Students' Learning Interest during Online Biology Course: A Correlation Study

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Abstract: The objective of this study is to know the correlation between online learning and students' learning interest on biology course. This study is a correlational quantitative research. The sampling technique is purposive sample with a total sample of 164 students. The technique employed for data collection is preliminary observation, interview, and questionnaire. The data analysis technique employed used are descriptive statistical data, data normality test, linearity test and Pearson product moment correlation test. The result of this study revealed that there is a significantly positive correlation between the online learning and students' learning interest on Biology course with correlation coefficient (r) = 0.675 which was considered as strong correlation at level of 0.5% with the score of $t_{count} > t_{table} = 11.671 > 1.654$ in other words, the better the implementation of online learning, the better the students' learning interest on Biology Course. Teachers' innovation in online learning can support students learning interests because learning interests are not permanent so teachers must have the ability to create interesting online learning.

Keywords: online learning, students' learning interest, biology.

Abstrak: Penelitian ini bertujuan untuk mengetahui hubungan pembelajaran daring dengan minat belajar siswa pada mata pelajaran biologi. Jenis penelitian ini kuantitatif korelasional. Teknik sampling purposive sample dengan jumlah sampel 164 siswa. Metode pengumpulan data yang digunakan observasi awal, wawancara dan angket. Teknik analisis data statistik deskiptif, uji normalitas data, uji linearitas dan uji korelasi Pearson product moment. Hasil penelitian menemukan terdapat hubungan positif dan signifikan antara pembelajaran daring dengan minat belajar siswa pada mata pelajaran biologi dengan koefesien korelasi (r) = 0,675 kategori hubungan kuat pada taraf 0,5 % dengan nilai $t_{hitung} > t_{tabel} = 11,671 > 1,654$ dengan kata lain semakin baik pelaksanaan pembelajaran daring, semakin baik pula minat belajar siswa pada mata pelajaran biologi. Inovasi guru dalam pembelajaran daring dapat menunjang minat belajar siswa dikarenakan minat belajar bersifat tidak permanen sehingga guru harus memiliki kemampuan menciptakan pembelajaran daring yang menarik.

Kata kunci: pembelajaran daring, minat belajar siswa, biologi.

▪ INTRODUCTION

Education has been moving rapidly following the development of era which was remarked by the advancement of technology. These changes are affected by the globalization era (Ananga, 2020). Globalization challenge in industrial revolution 4.0 in educational milieu is remarked with online learning. The effect of the pandemic of Covid-19 creates changes from face-to-face learning at school becomes online learning with the help of technology (Almanar, 2020; Nartiningrum & Nugroho, 2020; Rajab et al., 2020; Suriyanti, 2021). The online learning is a learning method that refers to the use of internet technology to send a series of solutions which can improve skills and knowledge (Baticulon et al., 2021; Ferri et al., 2020; Fuadi et al., 2020; Octaberlina & Muslimin, 2020; Simamora, 2020). That can give massive change in the teaching and

learning method which was initially traditional or face-to-face becomes online learning (Soni, 2020).

Online learning is characterized as a distance learning which teach the students to be more independent, changing the passive to active engagement (Anaelka, 2018). Online learning causes the lack of direct face-to-face interaction between teacher and students (Shofwan et al., 2021) so that the assistance from a media or a platform makes an interaction possible between the teacher and the students by using online-based teaching and learning in different places (Daryanto & Karim, 2017). Online learning is related to the Learning Management System (LMS) as a software which was developed to distribute and deliver the materials. Teachers can make an interesting and fun online learning that makes it easier for the students to understand the materials. LMS can run with the help of internet-based teaching and learning so that it can be accessed anywhere and anytime (Alfina, 2020).

Based on the initial observation conducted through interview with Biology teacher in the City of Gorontalo, it was stated that the Covid-19 attacks at schools in Gorontalo is the reason why the execution on online learning started from April 2020 to date. The implementation of online learning causes the situation of teaching and learning which was initially only happened at school, shifted to the virtual learning. Before delivering the lesson, the teacher has sent the teaching materials to be learned by the students independently and will be discussed later on through Google Meet/Zoom. Meanwhile, there are only few students who responded the materials sent prior to the class. Then, during the completion of the task, many tasks submitted were overdue. Thus, the teachers attempted to give guidance through both WhatsApp Group and calling students' parents if the assignments were not completed. The problems triggered the learning interests among the students when coming to the online class.

Studies related to online learning (Yunitasari & Hanifah, 2020) affect students' learning interest. Students feel bored then they were not doing it together with their friends and teachers during the learning process. Another research (Zulfahtul et al., 2021)stated that the higher the learning interests of the students, the higher the learning result during the online leaning on biology course. Teaching and learning biology is basically a process that can lead the students to the learning objectives. Biology plays a role as a tool to reach the learning objectives as a knowledge which can be identified through an object or symptoms and knowledgeable process guiding to a biological concept (Arimpi, 2013). Learning interest is a condition that shows a tendency on attention or interest towards something. (Nurhasanah & Sobandi, 2016) added that interest is an obedient attitude towards students' learning success on their learning process. Interest has a significant effect towards students' learning success (Mardianti, 2021). Interest in online learning is related to willingness and preference in learning (Joannes et al., 2022). Thus, it can be defined that an interest in learning is a preference in learning process and related to the success of learning.

According to the background, this study aims to know the correlation between online learning and students' learning interest on Biology Course in grade XII City of Gorontalo. This study is expected to be fruitful and be a reference for educators in doing the online teaching and learning.

- **METHOD**

This study employed a quantitative method with correlational approach. Sugiyono (2017) stated that a quantitative research method was used to examine a population or sample by collecting the data using a research instrument by testing the hypotheses. While correlational approach is defined as a research that aims to know the correlation level of two or more variables without adding or manipulating the data (Duli, 2019).

This study was conducted in one of state senior high schools in Gorontalo City, that is SMA Negeri 1 Gorontalo and SMA Negeri 2 Gorontalo which was conducted from June to November 2021. The population of this research are the students from grade XII majoring in natural science of senior high schools in Gorontalo City. According to Taniredja & Mustafidah (2014) the collection of the sample was 10-20% or 20-25% or more based on researcher's capability. The sampling technique in this study employed a purposive sampling or purpose-based sampling. This technique was done by considering the abundant population and the researcher took 35% of the sample from the population. Thus the total sample was 164 out of 466 students.

Data Collection Technique

The data collection technique on this research includes the initial observation, interview, and questionnaire. The initial observation is conducted to know the condition of the school and the learning process. The interview was conducted to reveal information on the execution of teaching and learning particularly the online learning. It was continued with spreading the questionnaire to the students. Sugiyono (2017) stated that questionnaire is a technique of data collection which can be administered to a big sample. The questionnaire used in this study contains the written questions which were administered online through Google Forms for the respondents. The respondents were from SMAN 1 Gorontalo, that was grade XII majoring in natural science consisting of 82 people and SMAN 2 Gorontalo consisting of 82 people.

Instrument's Try-Out

The try out was conducted to measure the appropriateness before used in the research. The chosen sample was not used for the research so that the sample was collected from different location that was in SMAN 4 Gorontalo with total sample 30 students. The instruments were tested and analyzed by using validity and reliability test. The result of the validity calculation revealed a significance level 5% (r table < r count). The valid questions was then measured for its reliability by using Cronbach Alpha. If the value of Alpha is > 0.60, it is considered reliable. The criteria of the reliability are presented in Table 1.

Reliability Criteria

The coefficient R if at the level obtained a value between 0.80 < 1.00 then it is in the "Very High" category, if the value obtained is 0.60 < 0.80 it is in the "High" category, if the value obtained is 0.40 < 0.60 it is in the "Medium" category, if the value obtained is 0.20 <0.40 is in the "Low" category, then if the value obtained is -1.00<0.20, then it is in the "Very Low" category. (Sujarweni, 2014).

Instrument's Blueprint

The instrument's blueprint is the indicators of the variable which will be broken

down become questions items. It is important for the researcher as the guidance in arranging the questions. Below are the blueprints of the instrument on students' learning interest and online as delivered in Table 1 and Table 2.

Table 1. Instrument blueprint of students' learning interest

Indicator	Description	Question Item Number
Delighted Feeling	1. Happy to learn Biology.	1, 2, 3, 4.
	2. Happy with the materials delivery from the teacher.	5, 6, 7, 8.
Attention	1. Concentrate in learning	9, 10, 11.
	2. Understand the course of Biology	12, 13, 14, 15.
	3. Being careful in doing the task	16, 17, 18.
Interest	1. Possess a willingness to learn	19, 20, 21, 22, 23.
	2. Students' interest on learning Biology	24, 25, 26, 27, 28, 29.
Engagement	1. Giving ideas or opinion	30, 31, 32, 33.

Table 2. Instrument blueprint of the online learning

Indicator	Description	Question Item Number
Independency	Training students' independent attitude	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.
Interactivity	Student-Teacher mutualism	12, 13, 14, 15, 16, 17, 18, 19, 20.
Enrichment	There is a facility that could foster the learning materials	21, 22, 23, 24, 25, 26.
Accessibility	The online learning is easy to access	27, 28, 29, 30, 31, 32, 33.

The research instrument used was questionnaire with Likert Scale. The scoring guidelines were explained in the following:

Questionnaire's Answer Score

For favorable or positively stated items, "Strongly Agree" is scored 4, "Agree" is scored 3, "Disagree" is scored 2, and "Strongly Disagree" is scored 1. For unfavorable or negatively stated items the weighting is reversed, "Strong Agree" is scored 1, "Agree" is score 2, "Disagree" is score 3 and then "Strongly Disagree" is scored 4 (Hartanto, 2017).

Data Analysis Technique

Descriptive Statistic Analysis

According to Sugiyono (2017), descriptive statistics can be used to give a description of the data on the objects that will be examined in the research without intending for testing the hypothesis of the research. On the descriptive statistics, the data description was delivered in the form of table, frequency distribution, bar or line chart,

pie diagram or pictogram. As explained further by Ghozali (2018), the statistical analysis gives a description of the data that will be seen such as the highest score, lowest score, average score, range, median, standard deviation, and variants.

Analysis Pre-requisite Test
Data Normality Test

Data normality is a pre-requisite that must be fulfilled in a statistical analysis. Data normality test was conducted to know whether the data obtained by the researched had normally distributed or not (Ghozali, 2018). The normality test used in this research was assisted with SPSS 25 application on Kolmogorov-Smirnov with a significance level 5% or 0.05. The basis for decision making was if the significant value > 0.05, the data was considered to be normally distributed. If the significant value < 0.05, the data was not considered to be normally distributed.

Linearity Test

Linearity Test aims for knowing whether the two variables (independent and dependent variables) have linear correlation or not. Linearity test in this study employed a Test for Linearity on the significant level of 0.05 assisted with SPSS 25. Sugiyono & Susanto (2015) explained that the criteria in linearity test is that two variables have linear correlation if the significance (linearity) reached < 0.05. Other provision remarked the accepted linearity assumption is if the score of deviation from linearity was bigger than alpha 0.05.

Interpretation of Correlation Coefficient

Coefficient Interval if the grade obtained 0.00-0.199 then it belongs to the category "Verry Low", if the value obtained is between 0.20-0.399 then it belongs to the category "Low", if the value obtained is between 0.40-0.599 then it belongs to the category "Medium", then if the value obtained is between 0.60-0.799 then it belongs to the category "Strong" and if the value obtained is between 0.80-1.000 then it belongs to the category "Very Strong" (Sugiyono, 2015). The following test was on the significance test or T-test.

▪ **RESULT AND DISSCUSSION**

Descriptive statistics

Data obtained from the research location included the data on students' learning interest and online learning on Biology Course. The data and the learning result were delivered in the form of tables to ease data interpretation. Data on online learning variable (X) and students' learning interest (Y) were delivered in the following tables.

Table 6. Descriptive statistics on online learning and students' learning interest

Statistics		Online Learning	Students' Learning Interest
N	Valid	164	164
	Missing	0	0
Mean		90.36	89.84
Median		89.50	90.00
Mode		88	90
Std. Deviation		17.017	14.992
Variance		289.581	224.764

Range	93		89
Minimun	35		31
Maximum	128		120
Sum	14819		14733

Table 7. Frequency distribution of the online learning

Number	Interval		Frequency	FK	Percentage
1	35	45	1	1	1%
2	46	56	4	5	2%
3	57	67	4	9	2%
4	68	78	25	34	15%
5	79	89	48	82	29%
6	90	100	40	122	24%
7	101	111	25	147	15%
8	112	122	8	155	5%
9	123	133	9	164	5%
Total			164		100%

According to the data of online learning from 164 students, the lowest frequency with percentage as big as 1% on the interval 35-45 was represented only by 1 student and the highest frequency score with percentage 29% on the interval 79-89 students were represented by 48 students. Then, in the final interval that is 123-133 with percentage 5% was represented by 9 students. This happened due to adaptation phase faced by the students in which they experienced the shift from the offline learning to online learning. It was decreasing as the students felt bored and saturated dwith the online learning. According to Baticulon et al. (2021), students would face several barriers during the online learning such as adaptation with a new learning style, learning community, and different capacity of the students in understanding the materials. Van & Thi (2021) added the obstacles in coming to an online class such as the Internet access, cost for quota which is expensive, and students are perceived to be less capable in having a discussion through the application. Chang (2020) added that students are less concentrated when the online class started because of noises at home such as from other family members. Thus, from the explanations related to the barriers faced by the students, online learning makes the learning process unstable due to the decrease on students' learning interest.

Table 8. Frequency distribution of students' learning interest

Number	Interval		Frequency	FK	Percentage
1	31	40	2	2	1%
2	41	50	0	2	0%
3	51	60	2	4	1%
4	61	70	7	11	4%
5	71	80	35	46	21%
6	81	90	39	85	24%
7	91	100	39	124	24%

8	101	110	26	150	16%
9	111	120	14	164	9%
Total			164		100%

According to the data, it was revealed that students' learning interest out of 164 students had the lowest percentage that is 0% on the interval 41-50 which was represented by 1 student and the highest frequency was on the percentage 24% on the interval 81-89 and 91-100 which was each represented by 39 students. Then the final interval on 111-120 on the percentage of 9% was represented by 14 students. This was caused by the ups and downs of student't learning interest such as boredom in learning Biology. Interest has a significant impact towards learning because with an interest, someone can do the thing she/he likes. Besides, there are several factors affecting students' learning interest which was not separated from the internal and external factors (Nurjan, 2016). The internal factors is related to the physical and psychological aspects. The physical aspects are related to the health condition that relates to the learning process. The external factors are such as family support. For instance, parents' role is important for the students in their learning process. Motivation from parents has great impacts to the students so that their learning interest could grow. Anggraini et al. (2020) stated that Biology is a knowledge with wide score and discuss about the living creatures and their interaction with the environment. Biology is often perceived as a difficult course as there are many concepts to be mastered. Safitri & Nurmayanti (2018) stated that the correct selection of media becomes a supporting factors for the students to give appropriate responses in engaging in learning activities so that it can be assessed from the level of their active participation and students' engagement during the teaching and learning activities.

Prior to the correlation hypothesis testing, normality and linearity tests were conducted on the data of this study.

Data of Normality Test

Based on data normality test, the data obtained for online learning was as big as 0.085 while on the variable of students' learning interest was 0.200. The result obtained showed a significant level from both variables that was > 0.05. Thus, it can be concluded that the result of normality test on the online learning and students' learning interest variables had fulfilled the criteria of normal distribution. Previous research had also did a normality test (Jusmawati et al., 2020) that showed a score of sig = 0.571 (significant score > α, (0.572 > 0.05)). This shows that the data were normally distributed so that it can be continued with linearity testing.

Data Linearity Test

Based on the data of linearity test, from the ANOVA table that the significant score of linearity reached 0.000. Because the significant score was as big as 0.000 and less than 0.05 (0.000 < 0.5) or seen from the Deviation from Linearity score which was bigger than alpha 0.05 (0.058 > 0.05), it can be concluded that there is a linear correlation between the variables of online learning and students' learning interest. Previous research by Nurpaisah (2020), the Deviasion from linearty (sig) had reached 0.442 > 0.05 between the implementation of online learning (X) and students' learning

interest (Y). Therefore, the data on online learning had linear correlation with learning interest.

Interrelationship of Online Learning and Students' Learning Interest on Biology Course

Based on the calculation result of Pearson product moment, it was obtained Pearson coefficient 0.675 and r_{table} (df = 164) = 0.1533. If r_{count} is bigger than the r_{table}, there is a correlation between X variable (online learning) and variable Y (students' learning interest). Because the r Count in this analysis showed positive score, it means that there is a correlation between online learning and students' learning interest with strong correlation level is 0.0675 which was categorized in the interval of correlation coefficient (0.60-0.799). The correlation between $t_{count} = 11.671$ compared with the t_{table} ($df_{n-2} = 164$) = 1.6454 (11.671 > 1.654) means a significant correlation exist. Thus, there is a positive and significant correlation between online learning and students' learning interest.

The research result of this study was supported with the previous research which was conducted by Nurpaisah (2020) which revealed that there is a positive correlation between the use of online learning and students' learning interest with correlation coefficient score 0.750 which was categorized high. This means that online learning needs to be applied on the teaching and learning process to support sudents' learning interest since online learning had positive correlation and students' learning interest.

Online learning can be efficient and provide a positive relationship with students' learning interests if educators can apply online learning methods well and master IT, online learning platforms, learning outcome evaluations, and the ability of teacher to liven up the learning atmosphere to increase students' passion when learning. (Kurniawan & Makin, 2020). Online learning influence students learning interests due to different learning situations than before. Interest in learning can decrease if the learning media used by teachers is less attractive, so when students lack enthusiasm teachers can provide games while teaching (Yunitasari & Hanifah, 2020). In addition, online learning is of positive value to students who tend to be shy and closed if discussing in class, through online learning students can better prepare themselves to be involved in the learning process (Suriyanti, 2021). Interaction with teachers is one of the successes of online learning because it can reduce psychological distance which will lead to better learning (Nadeak, 2020).

Teacher plays a role in advising, educating, and guiding the students in the learning process (Wahyuni & Anhar, 2020). Active action which can be done by the teacher concerning students' learning interest is preparing the teaching beforehand and intervention to trigger and maintain students' interest as it was not permanent in nature this stimulation such as appealing learning source and media is needed (Harackiewicz et al., 2018; Rasmitadila et al., 2020) and teachers are expected to be able to develop their pedagogical competencies to be able to create an interactive and meaningful learning process (Susilana et al., 2020). The use of digital technology and the combination of pedagogical knowledge of teachers will produce students involved. (Mohamad Alakrash & Abdul Razak, 2020)

Based on a study by Ni'mah (2021), online learning will be maximally done if there is a development and design on LMS from the school teacher that support any

kinds of audio-visual interaction that was proven by high learning encouragement as they can access it everywhere and can give them fun experience by having online discussion. Schools in this research had used LMS such as Google Meet, Zoom, Google Classroom, and Edmodo where students and teachers could connect through application as a media that can support online learning on Biology. A good online learning can make students' learning interest better.

▪ **CONCLUSION**

Based on the result of this study, it can be concluded that there is a significantly positive correlation between online learning and students' learning interest on Biology course with correlation coefficient (r) as big as 0.674 which was categorized strong correlation at level of 0.5% with $t_{count} > t_{table} = 11.671 > 1.654$. In other words, the better the implementation of online learning, the better the students' learning interest on Biology Course. Teachers' innovation in online learning can support students learning interests because learning interests are not permanent so teachers must have the ability to create interesting online learning.

This research to see the relationship between online learning and learning interests is still limited to using questionnaires only. So further research is needed by conducting a test of learning outcomes when applying online learning. In education, this research produces information and provides an overview, and becomes a reference, especially for teachers regarding students' learning interests. These findings can be used as an improvement material so that teachers can improve and be able to create more interesting online biology learning so that students' learning interest remains good.

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