

Physics Learning in the Covid-19 Period at High Schools in Donggala Regency

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Abstract

This study aimed to identify the implementation of physics learning during the Covid-19 pandemic at senior high schools in Donggala Regency. The participants were high school students and physics teachers who experienced learning during the pandemic. This study employed a descriptive qualitative approach using a questionnaire as the research instrument. The questionnaire was distributed both online and offline. Respondents included 391 students (374 online and 17 offline) and 7 teachers (6 online and 1 offline). The findings revealed that students had limited technology skills and insufficient access to technological facilities, while teachers demonstrated adequate technological competence and better availability of learning devices. Online learning was generally conducted from home using personal smartphones, internet data, and moderate network connections. Students showed low conceptual understanding and problem-solving ability, and practical activities were not conducted during the pandemic. Offline learning was mainly implemented for examinations at school while following health protocols, although laboratory practicums were still not carried out. Both students and teachers preferred face-to-face learning over online learning. Despite various challenges in learning implementation, students' physics learning outcomes during the Covid-19 pandemic were able to achieve the minimum mastery criteria (KKM).

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Introduction¹

In order to prevent the spread of Covid-19 transmission to school residents in particular and the wider community in general, the Ministry of Education and Culture (Kemendikbud) issued several circulars related to the prevention and handling of Covid-19. First, Circular Number 2 of 2020 concerning Prevention and Handling of Covid-19 in the Ministry of Education and Culture. Second, Circular Number 3 of 2020 concerning Prevention of Covid-19 in Education Units. Third, Circular Letter Number 4 of 2020 concerning the Implementation of Education Policies in the Emergency Period for the Spread of Coronavirus Disease (Covid-19), which among other things contains directions on the learning process from home (Simangunsong & Mustikaningsih, 2022).

Schools are places where every day there is activity to gather and interact between teachers and students which can be a means of spreading Covid-19. In order to protect school residents from exposure to Covid-19, various regions have established learning from home policies. The policy targets all levels of education, from preschool to higher education, both public and private (Arifa, 2020).

Currently, teaching and learning activities must be carried out with the provision that students

and teachers as educators must follow health protocols from government recommendations and from institutions for mutual safety and health. During online learning at least there are no group assignments that make students gather in one place, there are only individual assignments to avoid exposure to covid-19 (Siahaan, 2020).

This analysis is motivated by the occurrence of the covid-19 pandemic which not only shocked the national scope, but the international realm was preoccupied with the presence of the covid-19 virus outbreak, this incident hampered all activities of human life from various fields, especially in the field of education. Namely require activities in accordance with health protocols (Firmansyah & Kardina, 2020).

All affected countries have made their best policies for education services. Indonesia also discussed some real challenges that must be immediately resolved: (1) technological disparities between schools in both big cities and regions, (2) the limited competence of teachers to utilize learning applications, (3) lack of resources for the development of educational technology such as the internet and quotas, (4) the relationship between teachers, students, and parents for integral online learning. The provision of policy assistance social distancing which later became the basis for teaching and learning activities from home, with the

application of information technology that took effect suddenly, did not need to surprise teachers and students, including parents and everyone at home. IT learning has indeed been implemented in the last few years in the education system in Indonesia. However, the ongoing online learning as a surprise from the Covid 19 Pandemic, shocked almost all agencies, from districts/cities, provinces, centers and even the international community (Fatwa, 2020).

By using this online learning system, sometimes various problems faced by students and teachers arise, such as subject matter that has not been completed by the teacher and then the teacher replaces it with other tasks. This is a complaint for students because the tasks given by the teacher are more (Siahaan, 2020).

According to Arifa (2020) there are many complaints from educators, students, and parents regarding the implementation of learning from home. Many educators complain about the limited availability of technological facilities, operational capabilities and the limitations of the internet network in some areas. On the other hand, from March 16 to April 9, 2020, the Indonesian Child Protection Commission (KPAI) received around 213 PJJ complaints from both parents and students. The complaint relates to: first, the assignment is too heavy with a short time. Second, the many tasks of summarizing and copying from books. Third, study hours are still rigid. Fourth, the limited quota for participating in online learning. And fifth, some students do not have personal devices so that they have difficulty taking online exams.

Various distance learning media were tried and used. Facilities that can be used as learning

media online include Google classroom, Google Form, whatsapp groups and other media. These facilities are the chosen facilities for online learning carried out in high schools in Donggala Regency. These facilities are used optimally, as a medium in carrying out learning such as in class.

The success of a model or learning media depends on the characteristics of the students. As revealed by Nakayama that from all the literature in e-learning indicates that not all students will be successful in learning online. This is due to the factors of the learning environment and the characteristics of students (Nakayama M, 2007).

Previous research was conducted on university students. In this study, there was still a lack of review of the factors that caused the ineffectiveness of the online learning process during the COVID-19 pandemic. In this study, it has not been studied how appropriate online learning should be that can be applied during the covid-19 period, because in the study there were also no more in-depth interviews so that the data obtained still cannot be used as accurate information about how to learn during the covid-19 period. 19 this. Therefore, I will follow up on this research in more depth from the education side in high school by identifying how learning is being carried out during the Covid-19 period, what are the obstacles faced during learning during the Covid-19 period, and what things can be used as learning alternatives. in the time of covid-19. By conducting research on Physics Learning during the Covid-19 period at SMA in Donggala Regency.

Materials and Method

This research is a qualitative descriptive study where this research method utilizes qualitative data and is described descriptively. Respondents in this study were teachers and high school students throughout Donggala Regency for the 2020/2021 academic year who had participated in online and offline learning.

Instruments in the form of a questionnaire related to research, namely a learning questionnaire physics during the covid-19 period. The questionnaire was physics learning distributed in two ways, namely online and offline. The questionnaire contains three categories of questions, namely (1) Skills in using technology, information and communication; (2) technology availability; and (3) Implementation of learning.

Results and Discussion

The instrument used in this study was in the form of a questionnaire which was distributed to respondents in two ways, namely online and directly (offline). Questionnaires that are distributed online

are sent via Whatsapp groups by sharing a link google form and offline questionnaires are distributed directly at schools.

1. Students and Teachers Filling Out Online

Questionnaires The questionnaire distributed via google form consists of 3 categories, namely (1) skills in using technology, information and communication, (2) Technology Willingness and (3) Learning Implementation.

a. Skills in Using Technology, Information and Communication

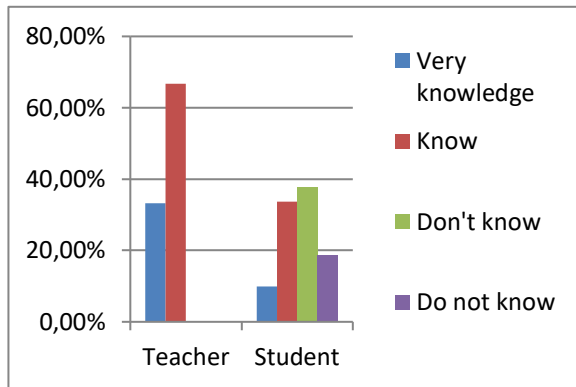


Diagram 1. Students' and teacher's answers about Skills to enter wifi networks on laptops/PCs.

Students' skills to enter wifi networks on laptops/PCs are very knowledgeable about 9.9%, know 33.7%, don't know 37.7% and don't know 18.7%. The teacher's skills to enter the wifi network on a laptop/PC are very knowledgeable about 2 people and know 4 people.

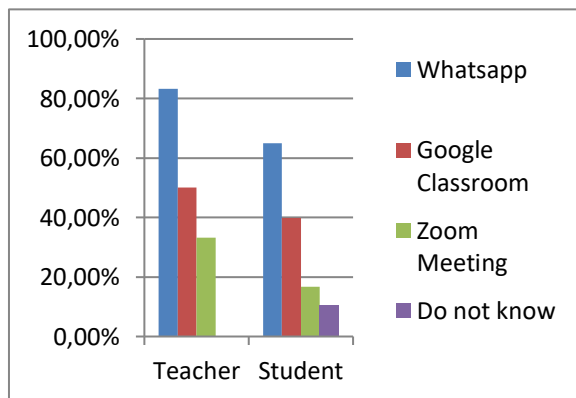


Diagram 2. Students' and teacher's answers about the skills of using online learning applications through laptops/PCs.

Students' skills in using applications online learning via laptops such as Whatsapp, Google Classroom and Zoom meetings show that students understand how to use online learning applications Whatsapp as many as 65%, Google Classroom as many as 39.8%, Zoom meetings are 16.8% and don't know 10.4%. Teacher skills using online learning applications via laptops such as Whatsapp, Google Classroom and Zoom The meeting showed that the teacher understood using the online learning application Whatsapp, Google Classroom and Zoom Meetings for 1 person, Whatsapp and Google Classroom for 2 people, Whatsapp and

Zoom meetings for 1 person, only Whatsapp for 2 people.

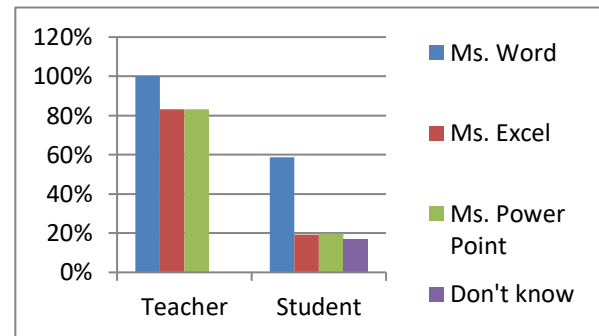


Diagram 3. Students' and teacher's answers about Skills in using software on laptops.

Students' skills in using software on laptops such as Microsoft Word, Microsoft Excel and Microsoft Power Point show that students understand using Microsoft Word software as much as 58.6%, Microsoft Excel 19.3%, Microsoft Power Point 19.8% and don't know 17.1%.

The Skills of teachers using software on laptops such as Microsoft Word, Microsoft Excel and Microsoft Power Point show that teachers understand using Microsoft Word software a number of Microsoft Excel and Microsoft Power Point as many as 5 people and teachers only 1 person understands using Microsoft Word software.

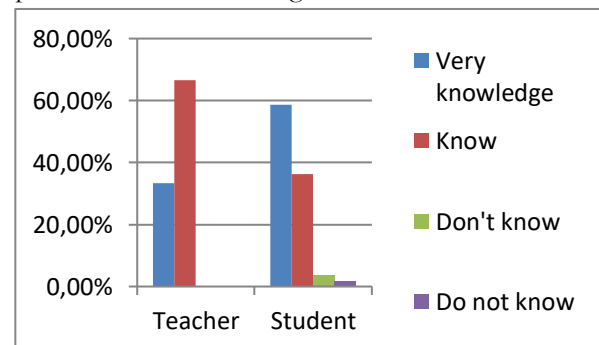


Diagram 4. Students' and teacher's answers about the skills of connecting wifi networks with cellphones.

Students' skills to enter the wifi network with cellphones are very knowledgeable about 58.6%, knowing 36.3%, not knowing about 3.5% and not knowing as much as 1.6 %. Skills of teachers to enter wifi networks with cellphones are very knowledgeable about 2 people and know 4 people.

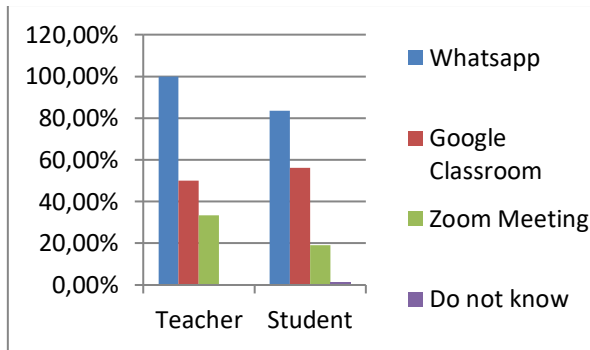


Diagram 5. Students' and teacher's answers about skills in using online learning applications via mobile phones.

Students' skills in using online learning applications via mobile phones such as Whatsapp, Google Classroom and Zoom meetings show that students understand using Whatsapp online learning applications as many as 83.4%, Google Classroom as many as 56.1%, Zoom meetings are 19% and others 1.2%. The teacher's skills in using online learning applications via mobile phones such as Whatsapp, Google Classroom and Zoom meetings show that teachers understand how to use online learning applications Whatsapp, Google Classroom and Zoom Meetings of 1 person, Whatsapp and Google Classroom of 2 people, Whatsapp and Zoom meetings of 1 person, only Whatsapp of 2 people.

b. Availability of Technology

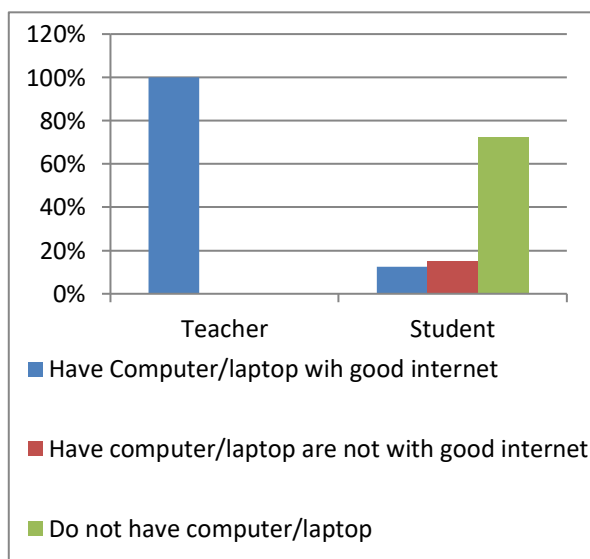


Diagram 6. Students' and teacher answers about Availability of computers/laptops with good internet conditions

Availability of computers/laptops owned by students shows that students who have computers/laptops with good internet 12.6%,

students who have computers/laptops are not with good internet conditions are 15 % , and students who do not have a computer/laptop are 72.5%. The availability of computers/laptops owned by teachers shows that there are 6 teachers who have computers/laptops with good internet connections.

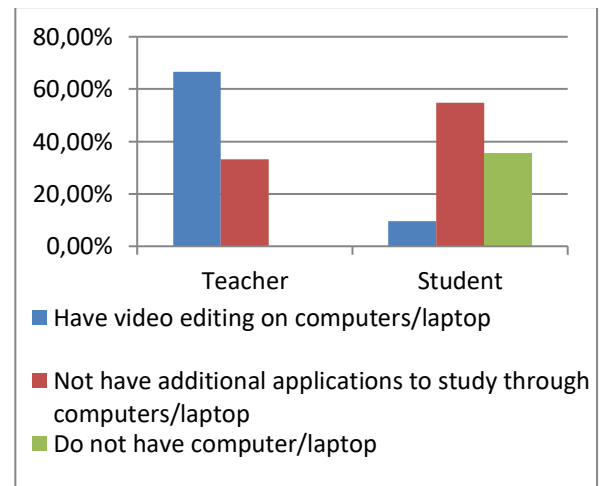


Diagram 7. Students' and teacher answers about the readiness of computers/laptops with adequate applications for learning readiness of students' computers/laptops with adequate.

The applications for learning shows that students who have video editing applications or screen capture applications on computers/laptops are 9.6%, 54.8% of students who do not have additional applications to study through computers/laptops, and 35.6% of students who do not have computers or laptops. The availability of computers/laptops owned by teachers with adequate applications for learning shows that teachers who have video editing applications or screen capture applications on computers/laptops are 4 people, teachers who have does not have an additional application for learning via a computer/laptop as many as 1 person, and a teacher who only uses the Whatsapp and Google classroom applications for learning that is carried out without an additional application of 1 person.

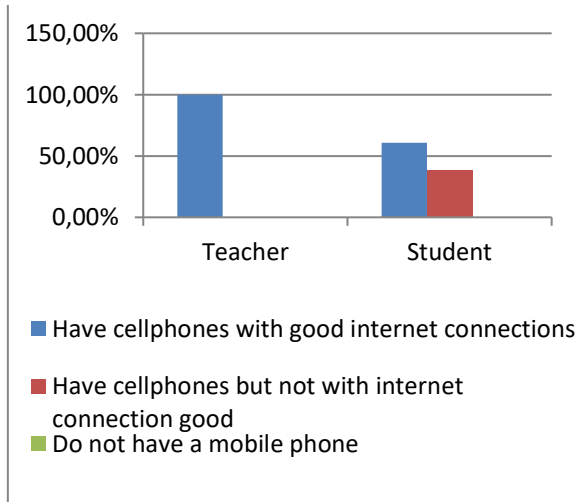


Diagram 8. Students' and teacher answers about the availability of mobile phones with a good internet connection.

Availability of cellphones with good internet connections that students have shows that students who have cellphones with good internet connections are 60.7%, students who have cellphones but not with internet connection good number of 38.8% and students who do not have a mobile phone that can access the internet as much as 0.5%. The availability of cellphones owned by teachers shows that there are 6 teachers who have cellphones with good internet connections.

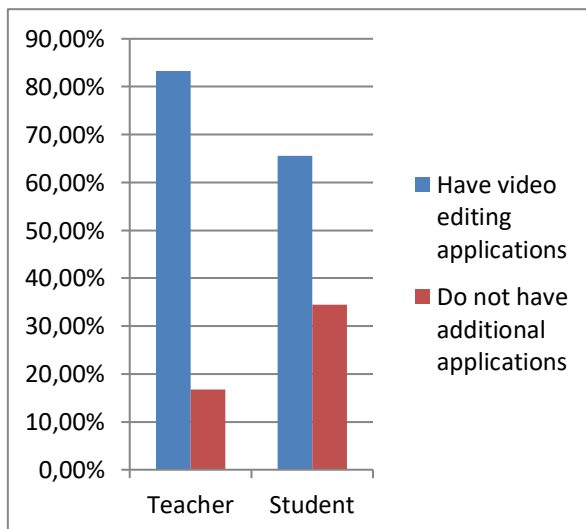


Diagram 9. Students' and teacher answers about the readiness of mobile phones with various applications for learning.

The readiness of mobile phones with various applications for learning that students have shows that students who have video editing applications or screen capture applications are 65.5% and students who do not have additional applications to study on mobile phones amounted

to 34.5%. The availability of mobile phones with various applications for learning that the teacher has shows that teachers who have video editing applications or screen capture applications are 5 people and teachers who do not have additional applications for learning on mobile phones are 1 person.

c. Implementation of Learning

The implementation of learning is divided into two questions. The first asks choice questions and the second asks open-ended questions. The following are the results obtained during the research.

• Selection Question

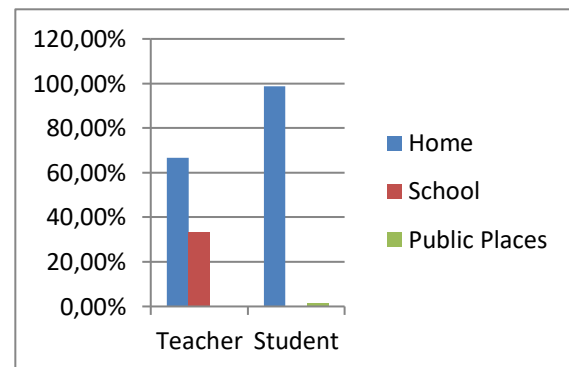


Diagram 10. Answer of students and teachers on location while studying during the Covid-19

Location of students during study time Covid-19 Pandemic done at home a number of 98.7%, 0.3% in schools, public places 0.3% and other 0.7%. Pandemic The location of teachers during learning during the Covid-19 Pandemic shows that there are 4 teachers who study at home and 2 teachers who study at school.

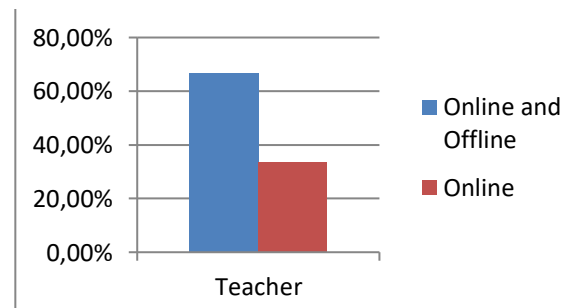


Diagram 11. Jawaban guru tentang metode pembelajaran saat pandemi Covid-19.

The learning method used by the teacher during the Covid-19 pandemic showed that the teacher gave online and offline learning of 4 people, and the teacher who only gave online learning was 2 people.

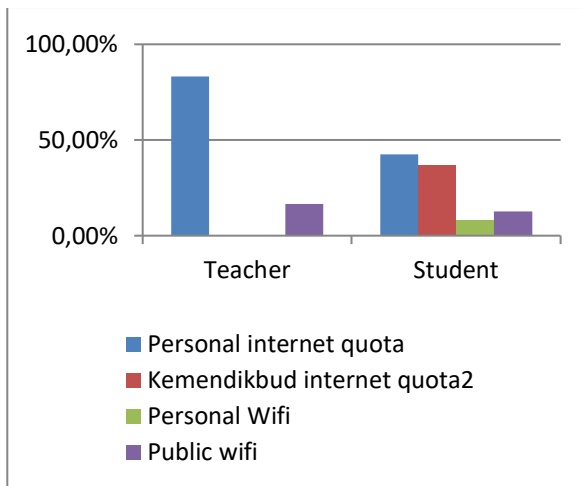


Diagram 12. Students' and teacher answers about the type of internet connection while studying during the Covid-19 pandemic

The Type of student internet connection while studying during the Covid-19 pandemic shows that students who use personal internet quota are 42.5%, kemendikbud internet quota are 36.9%, personal wifi is 8% and public wifi is 12.6%. The type of teacher internet connection during study during the Covid-19 pandemic shows that teachers who use personal internet quota are 5 people and teachers who using public wifi for 1 person.

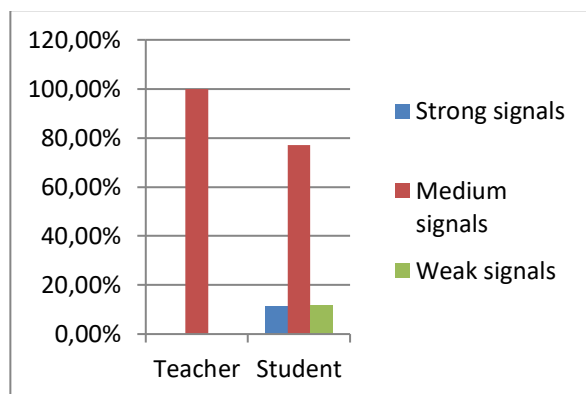


Diagram 13. Student and teacher answers about Signal conditions when studying during the Covid-19 Pandemic.

The condition of student signals while studying during the Covid-19 Pandemic shows that students who have moderate signals are 77%, weak signals are 11.8% and strong signals are 11.2%. The condition of teacher signals during learning during the Covid-19 Pandemic shows that the teacher has a moderate signal condition of 6 people.

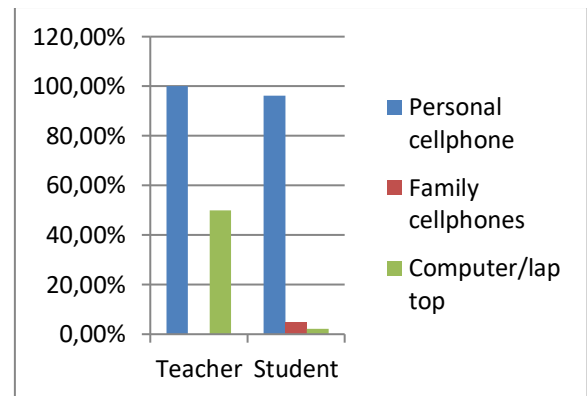


Diagram 14. Students' and teacher answers about devices used when learning online.

Devices used by students when studying online showed that students who used personal cellphones were 82.4%, family cellphones were 3.7% and students who used laptops/PCs were as many as 82.4%. 1.6%. The devices used by teachers when learning online show that teachers who use personal cellphones and laptops/PCs to do learning are 3 people and teachers who only use cellphones to do learning of 3 people.

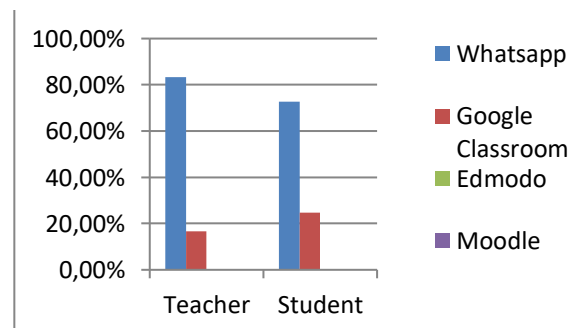


Diagram 15. Students' and teacher answers about applications used when learning online.

Applications used by students when studying online show that 72.8% of students use the Whatsapp application, 24.8% of Google Classroom, who use moodle 0,3 % and who use edmodo 0% The application used by the teacher when learning online shows that the teacher 5 people who use the Whatsapp application and 1 teacher who uses Google Classroom.

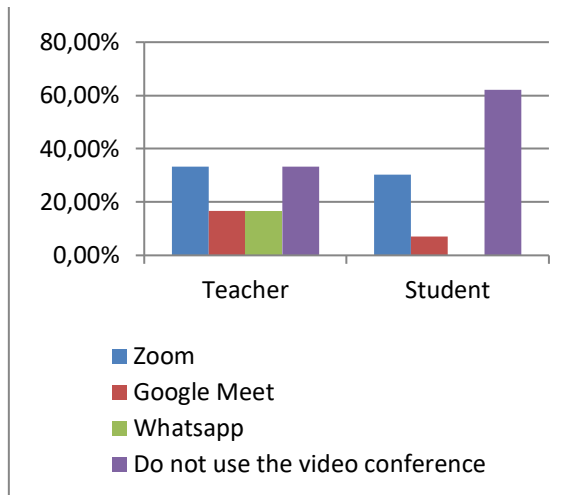


Diagram 16. Students' and teacher answers about the video converge application used when learning online.

The video conferencing application used by students when studying online shows that 62,10 % students who do not use the video conference application, use the Zoom application 30,20%, and students who use Google Meet are 7%. The video conferencing application used by the teacher during online learning shows that there are 2 teachers who use the Zoom application, 1 teacher who uses the Google Meet application, 1 teacher who uses the Whatsapp application and 2 teachers who do not use the video converge application.

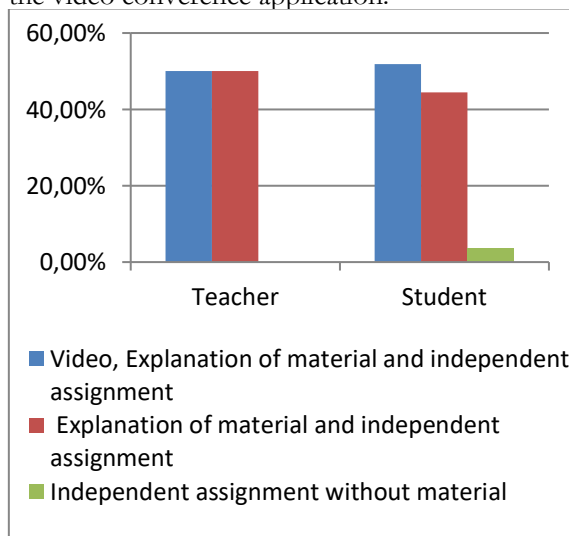


Diagram 17. Students' and teacher answers about activities in the classroom when learning online (online).

Activities in the classroom when students learn online show that students are given videos, explanations of material and independent assignments amounting to 51.9%, students are given explanations of material and assignments independently as many as 44.4%, and students were given independent assignments without any material handouts as much as 3.7%. Activities in the classroom when the teacher conducts online learning show that the teacher provides learning videos, provides material explanations and

independent assignments of 3 people and the teacher provides material explanations and independent tasks of 3 people.

- Open Ended Questions

"Did you learn about understanding concepts? If so, how did you learn about the material? If not why?"

Based on the above statement, it shows that on average students continue to learn material about understanding concepts during online learning. Students learn material about understanding concepts by reading and understanding the material as much as 50%, discussing with friends as much as 30% and not understanding as much as 20%.

"Do you teach material about understanding concepts? If yes, how do you teach the material? If not why?"

Based on the statement above, it shows that teachers teach material about understanding concepts during online learning. The teacher teaches material about understanding the concept by providing material in the form of a video of 2 people, provides material in the form of pdf and powerpoint as many as 2 people, provides material by holding learning face-to-face by dividing each class shift by 1 person and provides material understanding of concepts through examples in everyday life 1 person.

"Did you study material about problem solving? If so, how did you learn about the material? If not why?"

Based on the above statement, it shows that on average students continue to learn material about problem solving while studying online. Students learn the material about problem solving by asking the teacher a total of 30%, understanding the material individually a total of 30% discussing with friends a total of 30% and not studying a total of 10%.

"Do you teach material about problem solving? If yes, how do you teach the material? If not why?"

Based on the above statement shows that the average teacher teaches material related to problem solving. The teacher teaches material about problem solving by giving 3 people material in the form of videos, 1 person giving pdf and power point material, giving 1 student sample questions and not teaching 1 problem solving material.

"Did you do physics practicum experiments during Covid-19? If so, how did you do this practical experiment? If not, why?"

Based on the above statement, it shows that on average students do not do practicum during the

Covid-19 pandemic. 90% of students do not do practicum while studying online and 10% of students who do practicum from home.

"Do you give practical experiments during Covid-19 lessons? If yes, how do you provide practical practical experiments. If not, why?"

Based on the above statement, it shows that the average teacher gives practical experiments during learning during the Covid-19 pandemic. The teacher gives a practicum by sending a video about 2 people practicum work procedures, a teacher who directs students to do a practicum using simple tools a number of 3 people and a teacher who doesn't give a practicum during online learning a total of 1 person.

"What app do you use when you study physics? How do you learn physics with the app you use?"

Based on the above statement shows that the average student learns online using the Whatsapp and Google Classroom applications. Students learn to use the Whatsapp application to fill out the attendance list and Google Classroom to complete 60% of assignments and students who only use the Whatsapp application to fill out the attendance list and complete 40% of assignments.

"What learning applications do you use when teaching physics? How do you teach physics with the app you use?"

Based on the above statement shows that the average teacher teaches using the Whatsapp application. Teachers use the Whatsapp and Google Classroom applications and other media in learning as many as 1 person, teachers use the Whatsapp and Google Classroom applications as many as 3 people and teachers only use the Whatsapp application as many as 2 people.

"Did you solve the questions given by the teacher? If yes, how did you solve the problem. If not why?"

Based on the statement above, it shows that on average students complete the questions given by the teacher. Students who solve the questions given by looking for answers from the sample questions given by the teacher are 40%, mencari jawaban melalui google sejumlah 50 % dan mencari jawaban melalui penjelasan youtube sejumlah 10 %.

"Do you give practice questions and their solutions to students? If yes, how do you give practice questions and their solutions to students? If not why?"

Based on the statement above, it shows the teacher gives practice questions and their solutions to students. The teacher gives practice questions to students by giving practice questions and their

solutions online by 4 people and the teacher gives practice questions to students by collecting 2 students in shifts.

"Did you take the exam given by the teacher? If so, how did you take the exam? If not why?"

Based on the statement above, it shows that on average students take exams given by teachers during the Covid-19 pandemic. 50% of students who took the exam by reopening the material that had been given by the teacher, 30% of students who studied the material before the exam was carried out, and 20% of students who had difficulty taking the exam due to network problems.

"Do you provide learning evaluations to students? If so, how do you provide an evaluation of learning to students? If not why?"

Based on the statement above, it shows that teachers provide learning evaluations during the Covid-19 pandemic by giving questions online. The teacher gives an evaluation by giving daily tests, mid-semester tests and online semester tests through the Whatsapp and Google Classroom applications for 4 people and offline for 2 people.

"What are the obstacles you face when studying during the Covid-19 pandemic?"

Based on the above statement, it shows that the average obstacles faced by students while studying during the Covid-19 pandemic are networks internet that are less stable and limited internet quotas. 30% of students who are constrained by an unstable internet network, 40% of students who are constrained by a limited internet quota, 15% of students who feel they do not understand online learning, students who are constrained by assignments that accumulate 10% and students who do not have 5% have a personal cell phone.

"What obstacles did you face while studying during the Covid-19 pandemic?"

Based on the statement above, it shows that the average obstacle faced by teachers during learning during the Covid-19 pandemic is that the internet connection at the teacher's place is often not good. There are 2 teachers who have difficulty directing students during online learning, 4 teachers who have problems with the network and 4 internet quota.

"Give advice on the learning process during the Covid-19 pandemic?"

Based on the statement above, it shows that on average students hope to learn directly at school while still complying with health protocols. 50% of

students who hope to learn directly at school, 20% of students who suggest that learning be done using Zoom and 30% of students who hope that the tasks given by the teacher are sufficient.

"Give advice on the learning process during the Covid-19 pandemic?"

Based on the statement above, it shows that teachers hope that learning during the Covid-19 pandemic can be done face-to-face while still adhering to health protocols such as washing hands, keeping a distance and wearing masks. There are 5 teachers who give suggestions for face-to-face learning and 1 teacher who hopes that the internet network will be better when learning online.

2. Students and Teachers who Fill Out Questionnaires Directly

The questionnaire given directly contains only one category of questions, namely about the Implementation of Learning.

a. The results of student questionnaires

The results of filling in student questionnaires that are given directly are presented in Table 1.

Table 1. Completing Student Questionnaires Offline

Question	Response	
	Yes	No
Did you conduct physics practicum experiments during Covid-19? If so, how do you do the practicum experiment. If not, why?	1	16
Did you complete the question given by the teacher? If so, how do you solve the problem. If not, why?	17	-
Do you follow the test given by the teacher? If so, how do you take the test. If not, why?	17	-
Did you ever study online during the covid -19 pandemic? If so, which is better, study online or offline. Give me a reason!	17	-

Based on their states that many students do not do practicum while studying during the Covid 19 pandemic. Students continue to complete the questions or assignments given by the teacher by taking and depositing assignments at school or through the coordinator assigned to each post in the village. Students take the exam given by the teacher at school while still adhering to health protocols and keeping a distance when taking the exam. Students feel it is better and more effective to study offline than to study online.

"What obstacles do you face while studying during the Covid pandemic?"

Answer:

"When we are studying, we are often told, the material given piles up, when we study, we are not too focused"

The statement above shows that students have many obstacles when studying during the Covid-19 pandemic. Constraints faced by students are too many materials and assignments and students cannot focus while studying.

"Give advice about the learning process during the Covid-19 pandemic!"

Answer:

"Whatever learning media is used, learning motivation is the main focus. Because during the Covid-19 period, many students stopped going to school because they were lazy and stressed. All because of a lack of motivation."

In the statement above shows that the suggestion from students is that teachers should use or create interesting learning media and can motivate students while studying during the Covid-19 pandemic.

b. The results of the teacher's questionnaire

"Do you give practical experiments during Covid-19 lessons? If yes, how do you provide practical experiments. If not, why?"

Answer:
"No, because of limited tools and materials and time constraints"

The statement above shows that teachers did not give a practicum experiment during learning during the Covid-19 pandemic.

"Do you give practice questions and their solutions to students? If yes, how do you give practice questions and their solutions to students? If not, why?"

Answer:
"Yes, how to give questions by writing the questions on a piece of paper and then multiplying them, then giving them to students. How to solve it is discussed at the next meeting and explained in class."

The statement above shows that teachers give practice questions and their solutions during learning during Covid-19.

"Do you provide learning evaluations to students? If so, how do you provide an evaluation of learning to students? If not, why?"

Answer:

"Yes, how to give an evaluation with students after explaining the learning material directly. After the explanation of the material is completed, an evaluation is carried out in order to determine the achievement of learning objectives."

In the statement above shows that teachers evaluate students' learning during the Covid-19 pandemic.

"Have you ever done online learning during the Covid-19 pandemic? If so, which is better, online or offline learning. Give the reason ! Answer:

"Once, offline learning, because when online there are still many students at our school who do not have cellphones and some do not have data credit. Only the class president can be given online learning. Therefore at school we agreed to conduct offline learning.

The statement above shows that teachers had conducted online learning during the Covid-19 pandemic. The data show that teachers prefer learning to be done offline by allowing students to come to school but not in large numbers and by following health protocols.

"What obstacles do you face while studying during the Covid pandemic?"

Answer:

"The problem is that the time specified for each subject is limited due to time constraints, students miss lessons. If learning is shortened, students will definitely not understand the lesson"

In the statement above shows that the obstacles faced by teachers during learning in the Covid-19 period is the time set by the school for each subject is very limited.

"Give advice about the learning process during the Covid-19 pandemic!"

Answer:

"Use other learning media to help explain teaching materials to students, teachers need to pay attention to the level of difficulty and the date of assignment."

The figure above shows that the teacher's advice is that teachers should use other and more interesting learning media to help explain the material to students.

From the results obtained, this is in accordance with the research conducted by Dewi (2020) who stated that some of the impacts felt by students that students do not have a culture of distance learning. Distance learning methods make students need time to adapt.

Research conducted by Almaiah, et al. (2020) who stated that e-learning tools played an important role during this pandemic. And research conducted by Sadaghiani (2011) states that many educators consider multimedia technology as a useful teaching tool that can capture students' attention. Students can benefit from multimedia learning in the form of narration, animation, whiteboards, paper and books, as well as videos and films.

Research conducted by Klein, et al (2021) who stated that online learning systems are useful, but in general can not be used as a complete substitute for face-to-face teaching during the COVID-19 pandemic.

Research conducted by Abidin, et al (2020) who stated that educators and learners are still unfamiliar with the various platforms online learning that exist. So that more people access learning online with media WhatsApp because this is what they are used to using.

Gunawan, et al (2020) who stated that the most common obstacles that arise during the implementation of online learning are internet packages that students do not have, limited internet access by lecturers and students, and not yet accustomed to online learning.

Research conducted by Ruggieri (2020) stated that students who report rarely using textbooks often use online resources to obtain answers. Online resources are enough to answer many of their questions in seconds to minutes through a web search. And research conducted by Liebenberg, et al (2012) stated that the increasing dependence on mobile phones and applications suitable for regular use during student studies indicates that mobile phones are the main entry point for internet adoption.

Agus Purwanto, et al (2020) stated that the impact felt by students on the process of learning to teach at home is that students feel empowered to learn distance learning without adequate facilities and infrastructure at home.

Research conducted by Sadikin, et al (2019) who stated that students have difficulty in understanding the lecture material given online.

Conclusion

Based on the results obtained, it can be concluded that the learning of physics in the period of Covid-19 in SMA Se-Kabupaten Donggala, among others, students' skills in using technology are still lacking and teachers' skills in using technology are good. The availability of technology that students have is still less available, there are still many students who do not have a laptop/PC and only use mobile phones to study. The availability of technology that teachers have is already available. All teachers have personal mobile phones and laptops/PCs.

The implementation of online learning conducted by students and teachers during the Covid-19 pandemic includes locations during which online learning is generally conducted from home using a personal mobile phone with an internet connection that uses personal data pulses and moderate signal conditions. Students and teachers more often use Whatsapp applications in learning and some students and teachers do not do learning through video conferencing. The activities of students and teachers in learning are the provision

of learning videos, explanation of materials and problem solving.

The implementation of offline learning by students and teachers during the Covid-19 pandemic generally did not conduct practicum during learning, but teachers still gave assignments and gave semester exams to students. Students and teachers prefer learning that is done offline than online.

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References

- Abidin, Z., Rumansyah, & Arizona, K. (2020). Pembelajaran online berbasis proyek salah satu solusi kegiatan belajar mengajar di tengah pandemi Covid-19. *Jurnal Ilmiah Profesi Pendidikan*, 5(1), 64–70.
- Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2020). Exploring the critical challenges and factors influencing the e-learning system usage during Covid-19 pandemic. *Education and Information Technologies*, 25(6), 5261–5280.
- Arifa, F. N. (2020). Tantangan pelaksanaan kebijakan belajar dari rumah dalam masa darurat covid-19. *Pusat Penelitian Badan Keahlian DPR RI*, 12(7), 13–18.
- Dewi, W. A. F. (2020). Dampak COVID-19 terhadap implementasi pembelajaran daring di sekolah dasar. *Edukatif: Jurnal Ilmu Pendidikan*, 2(1), 55–61.
- Fatwa, A. (2020). Pemanfaatan teknologi pendidikan di era new normal. *Indonesian Journal of Instructional Technology*, 1(2), 20–30.
- Firmansyah, Y & Kardina, F. (2020). Pengaruh new normal ditengah pandemi covid-19 terhadap pengelolaan sekolah dan peserta didik. *Buana Ilmu*, 4(2), 99–112.
- Gunawan., Suranti, N. M. Y., & Fathoroni. (2020). Variations of models and learning platforms for prospective teachers during the COVID-19 pandemic period. *Indonesian Journal of Teacher Education*. 1(2), 61-70
- Klein, P., Ivanjek, L., Dahlkemper, M. N., Jelcic, K., Geyer, M. A., Kuchemann, S., & Susac, A. (2021). Studying physics during the COVID-19 pandemic: Student assessments of learning achievement, perceived effectiveness of online recitations, and online laboratories. *Physical Review Physics Education Research*, 17(1), 1–11.
- Liebenberg, H., Chetty, Y., & Prinsloo, P. (2012). Student access to and skills in using technology in an open and distance learning context. *International Review of Research in Open and Distance Learning*, 13(4), 250–268.
- Nakayama M, Yamamoto H, & Santiago, R. (2007). The impact of learner characteristics on learning performance in hybrid courses among japanese students. *Elektronik Journal ELearning*. 5(3), 195-206
- Purwanto, A., Pramono, R., Asbari, M., Santoso, P. B., Wijayanti, L. M., Choi, C. H., & Putri, R. S. (2020). Studi eksploratif dampak pandemi COVID-19 terhadap proses pembelajaran online di sekolah dasar. *EduPyCouns: Journal of Education, Psychology and Counseling*, 2(1), 1-12.
- Ruggieri, C. (2020). Students' use and perception of textbooks and online resources in introductory physics. *Physical Review Physics Education Research*, 16(2), 020123.
- Sadaghiani, H. R. (2011). Using multimedia learning modules in a hybrid-online course in electricity and magnetism. *Physical review physics education research*. 7(1), 1-7
- Sadikin, A., & Hamidah, A. (2020). Pembelajaran Daring di Tengah Wabah Covid-19. *Jurnal Ilmiah Pendidikan Biologi*, 6(2), 214–224.
- Sadikin, A., & Hakim, N. (2019). Pengembangan media e-learning interaktif dalam menyongsong revolusi industri 4.0 pada materi ekosistem untuk siswa SMA. *Jurnal Ilmiah Pendidikan Biologi*, 5(2), 131-138.
- Siahaan, M. (2020). Dampak Pandemi Covid-19 terhadap dunia pendidikan. *Jurnal Kajian Ilmiah*, 1(1), 73–80.
- Simangunsong, J., & Mustikaningsih, H. (2022). An evaluation of the implementation of study-from-home policy in senior high school during Covid-19pandemic. *Research and Evaluation in Education*. 8(1), 67-77.