purwodadi State High School had a high interest in learning immune system material online, but some still experienced a loss of concentration because they opened other applications. Students become more interested in biology material when the teacher shows videos or pictures.

In addition to the influence of the media and learning resources, based on these studies, students' interest in learning is also influenced by learning methods, online or offline learning processes, student saturation, and disrupted learning concentration. Non-innovative learning media can make students bored. Learning resources should also not only be from books, but also observing videos or direct observations in the school environment. Learning methods that are no longer effective need to be changed by applying other methods so that students become curious and enthusiastic about being involved in learning

activities. In addition, online learning which was originally carried out during the Covid-19 pandemic is now not implemented, so learning activities are returning to normal and are carried out in a more planned manner.

The quality of learning media used to study biology affects students' learning interest (Maryani & Sopiandah, 2019; Tobamba et al., 2019; Anggraeni et al., 2021). Learning media does not only function as a tool but also as part of the

learning process which is integrated with appropriate learning methods and strategies (Oktafiani et al., 2020). Various learning strategies can increase students' interest in learning (Endra et al., 2020; RimahDani et al., 2023). In addition to strategies, students' interest in learning can also be increased using interactive learning resources (Fuad et al., 2020), based on local potential (Irwandi & Fajeriadi, 2019), and literacy based on students' daily environment (Harahap et al., 2023).

Table 2 Results of Student Study Interest Questionnaire at SMA Negeri 2 Bilah Hilir

No	Indicators of Student Learning Interest	Percentage	Category
1	The feeling of pleasure of students in participating in learning	74.57%	Most
2	Student attention to the lesson	78.37%	Almost all
3	Student interest in learning	77.58%	Almost all
4	Student involvement in learning	74.51%	Most
Average		76.26%	Almost all

Table 3 Results of Interviews with Students about Learning Virus Material

No	Question	Answer
1	How do you think about learning about viruses?	Interesting, fun, because studying living things that are invisible to the eye, so that we can know that there are living things that cannot be seen using the eye directly.
2	What are the obstacles in learning viral material?	The problem for now is that we cannot practice because of limited facilities and infrastructure, such as laboratory rooms, microscopes and other facilities.
3	What are the hopes for the future in learning viruses?	The hope is that we can practice directly and see firsthand what the name of the virus is, of course it will again require exact properties, and the hope is also for practical properties to be available, so that we don't take too many notes while studying.
4	What do you think of the media used in learning viruses?	For learning media, they still use book media, even though it is already in the electronic era, so it seems less interesting, especially when learning viral material, you should practice it. Back again because of the limitations of tools and properties, so we just recorded it from the package book.
5	Do advances in technology and digital devices help in learning viral material?	Very helpful, because when we can't see directly and can't practice, so we use electronic media to increase our knowledge to learn about viruses, for example we find out what viruses are like using YouTube media, like that for example.

Based on the results of the interviews in Table 3, it is known that students are interested and quite happy in learning about viruses, because it opens up insight that in this universe there are living things that are invisible to the eye. These living things need to be observed with the help of special tools such as a microscope, but the facilities and infrastructure in schools are not sufficient. Learning is still not optimally utilizing technological advances so that it seems less attractive. For students, in the current digital era, electronic media such as videos are very useful because they can display illustrations of the shape

of the virus and its infection process in the human body.

The results of these interviews support the results of the student interest in learning questionnaire. The indicator of students' enjoyment in participating in learning received the second lowest score because the learning media used was still in the form of textbooks, while students' expectations of the learning media used were electronic or digital based, and students even found out about viruses themselves via YouTube. In addition, the indicator of student involvement in learning received the lowest score because there

was no practice and inadequate supporting facilities and infrastructure.

Several studies have proven that electronic or digital-based learning media has a significant influence on students' learning interest. Irwanto et al. (2021) researched the implementation of Macro Media Flash-based biology learning media, and it was proven to be able to motivate students to take part in a series of learning. The research results of Hidayatulloh et al. (2022) shows that electronic-based learning media in the form of learning games can increase students' interest and learning motivation. Research from Julianti et al. (2022) shows that based on interview results it is known that multimedia-based learning media makes students more active and enthusiastic in learning biology.

In addition to using digital learning media, several studies have also shown that various learning methods or strategies also have a positive influence on students' learning interest. The results of Tammu's research (2017) show that there is a link between various learning methods and students' learning interests in biology subjects. Research Amaliya et al. (2022) shows that learning strategies that demand student activity both in groups and with other groups have a positive effect on students' learning interest. The research results of Martin et al. (2021) also shows an increase in students' interest in learning through changes in learning strategies.

The learning interest of the students of SMA Negeri 2 Bilah Hilir on the concept of the virus as a whole fulfills the "almost all" category, however, innovative learning media, varied learning methods, and the carrying capacity of facilities at school are still needed. These three points are integrated with each other in influencing students' learning interest in biology subjects. According to Rahmadani et al. (2017); Ariyanto et al. (2018); Ubaidillah et al. (2022) media, methods, and learning facilities in schools affect students' learning interest.

D. Conclusion

Overall, the percentage of indicators of students' interest in learning at SMA Negeri 2 Bilah Hilir in the subject of virus biology based on the results of the questionnaire met the "almost all" category of interest. However, based on the results of the interviews, learning became less interesting because the learning media used were only textbooks, there were too many notes on material, and the facilities did not yet support practice. Media, methods, and the carrying capacity of

facilities in schools in an integrated way affect students' learning interest.

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