

Analysis of High School Teacher's Biology Teacher's Perception on Biology Practice during the Covid-19 Pandemic in Rantauprapat City

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Abstract

The purpose of this study was to find out the perception of high school biology teachers towards Biology Pratikum during the Covid-19 Pandemic in Rantauprapat City. This type of research uses quantitative with the method used is descriptive. The population of this research is 17 public high school teachers in Rantauprapat city with total sampling of 17 public high school teachers in Rantauprapat city. The data collection technique was carried out by giving a questionnaire to the teacher regarding the teacher's perception of the science practicum during the COVID-19 pandemic using the google form while the indicators in this study were (1) Ready to carry out the practicum; (2) Not ready to carry out practicum; (3) Not ready to carry out the practicum. The results of this study indicate that the indicator one Ready to carry out practicum scores 97.28%; Then the second indicator Not ready to carry out the practicum got a score of 82.22% and the third indicator Not ready to carry out the practicum got a score of 76.19%. In the end, the teacher stated that he still found it difficult to carry out practical activities during the Covid-19 Pandemic.

Keywords

teacher's perception; biology practicum; covid-19 pandemic



I. Introduction

The country of Indonesia is one of the countries affected by the pandemic quite large in the world, several aspects of life are hampered by the disease. One of the aspects of education that experienced the greatest impact of all existing aspects. (Khusnah, 2020) stated that the offline or face-to-face learning process in schools was shifted to an online learning process due to the COVID-19 pandemic. With the COVID-19 virus pandemic, schools in Labuhanbatu Regency carry out online learning. In this case, in the implementation of learning, it is different from face-to-face learning so that the use of learning models determines the effectiveness of schools when online during the COVID-19 period. (Maulah & Farikhatun Nurul A, 2020). Education in Indonesia is currently experiencing changes since the presence of COVID 19. The spread of the COVID-19 pandemic has presented its own challenges for educational institutions in Indonesia. To reduce the spread of Covid 19 and educational activities can run as usual, the government has implemented new regulations to reduce this number (Encep, et al 2020).

The outbreak of this virus has an impact of a nation and Globally (Ningrum *et al*, 2020). The presence of Covid-19 as a pandemic certainly has an economic, social and psychological impact on society (Saleh and Mujahiddin, 2020). Covid 19 pandemic caused all efforts not to be as maximal as expected (Sihombing and Nasib, 2020).

Teaching and learning activities were immediately suspended and transferred to an online learning system due to the pandemic. It is not easy for some people or institutions to adapt the learning system to the circumstances. However, besides that technology is

developing very rapidly, people are starting to adapt to the situation and begin to develop, and take advantage of existing technology. according to Nurwahidah (2021), as well as the media used in the learning process in accordance with each school and the selection of media in accordance with the objectives to be achieved. The emergence of online learning requires students to be independent and highly motivated in the learning process (Noor et al., 2020).

Online learning of course requires supporting factors, so that children are able to carry out the online learning process, if one of these supporting factors is not balanced or does not exist, then the continuity of online learning will not be able to be done or not perfect (Ndasung, 2021). As is the case in Biology learning, namely learning about the physical structure and function of human organs and studying the environment. Practicum is aimed at seeing the real state of a theory, opportunities to test and learning steps for students (Endela & Harmoni, nd2019). Biology as well as the study of living things is obtained through the process of investigation/research using the scientific method. One of the activities that apply the scientific method in biology learning is practicum in the laboratory (Gultom & Fauziah, 2014).

Practical activities are carried out in the field and in the laboratory. Learning in theory does not necessarily make students really know what they are learning (Dalora, 2014). In previous planning there was no online learning process, so the teacher must immediately take action to carry out online learning. In addition, it also occurs in Biology subject teachers, most of whom in the learning process usually use face-to-face practicum methods, replaced by online learning. Practical learning can see the object directly and directly do it yourself, so that what is practiced can draw conclusions. It requires direct practice of applying a theory to get more meaning from the material being studied. Students need to do it themselves, touch, observe, measure to prove a theory, so that students are more motivated in studying a theory, and indirectly students' curiosity can also develop. With the practicum, it can increase knowledge, curiosity, be creative, know the tools in the laboratory and train students' concentration.

As according to (Dalora, 2014) adding biology practicum is one of the important things in improving the quality of biology learning, especially in the implementation of learning process activities. The achievement of teaching and learning activities when practicum has been carried out, because practicum activities play an important role in the teaching and learning process in schools, not to mention the biology subjects in State Senior High Schools throughout the city of Rantauprapat. Biology is a branch of natural science which of course has a study target that is still related to the natural environment and its contents which consists of two kinds, namely living things (biotic) and non-living things (abiotic) (Hamidah et al., 2014).

The teaching and learning process during the Pandemic at public high schools throughout the city of Rantauprapat experienced problems from a face-to-face (offline) process to a remote (online) process. On this matter, it is estimated that the Biology learning practicum activities cannot run optimally as the face-to-face learning process, because there are many obstacles faced by each student, one of which is the signal state. Khusnah (2020) In fact, most students are still constrained by facilities and infrastructure, signal conditions and a less conducive home atmosphere so that teachers are not ready and not ready to carry out online practicums. In this study, it will be seen how the teacher's perception of practicum activities that have been carried out in schools will be seen.

Based on the information and observations that have been made by the researchers that the public high schools throughout the city of Rantauprapt are one of the schools that have experienced problems in the process of implementing face-to-face learning (offline) into a remote process (online), one of the obstacles is in the eye. biology lessons where the learning process uses practical, but this is important in improving the quality of biology learning, especially in the implementation of learning process activities. in order to achieve good teaching and learning activities when practicum has been carried out, because practicum activities play an important role in the teaching and learning process in schools carrying out practical activities, of course, supporting facilities are needed that will make practicum activities run well and skills in the laboratory can be mastered by students. The supporting facilities in question are a room called a laboratory and equipment required. However, public high schools throughout the city of Rantauprapt cannot do practicum because they experience problems in the learning process during the pandemic due to the lack of supporting facilities and facilities that will make practicum activities run well and skills in the laboratory can be mastered by students. and the supporting facilities in question are a room called a laboratory and the necessary equipment and unpreparedness and an uncomfortable feeling when going to take part in this online practicum due to the lack of facilities and lack of understanding and readiness as well as the ineffectiveness of online practicum learning, the implementation of online practicum has obstacles such as obstacles in the network, lack of interaction with teachers and others and no companion and lack of communication with teachers. Therefore, researchers are interested in conducting this research because there are no researchers who have conducted this research, which is the purpose of this study to find out the perception of high school biology teachers towards Biology Practicum during the Covid-19 Pandemic in Rantauprapt City.

II. Research Method

This research was conducted in November at public high schools throughout the city of Rantauprapt. This type is quantitative with descriptive method. The population used is 17 teachers of SMA Negeri in Rantauprapt, with a total sampling of 17 teachers in SMA Negeri in Rantauprapt. Sampling using total sampling is sampling where the number of samples is the same as the population, due to taking total sampling because the population is less than 100 (Sugiono 2014).

The data collection technique was carried out by giving a response questionnaire to the teacher regarding the teacher's perception of the science practicum during the COVID-19 pandemic using the google form. The technique of distributing the questionnaire is done by sharing the google form link via WhatsApp Group media to the teacher by using the 3 indicators. The indicators in this study are (1) Ready to carry out practicum; (2) Not ready to carry out practicum; (3) Not ready to carry out the practicum.

The initial preparation stage was carried out by observing and conducting observations and interviews with biology teachers at State Senior High Schools throughout the city of Rantauprapt at the research location at State Senior High Schools throughout the city of Rantauprapt. The next stage was to make interview statement guidelines, as well as a lattice of teachers' perceptions of science practicum during the time of the COVID-19 pandemic. Followed by making questions and continued with instrument validation to expert validators, the data collection instrument used was a questionnaire interview distributed via google form while the teacher's perception instrument of science practicum during the COVID-19 pandemic, was a modification of Yuliana et al.,

(2017), Agustina (2017), for the teacher's perception instrument of science practicum during the COVID-19 pandemic. Can be seen in table 1.

Table 1. Questionnaire on the perception of biology teachers on practicum during the Pandemic

No	Indicator	No Question	Number of Statement Items
1	Ready to do practicum	1, 3, 5, 8, 12, 14, 17, 22, 25	9
2	Not ready to do practicum	4, 6, 7, 10, 11, 13, 15, 16, 18, 20, 21, 23, 24	13
3	Not ready to do practicum	2, 9, 19	3
Amount			25

III. Results and Discussion

In responding to a statement, respondents are asked to provide the response that best fits what they feel. The data provided by the respondents in the form of a questionnaire/questionnaire and observations will be analyzed using descriptive analysis, as shown in Figure 1 below:

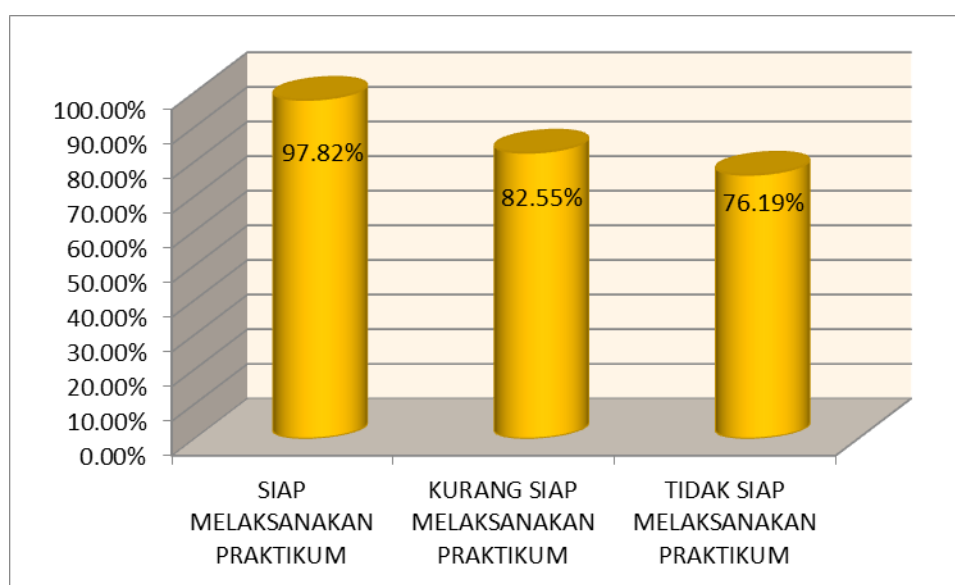


Figure 1. Diagram of high school biology teachers' perceptions of biology practicum during the Covid-19 pandemic in Rantauprapat City

The indicators in the analysis research on the perception of high school biology teachers on Biology Practicum during the Covid-19 Pandemic in Rantauprapat City, that the perception of teachers in being ready to carry out practicums obtained a score of 97.28%; while the less ready to carry out the practicum got a score of 82.22% and on the perception of the teacher who was not ready to carry out the practicum got a score of 76.19%.

In this case, it states that the perception of teachers is not ready to carry out online practicum as shown in Figure 1, while teachers who state that they are ready to carry out practicum are because most of the students have the means to carry out online learning that

supports learning, namely having an Android cellphone, as well as a good signal network. Meanwhile, those who stated that they were not ready and not ready to carry out online practicums were caused because most of the students still experienced obstacles with the facilities, as well as the condition of the signal network that was not very good and the condition of the house that was far from internet access.

3.1 Teacher's Perception of Readiness in Conducting Practicum Online

It can be seen from the results of the presentation that a percentage of 97.28% has been obtained, that the presentation value shows that teachers need to be prepared to carry out online practicum to provide good practical learning online. As according to (Khusnah, 2020) That Practicum is a learning method that can be used to prove a theory. Thinking skills and scientific processes must be developed through learning chemistry with a certain model to foster students' problem-solving abilities. The practicum method is a very effective method for learning chemistry, because the practicum helps prospective teacher students to find answers on their own based on the correct data (Wardani, 2008).

Practical learning methods are widely used not only for exact fields, but also for non-exact fields with different terms or terminology. Practicum is generally regarded as an important component in learning the fields of science and technology, such as the fields of natural sciences, medicine, and engineering. Practicum can be carried out in various forms of laboratories. The laboratory is a place or facility created to provide opportunities for students to practice a range of skills and techniques as formulated in the instructional objectives (YS, 2017). The learning process is essentially intended to develop student activity and creativity, through various interactions and learning experiences. However, in practice, we often do not realize that there are still many learning activities carried out that actually hinder the activities and creativity of students. Chemistry as a study that is abstract and complicated, so it requires real proof where this proof can only be obtained through direct experience experienced by students in practical activities. (Nurhafidhah, 2018).

3.2 Teacher's Perception of Unpreparedness in carrying Out Practicum Online

It can be seen from the results of the presentation that a percentage of 82.55% has been obtained, that the presentation value shows that the teacher is not ready to carry out online practicum to provide good practical learning when online. detail, two-way communication is very limited, changes in attitudes and behavior of students are difficult to observe. In addition, teachers also cannot provide examples of behavior directly as a form of education for students. Teachers have difficulty in growing and assessing the affective and psychomotor aspects of students. Not all practical tools are available at home. When the tools and practicum materials cannot be found completely, the practicum will not run optimally. the implementation of the practicum goes well if at the work stage, the teacher also cannot always control and direct the course of practicum activities, and is responsive when students ask about difficulties in carrying out the practicum process. However, this online practicum is only carried out on materials whose tools and materials can be easily obtained at home.

3.3 Teacher's Perception of Unpreparedness in carrying Out Practicum Online

It can be seen from the results of the presentation that a percentage of 76, 19% has been obtained, that the presentation value shows that the teacher is not ready to carry out online practicum to provide good practical learning when online. That most of the students are also in rural areas that are difficult to reach by the internet network. The use of internet media has considerable obstacles, network connections and technical errors such as server

down and error can hinder the success of the learning process. Practicum requires guidance and assistance, for parents who have low educational backgrounds it will be difficult to follow their children's school lessons or not even connect at all. This is because online learning instructions come suddenly and the teacher does not yet have a complete picture of how the technical implementation of the online practicum is. Moreover, practicum is an activity that requires direct assistance by the teacher.

3.4 Teacher's Perception of Obstacles in Conducting Practicum Online

Based on the results of the research carried out, it can be seen that the online practicum of SMA Negeri schools throughout the city of Rantauprapat experienced many obstacles. These obstacles do not only come from the teacher but also from the students. Most teachers admit that they find it difficult to design the implementation of online practicums, due to limited knowledge and skills in using technology. This is in line with research(Desak et al, 2021). That the implementation of practicum activities in online learning during the Covid-19 pandemic is rarely carried out due to the lack of availability of materials and tools available at students' homes and limited access to students' homes during this Covid-19 pandemic. Assessment of student skills in online learning is assessed outside class hours such as project assessment portfolios, products. For subject matter that should be practiced but because during this pandemic it can't be done, the teacher tries to make a practicum demonstration video and send it to online media for students to watch, so that during the learning process they only discuss the information contained in the demonstration video distributed by the teacher during the lesson. link form. The conventional learning process in educational units is replaced with online learning. New problems arise from online science learning, such as learning conditions that are not conducive, the difficulty of teachers delivering learning materials, and students' difficulties in understanding the material, especially the calculation material. To overcome this problem, the teacher's role as the manager of science learning is very necessary.

In addition to the obstacles that teachers feel themselves, they also reveal that there are obstacles that come from students. Among them are that not all practical tools are owned by students and are available at home. When the practicum facilities are not complete, the practicum will not be able to run optimally. Practical activities require guidance and assistance, for parents. because the academic success of children is largely determined by the involvement of parents in guiding and assisting their children in learning as well as guidance from the teacher. Network constraints, as described previously, greatly hinder the learning process, this ultimately makes students less enthusiastic in learning. such as not being present when learning takes place for the face-to-face learning process using applications such as Zoom, Google Meet and so on. This then causes students to forget their obligations and responsibilities as students to do assignments and others(Fikri et al., 2021). A number of teachers experienced obstacles that teachers experienced when carrying out online learning including learning applications, internet networks and devices, learning management, assessment, and supervision.(Rigianti, 2020).

According to (Satriani, et al. 2015)that through practicum activities can be a medium for learning scientific approaches, because the practicum will provide an experience that can support in carrying out scientific learning approaches, this is because in practicum activities students will be taught to formulate experimental designs, use tools, problems, take measurements, interpret acquisition data, and communicate in the form of reports. Another problem is that the tools are not well maintained, it is proven by the presence of fungi on the microscope so that students find it difficult to observe objects. Lack of practicum materials in the form of substances needed during practicum so students cannot

carry out practicums that require these substances (Endela & Harmoni, nd2019) Research was conducted on perceptions of online practicums for biology subjects. (Zamista et al., 2021).

IV. Conclusion

Based on the results of the explanation above regarding High School Biology Teachers' Perceptions of Biology Practicum During the Covid-19 Pandemic in Rantau Prapat City. During the COVID-19 pandemic, it can be concluded that indicator one is Ready to carry out practicum, obtaining a score of 97.28%; Then in the second indicator, less ready to carry out practicum, the score is 82.22%. And in the third indicator, not ready to carry out practicum, the score is 76.19%. In the end, the teacher stated that he still found it difficult to carry out practical activities during the Covid-19 Pandemic.

References

- A Nurwahidah, WN Qolbi, RM Putra, S. M. (2021). Persepsi siswa dan guru terhadap penggunaan laboratorium virtual dalam pembelajaran fisika. *Jurnal Pendidikan Dan Ilmu Fisika (JPIF)*, 1(2), 54–61.
- Agung, A., Agung, I., & Sudiatmika, R. (2021). Pelatihan pratikum IPA Sederhana Pada Pembelajaran IPA Di Masa Pandemi Covid-19. *Proceeding Senadimas Undiksha*, 342–354.
- Agustina, P. (2017). Persepsi Guru Biologi SMA Tentang Media Pembelajaran Materi Kingdom Animalia. *Proceeding Biology Education Conference*, 14(1), 318–321.
- Ariani, Y., & Widodo, W. (2022). Pensa E-Jurnal : Pendidikan Sains. *Pensa E-Jurnal : Pendidikan Sains*, 10(1), 129–134. <https://ejournal.unesa.ac.id/index.php/pensa>
- Dalora, P. (2014). Analisis pelaksanaan praktikum biologi di SMA Negeri sekota Jambi. *Universitas Jambi*, 1–69.
- Desak Made Citra Manili^{1*}, I.W. Subagia², D. M. C. (2021). Analisis Pengelolaan Pembelajaran IPA pada Masa Pandemi Covid-19 di SMP. *Jurnal Imiah Pendidikan Dan Pembelajaran*, 5(3), 362–375. <https://doi.org/10.23887/jipp.v5i3.38137>
- Encep, Andriana, Suci Ramadayanti, T. E. N. (2020). Pembelajaran IPA Di SD Pada Masa Covid 19. *Prosiding Seminar Nasional Pendidikan FKIP*, 3(1), 409–413.
- Endela, E. Z., & Selaras, G. H. n.d.(2019). Persepsi Siswa Terhadap Kegiatan Praktikum Di Laboratorium Biologi SMA Negeri 2 Painan. *Atrium Pendidikan Biologi*, 126–134.
- Fikri, M., Ananda, M. Z., Faizah, N., Rahmani, R., Elian, S. A., & Suryanda, A. (2021). Kendala Dalam Pembelajaran Jarak Jauh di Masa Pandemi Covid-19 : Sebuah Kajian Kritis. *Jurnal Education and Development Institut Pendidikan Tapanuli Selatan*, 9(1), 145–148. <http://journal.ipts.ac.id/index.php/ED/article/view/2290>
- Gultom, I. S., & Fauziah, Y. (2014). *The Perceptions Of Students About The Activity Of Biology Practical Work In Senior High School (Sma) Negeri Pekanbaru*. 1–15.
- Hamidah, A., Sari, E. N., & Budianingsih, R. S. (2014). Persepsi Siswa Tentang Kegiatan Pratikum Biologi Di Laboratorium SMA Negeri Se-Kota Jambi. *Jurnal Sainmatika*, 8(1), 49–59.
- Khusnah, L. (2020). Persepsi Guru IPA SMP / MTs terhadap Praktikum IPA Selama Pandemi. *Science Education and Application Journal (SEAJ)*, 2(2), 112–118. <http://jurnalpendidikan.unisla.ac.id/index.php/SEAJ>

- Maulah, S., & , Farikhatun Nurul A, N. R. U. (2020). Perkuliahan daring sebagai sarana pembelajaran selama pandemi Covid-19. *ALVEOLI: Jurnal Pendidikan Biologi*, 1(2), 51–61.
- Mu'minah, I. H. (2021). Pemanfaatan media pembelajaran berbasis vidio sebagai alternatif dalam pembelajaran daring IPA Pada Masa Pandemi Covid-19. *Prosiding Seminar Nasional Penelitian Dan Pengabdian, Penelitian Dan Pengabdian Inovatif Pada Masa Pandemi Covid-19*, 1197–1211.
- Ndasung, D. J. (2021). Pendidikan di Indonesia Pada Masa Pandemi Covid-19. *Jurnal Pendidikan Tambusai*, 5(2), 3014–3018.
- Ningrum, P. A., et al. (2020). The Potential of Poverty in the City of Palangka Raya: Study SMIs Affected Pandemic Covid 19. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)* Volume 3, No 3, Page: 1626-1634
- Noor, Y. A., Made, N., Putra, D., Nugroho, S. E., Marwoto, P., Mindyarto, B. N., Linuwih, S., Sugiyanto, S., Adhi, M. A., Muttaqin, R., Sakti, W., Prayitno, W., & Minhat, M. (2020). Praksis Praktikum Fisika Mode Daring: Studi Kasus Pembelajaran di SMA/MA Jawa Tengah dan Jawa Timur Semasa Pandemi Covid-19. *Unnes Physics Education Journal Terakreditasi SINTA* 3, 9(3), 1–8. <http://journal.unnes.ac.id/sju/index.php/upej>
- Nurhafidhah, M. dan. (2018). Kesiapan dan pemanfaatan laboratorium kimia pada pelaksanaan pratikum di SMA N 1 Langsa. *Proceeding Seminar Nasional Politeknik Negeri Lhokseumawe*, 2(1), 36–41.
- Rigianti, H. A. (2020). Kendala pembelajaran daring guru sekolah dasar di kabupaten banjarnegara. *Elementary School*, 7(2), 297–302.
- Saleh, A., Mujahiddin. (2020). Challenges and Opportunities for Community Empowerment Practices in Indonesia during the Covid-19 Pandemic through Strengthening the Role of Higher Education. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*. Volume 3, No 2, Page: 1105-1113.
- Satriani, A. Mushawwir Taiyeb, A. M. (2015). Analisis Hubungan Pelaksanaan Praktikum Dengan Keterampilan Proses Sains dan Hasil Belajar Biologi Peserta Didik SMA Negeri Di Kota Bulukumba Analysis Relationship of Practicum Implementation with Science Process Skills and Biology Learning Results Of Stu. *Prosiding Seminar Nasional Biologi Dan Pembelajarannya*, 141–148.
- Sihombing, E. H., Nasib. (2020). The Decision of Choosing Course in the Era of Covid 19 through the Telemarketing Program, Personal Selling and College Image. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)* Volume 3, No. 4, Page: 2843-2850
- Sugiyono.(2014).MetodePenelitianPendidikan Pendekatan Kuantitatif,Kualitatif dan R&D. Bandung: Alfabeta
- Wardani, S. (2008). Pengembangan Keterampilan Proses Sains Dalam Pembelajaran Kromatografi Lapis Tipis Melalui Praktikum Skala Mikro. *Jurnal Inovasi Pendidikan Kimia*, 2(2), 317–322.
- YS, wawan laksito. (2017). *pratikum*.
- Yuliana, S., AR, M., & Wahyuni, A. (2017). Persepsi Siswa Terhadap Pelaksanaan Praktikum Fisika Di Laboratorium SMA N Se Kota Banda Aceh. *Jurnal Ilmiah Mahasiswa (JIM) Pendidikan Fisika*, 2(3), 303–306.
- Zamista, A. A., Sellyana, A., Rahmi, H., Tinggi, S., & Dumai, T. (2021). Persepsi mahasiswa terhadap pratikum daring mata kuliah logaritma dan pemagoritma ditinjau dari perbedaan gender. *Jurnal Dinamika Pendidikan* 14(2), 70–77.