

Analysis of difficulties in learning biology online during the covid-19 pandemic in high school

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Article Information	Abstract
Keyword: Difficulty learning; Online learning; Covid-19 pandemic; Biology education; Qualitative research Kata Kunci: Kesulitan belajar; Pembelajaran online; Pandemi covid-19; Pendidikan biologi; Penelitian kualitatif History: Received : 28/08/2022 Accepted : 22/02/2023	The Covid-19 disease has appeared since 2019. The minister of Education and Culture of the Republic of Indonesia issued circular letter number 4 of 2020. The circular letter explains that the teaching and learning process is implemented through online learning. This study aims to determine the implementation of the learning process, learning difficulties, and the causes of students having difficulty learning biology online. This research uses a descriptive qualitative approach. The research subjects were class X MIA at one of the high schools in Jambi Province. Data collection techniques used was documentation, Google form questionnaires, and interviews. The validity test is done by member check. Data analysis techniques using data reduction, data presentation, and concluding. Learning difficulties experienced by students are learning resources that are still limited, the internet network is not good, some students do not have smartphones, often turning off the camera during Google meet, students feeling burdened with the assignments given, lack of time available, and not concentrating. The causes of learning difficulties are the lack of effort from students to find learning resources, limited networks, smartphones owned by students in bad condition, and a home environment that is not conducive. Abstrak Penyakit covid-19 muncul sejak tahun 2019. Menteri pendidikan dan kebudayaan republik Indonesia mengeluarkan surat edaran nomor 4 tahun 2020. Surat edaran tersebut menjelaskan bahwa pelaksanaan proses belajar mengajar dilaksanakan melalui pembelajaran daring. Tujuan dari penelitian ini yaitu untuk mengetahui pelaksanaan proses belajar, kesulitan belajar dan penyebab siswa mengalami kesulitan belajar biologi secara daring. Penelitian ini menggunakan pendekatan deskriptif kualitatif. Subjek penelitian adalah siswa kelas X MIA dan guru biologi kelas X MIA di salah satu SMA yang ada di Provinsi Jambi. Teknik pengumpulan data yang digunakan adalah dokumentasi, kuesioner <i>Google form</i> dan wawancara. Uji validitas yang dilakukan dengan cara <i>member check</i>. Teknik analisis data menggunakan reduksi data, penyajian data dan penarikan kesimpulan. Kesulitan belajar yang dialami siswa adalah sumber belajar yang masih terbatas, jaringan internet yang kurang baik, terdapat siswa yang tidak memiliki <i>smartphone</i>, sering mematikan kamera saat dilakukan <i>Google meet</i>, siswa merasa terbebani dengan tugas yang diberikan, kurangnya waktu yang tersedia dan tidak berkonsentrasi. Penyebab kesulitan belajar adalah tidak ada usaha dari siswa untuk mencari sumber belajar, terbatasnya jaringan internet, <i>smartphone</i> yang dimiliki siswa dalam keadaan kurang baik, dan lingkungan rumah yang tidak kondusif.

A. Introduction

The world has been preoccupied with the emergence of the Covid-19 disease since the end of 2019. Various policies have been implemented to break the chain of transmission of Covid-19 in Indonesia, one of which is an appeal to the public practice physical distancing such as keeping a distance, staying away from crowds and avoiding gatherings that involve large numbers of people.

The physical distancing policy imposed by the government has an impact on all sectors, one of which is the education sector (Anugrahana, 2020). The Minister of Education and Culture of the Republic of Indonesia issued Circular Number 4 of 2020 concerning the implementation of Education Policy in the Emergency Period of the Spread of Covid-19 in the school environment (Basar, 2021). Through the circular letter it was explained that the implementation of the learning process was carried out at home through online learning (Anugrahana, 2020).

Putria et al. (2020) explained that online learning is a learning process that is carried out remotely by utilizing the internet and supporting devices such as smartphones and computers. The implementation of online learning in high schools is a follow-up to the issuance of the Ministry of Education and Culture circular letter. Implementation of online learning at a public high school in Jambi Province was carried out using several supporting applications such as WhatsApp, Grub and Google meet.

Riskawati et al. (2021) revealed that the implementation of online learning itself prioritizes student's critical thinking skills and their accuracy in receiving and processing information presented online. The use of online learning systems sometimes causes various difficulties in the learning process faced by students. Based on research by Riskawati et al. (2021), it is known that the difficulties that the students often experience in online learning are limited internet quota, unstable internet network due to the location where students live in rural areas, some students do not have smartphones and have difficulty understanding the material.

The implementation of online learning which is carried out in several areas that are classified as lagging behind in terms of technology and information certainly causes problems. Based on Riskawati et al. (2021), one of the problems that is often encountered is the large number of students from rural areas who have difficulty getting a stable internet connection. These geographical conditions certainly make it difficult for students to follow online learning properly.

The results of interviews with 10 MIA class X students who had taken online biology lessons obtained two factors, namely technical and non technical factors. Technical factors include internet signals that are still weak, making it difficult for students to take part in online learning, not all students have smartphones due to parents economic factors. While non technical factors include the teacher providing material with limited explanations, limited interaction between students and teachers when students have difficulty understanding the subject matter, students are less interested in online learning and too many assignments are given by the teacher. In addition, it is also known that students consider biology to be a subject that is difficult to understand. The purpose of this study is to find out the implementation of the learning process, learning difficulties and the causes of students having difficulty learning biology online.

Research conducted by Fauzy & Nurfauziah (2021) stated that the obstacles faced by students when participating in online learning were dominated by an inadequate internet network and full cellphone memory. According to Fauza et al. (2020) the internal factors that affect student are difficult to take part in online learning, namely that students find it difficult to focus during the learning process. Handayani & Jumadi (2021) research revealed that the difficulties experienced by students in participating in online learning were the low level of students understanding of the material presented because the material was not conveyed as a whole.

Based on the previous research above, it can be seen that the Covid-19 pandemic has created real obstacles to the learning process in senior high schools. Studies on online learning difficulties during the Covid-19 pandemic need further analysis so that appropriate solutions can be made to solve these problems. This study aims to analyze students learning difficulties online in class X MIA SMA Jambi Province.

B. Material and Method

This research uses descriptive qualitative approach. According to Arikunto (2005) descriptive research is research that is not intended to test hypotheses but only describes as it is about a symptom or condition variable. The subjects of this study were ten students of class X MIA who had taken part in online biology learning process and a high school biology class X MIA teacher in Jambi Province. Data collection techniques used in this study were

documentation, interviews (in depth interviews) and google form questionnaires.

Qualitative research must uncover objective truths. Because of that the validity of the data in a qualitative research is very important. Through the validity of the data credibility qualitative research can be achieved. In this study, according to Creswell (2011) data credibility of research data was carried out by means of member check, namely testing the credibility of data by member checking was carried out by discussing research results with sources who had provided data.

The data analysis technique used in this research is qualitative data analysis, following the concept. Miles and Huberman (1984) in Sugiyono (2013) suggest that activities in qualitative data analysis are carried out interactively and take place continuously at each stage of the research. Activities

in data analysis are data reduction, data presentation and drawing conclusions. In qualitative research the research phases cannot be completed with certainty or do not have firm boundaries because the design and research focus can change. Broadly speaking, the stages of the research were carried out through three stages, namely orientation, exploration/implementation stage and member check stage.

C. Results and Discussion

Based on the results of questionnaires and interviews like Figure 1 regarding the implementation of the biology learning process during the Covid-19 pandemic, it is known that during the Covid-19 pandemic the implementation of biology learning was carried out online.



Figure 1 Interview the students

The available time for online biology learning is two hours of lessons and students still need additional time for online biology learning. According to research by Kharisma et al. (2020) shows the availability of time to be one of the obstacles to online learning that affects students understanding. The reduce time available from normal hours is disproportionate to studying dense biological material.

In addition to online biology learning, teachers send more teaching materials via whatsapp group and occasionally use google meet. Research by Daheri et al. (2020) revealed that the use of whatsapp as a learning medium was less effective. This is because it will lead to a lack of comprehensive explanation from the teacher. This resulted in a decrease in students interest and understanding of online biology learning. Based on the research results, ninety percent of students are not interested in participating in online biology lessons and feel they do not understand the material presented, so that students rarely take learning seriously.

This is in line with research by Syafrillia et al. (2021) that as many as 75% of students experience problems related to lack of time in online learning. When students want to ask questions, often the learning time is over. In addition, based on the research of Kharisma et al. (2020) shows the availability of time to be one of the obstacles to online learning that affects students understanding. The reduced time available from normal hours is disproportionate to studying dense biological material.

Based on the results of questionnaires and interviews regarding the learning method used by the teacher, it is known that the teacher does not always use the lecture method, five out of ten students said they sometimes use the lecture method and one out of ten students said the teachers often uses the lecture method. Likewise with interviews conducted with teachers who revealed that the learning methods they used varied, such as discussions, lectures and question and answer. It can be concluded that the learning

methods used by teachers are varied and do not always use the lecture method.

This is line with research by Fadilla et al. (2021) which is revealed that the provision of various learning methods can create creative learning so that students can easily build their own understanding without leaving the subject matter conveyed by the teacher. Based on the research result of nine students who revealed that the explanation given by the teacher was still unclear because the explanation given was still limited. This is line with research according to Aina et al (2021) in online learning students consider teachers to be less than optimal in providing explanations about a material. So they often have difficulty understanding the material being taught.

As for some of the difficulties faced by students during the online biology learning process, namely: based on the result of a questionnaire regarding the difficulties experienced by students in accessing the internet in online biology learning, there were six students out of ten students who revealed that students often experienced network difficulties in participating in the learning process. This is line with research by Puspaningtyas & Dewi (2020) which revealed that the majority of students experience difficulties related to the condition of the internet network.

Students sometimes feel burdened by the assignments given by the teacher in online biology learning so that students need to study independently to understand the assignments given by reading books. Widad & Bakar's research (2021) revealed that one of the effects of online learning is that students feel burdened by the many assignments given by the teacher.

In addition, the difficulties experienced by students were in the form of a decrease in the ability of students to concentrate, this was based on the results of questionnaires and students interviews which said that during the biology learning process most students would turn off the camera when online learning was carried out through video conferences such as google meet and zoom. This lack of discipline behavior will certainly affect the concentration of students learning. Research by Fauzy & Nurfauziah (2021) explains that most of the interactions that occur in online learning are carried out via whatsapp. This is because this application is very familiar and can still be used in unstable network conditions.

The obstacles faced by students during the online biology learning process are regarding the availability of supporting books not using e-books. Regarding the question regarding the source of the

supporting books that were owned, there were generally students who revealed that the supporting books were obtained from the school.

It can be concluded that students do not use e-books in online biology learning and only rely on supporting books provided by the school. Daroini & Alfiana (2021) revealed that textbooks used as learning resources did not meet students learning needs, so other learning resources were needed such as e-books as a support. But in fact the e-book is one of the least used learning resources by students. Research by Al-Idrus et al. (2021) revealed that most students did not have sufficient supporting books in participating in online learning.

As well as obstacles that students have difficulty following the learning process, namely in accessing the internet, this was expressed by students based on the results of questionnaires and interviews, students said they often experienced network difficulties in participating in the online biology learning process. This is in line with research by Niya et al. (2022) that the condition of the internet network was the biggest obstacle to implementing online learning during the covid-19 pandemic.

The reason why students find it difficult to concentrate in participating in online biology lessons is that students find it difficult to concentrate because of a busy home environment. This is in line with the research of Noviansyah & Mujiono (2021) that obstacles related to concentration are things that students often complain about because they cannot concentrate continuously due to un conducive home conditions.

It can be concluded that the thing that disturbs students concentration in participating in online biology lessons is a busy home environment. This requires students to stay away from crowds in order to concentrate. The results of this study are in line with Winata (2021) which states that a quiet environment will have an effect on students concentration levels, on the other hand, a noisy environment will worsen students concentration in participating in learning.

D. Conclusion

Based on the data, it can be concluded the implementation of the student learning process in biology during the covid-19 pandemic at a high school in Jambi Province was carried out online. Delivery of material through whatsapp group causes students to feel unclear and do not understand, causing students to experience learning difficulties. The learning difficulties experienced by students are learning resources

that are still limited, the internet network is not good, there are students who do not have smartphones, often turn off the camera during google meet, students feel burdend with the assignments given, lack of time available and do not concentrate in following learning process. The causes of students experiencing learning difficulties are that there is not effort from students to find learning resources, limited internet network, smartphones owned by students in unfavorable conditions, a home environment that is not conducive, frequent power outages that disrupt internet connections, students do not understand materials, scheculed time in online learning is lacking and busy home environment.

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