

Analysis of Student Learning Difficulties in Online Learning for Excretory System Material at Junior High School of SMP Negeri 2 Pinogaluman

Nurjihannissa Al-Hamid(*), Jusna Ahmad, Lilan Dama, Elya Nusantari,
Margaretha Solang, Djuna Lamondo

Biology Study Program, Faculty of Mathematics and Natural Sciences,
Gorontalo State University

Jl. Jendral Sudirman No. 6 Wumialo, Kota Tengah, Gorontalo 96138, Indonesia

*Corresponding author: nurjihannissaalhamid9912@gmail.com

Submitted September 15th 2023 and Accepted October 07th 2023


Abstract

Online learning is a learning system that uses internet media in the learning process. Applications that are usually used in online learning are WhatsApp, Youtube, google meet, google Classroom, and other online media. This study aims to determine the difficulties experienced by students during the online learning process on excretory system material at SMP Negeri 2 Pinogaluman. The subjects of the study were classes VIII^A and VIII^B SMP Negeri 2 Pinogaluman for the 2021/2022 Academic Year with a total of 40 respondents. The form of research is Quantitative Description. Data collection techniques in this study were carried out by survey method, namely by distributing questionnaires using internal factors consisting of cognitive, affective, interest, motivation, and intelligence indicators and using external factors consisting of indicators of the family environment, community environment, and government environment to students. Based on the results of the study, it can be concluded that students experience learning difficulties during the online learning process of excretory system material. The percentage of internal factors and external factors that affect learning difficulties is 66% which indicates that student response is low so that students experience high learning difficulties. Students experience difficulties in cognitive aspects with an average low percentage of reasoning ability of 49%

Keywords: Excretory System, Learning Difficulties, Online Learning



Jurnal Pembelajaran dan Biologi Nukleus (JPBN) by LPPM Universitas Labuhanbatu is under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License (CC BY - NC - SA 4.0)

 <https://doi.org/10.36987/jpbn.v9i3.4967>

INTRODUCTION

Learning is the provision of conditions that result in the learning process in students. The provision of this condition is in the sense that learning can be done with help from teachers and oneself (Abdullah, 2013). According to the behavioristic school, learning is the teacher's attempt to shape the desired behavior by providing an environment or stimulus. As for the cognitive stream, it defines that learning is a way for

teachers to provide opportunities for students to think in order to know and understand something that is being learned (Basri, 2015).

Learning is something that requires a process where the process is a conscious process and tends to be permanent and change one's behavior. In this process there is an increase in information which is then stored in memory and cognitive organization. Furthermore, these skills are manifested practically in the activeness of students in responding and reacting to events that occur in students or their environment (Thobroni, 2017). According to the Ministry of National Education (2006), science is a subject that aims to prepare students to have scientific literacy skills and scientific attitudes. According to Gunawan (2015), Natural Science or science has an important definition to understand. Science is defined as the study of the cause and effect of events that occur in nature.

Biology is one of the fields of science found in science subjects at the junior high school (SMP) level. One of the biological materials contained in science subjects is excretory system material. Excretion is the process of removing metabolic waste from the body of an organism. In humans waste is excreted in the form of urine, sweat, and tears. The excretory system is the process of removing metabolic waste, this substance is absorbed and transported by the blood and excreted with urine, sweat and breathing (in the form of CO₂ and H₂O) (Fried & George, 2006). Based on a circular issued by the Indonesian Minister of Education Nadiem Anwar Makarim No. 3 of 2020 on the Education Unit and No. 36963 / MPK. A / HK / 2020 concerning the implementation of education during the Corona Virus Disease (Covid-19) Emergency Period, teaching and learning activities are carried out online in order to reduce the spread of *Corona Virus Disease* (Covid-19) in Indonesia.

According to Brown (2007) The characteristics of learning are as follows: (1) Learning is mastering or "acquiring". (2) Learning is remembering information or skills. (3) The process of recalling involves the storage system, memory and cognitive organization. (4) Learning involves active conscious attention and acting according to events outside and within the organism. (5) Learning is permanent, but subject to forgetting. (6) Learning involves various forms of practice, perhaps sustained exercise with rewards and laws. (7) Learning is a change in behavior.

Explained that with online learning students have the flexibility of learning time, can learn anytime and anywhere. This online learning is carried out through several applications such as *google from, whatsapp group, video conference, google classroom, telephone*, and so on. Online learning carried out is a new thing for SMP Negeri 2 Pinogaluman which has only carried out the learning process directly so that it takes time for teachers and students to be able to adapt to this online learning process, considering that excretory material is one of the science materials in which it explains the processes that occur in the human body making this material difficult to explain online. Based on the results of interviews conducted with subject teachers, students during the online learning process there are still a number of students who have difficulty in understanding the excretory system material, lack of student participation, and do assignments not on time, so that the learning outcomes expected by the teacher do not meet the teacher's expectations and there are some parents of students who do not support the online learning process.

According to Sabaron et al. (2019), Online Learning expands the learning community. Expanding here because one student with another student has better access to communication than face-to-face discussions that are limited by space and time. According to Shah (2020), there are four obstacles faced by the world of education during the Covid-19 pandemic, namely: a) limited mastery of the internet by teachers; b) lack of facilities and infrastructure; c) limited internet access; d) Not ready funds in emergency conditions.

Learning difficulties that are usually experienced by students during the learning process include difficulties in understanding the material, difficulty completing tasks and difficulty in students in understanding the contents of textbooks (Martini, 2014). Learning difficulties are obstacles experienced by students to achieve academic achievement optimally caused by several factors (Ni'mah, 2016).

The results of interviews with several students at SMP Negeri 2 Pinogaluman, there are several obstacles experienced by students during the online learning process including: uneven distribution of free internet quota to all students, not having an android cellphone to follow the learning process, the learning process which is considered less effective because most students do not understand and understand the material when given online and are immediately given assignments, Inadequate internet network, learning processes such as returning to the age of recording materials until they run out, to the assumption that the online learning process is boring and unpleasant and poorly understood by students, resulting in reduced student interest in learning during the online learning process.

Based on the explanation above, it is necessary to conduct research on the analysis of students' learning difficulties in online learning of excretory system material at SMP Negeri 2 Pinogaluman. These learning difficulties in students will be used to find out the shortcomings and other obstacles possessed by students during the online learning process and become material for educator evaluation in science subjects excretory system material. With the analysis of student learning difficulties in this online learning process, researchers will take internal factors that come from within students in the form of student absorption during the learning process, student readiness, student abilities, and student body conditions and external factors that come from outside students in the form of disorders that cause students to be difficult and slow to receive learning material, social and environmental conditions of students.

METHOD

This research is a quantitative research that is described qualitatively. The research was conducted in May – June 2022 at SMP Negeri 2 Pinogaluman, Pinogaluman District, North Bolaang Monondow Regency. The population and sample in this study are class VIII SMP Negeri 2 Pinogaluman which consists of two classes, namely class VIII^A and VIII^B with a total of 40 respondents. The research instrument of this study is a questionnaire. Statements in research instruments are made based on indicators, namely internal factors and external factors that cause learning difficulties in learners.

Questionnaire Validity Test

The validity test of questionnaires as a research instrument is carried out to show the validity of an instrument used for research. The technique used to measure the validity of the instrument is the *pearson product moment* technique. Researchers in testing the validity of questionnaires using the SPSS 24 application.

The research instrument is said to be valid if after being tested using the SPSS 24 application it gets the *results of the calculation > rtable*. Based on the results of the validity test, there are 22 valid statements. Test validation of tests used in the cognitive realm on learning difficulties experienced by students using the (Sudijono, 2012). formula:

$$r_{xy} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{\{N\sum X^2\} - (\sum X)^2} - \{N\sum Y^2\} - (\sum Y)^2}$$

Information:

- r_{xy} : Correlation Index Number " r " Product moment
- N : Number of Test Subjects
- $\sum X$: Number X Score (Item Score)
- $\sum Y$: sum of Y (factor score)
- $\sum XY$: The number of multiplications between score X and score Y

Questionnaire Reliability Test

The reliability test of the questionnaire as a research instrument was carried out to find out whether this research instrument was sufficient to collect research data and could be trusted. To test the reliability of the instrument in this study using the SPSS 24 application. The instrument is said to be reliable if the *value of the Cronbach Alpha > 0.6*. The significance level used is 5%.

Table 1. Research Instrument Grille

No	Indicators	Sub Indicators	Statement	Sum
1	Internal	Cognitive	Objective 25 Numbers	38
		Affective	1,2,3,4,5,6,7	
		Interest	8,9,	
		Motivation	10,17	
		Intelligence	11,12	
2.	External	Family Environment	13,14	9
		School Environment	15,16,18,19	
		Community Environment	20,21,22	
Total				47

Data Analysis Techniques

Data analysis in this study using quantitative description analysis. The research instrument uses a *Likert scale* with answer choices from the range of 1 – 4 (in table 2),

Table 2. Likert Number Answer Score

Answer Options	Score
Totally Agree	4
Agree	3
Disagree	2
Strongly Disagree	1

The steps to analyze the data that has been obtained from the research questionnaire.

Calculate poll scores

$$\text{Index} = \frac{\text{Total Score}}{Y} \times 100\%$$

Information:

T = Total number of respondents who chose a particular answer

Y = Highest score of likert x number of respondents

P(n) = Choice of likert score numbers

Interpret the calculation score

Before getting the interpretation results, the highest score (Y) and the lowest score (X) are first known. Here are the steps,

$$Y = \text{Highest score of likert} \times \text{Number of respondents}$$

$$X = \text{Lowest likert score} \times \text{Number of respondents}$$

Next is found the index size (%) with the formula:

$$\text{Student Response Percentage} = \frac{\text{Total student respondents}}{\text{Maximum student respondents}} \times 100\%$$

The interpretation of the percentage of student responses can be grouped into 4 according to the table 3,

Table 3. Classification of Student Responses by [Suseno et al., \(2020\)](#)

Percentage of Student Response	Classification
85% < RPD ≤ 100%	Very High
70% < % RPD ≤ 85%	Tall
50% < % RPD ≤ 70%	Low
0% < % RPD ≤ 50%	Very low

To find out the percentage of cognitive tests using the following formula:

$$\text{Ability} = \frac{\text{Scores obtained by students}}{\text{Ideal score}} \times 100\%$$

Data on ability test results are analyzed to determine the category of cognitive ability levels of learners. The categories of reasoning abilities of learners are determined according [Suseno et al., \(2020\)](#) in the following table 4.

Table 4. Categories of Students' Reasoning Ability

Student grades	Category
76% < ≤ 100%	Good
51% < ≤ 75%	Enough
25% < ≤ 50%	Less
0% < ≤ 20%	Very Lacking

RESULTS AND DISCUSSION

Based on the analysis of questionnaires obtained from 40 respondents, the following results were obtained:

Table 5. Overview of Student Responses

No	Factors affecting learning difficulties	Indicators	Statement Number	Percentage (%)	
				Positive Statements	Negative Statements
1	Internal Factors	Affective	1,2,3,4,5,6,7	63%	72%
		Interest	8,9	60%	-
		Motivation	10,17	64%	-
		Intelligence	11,12	58%	-
2	External factors	Family Environment	13,14	73%	48%
		School Environment	15,16,18,19	67%	85%
		Community Environment	20,21,22	65%	-
Average				64%	68%
					66%

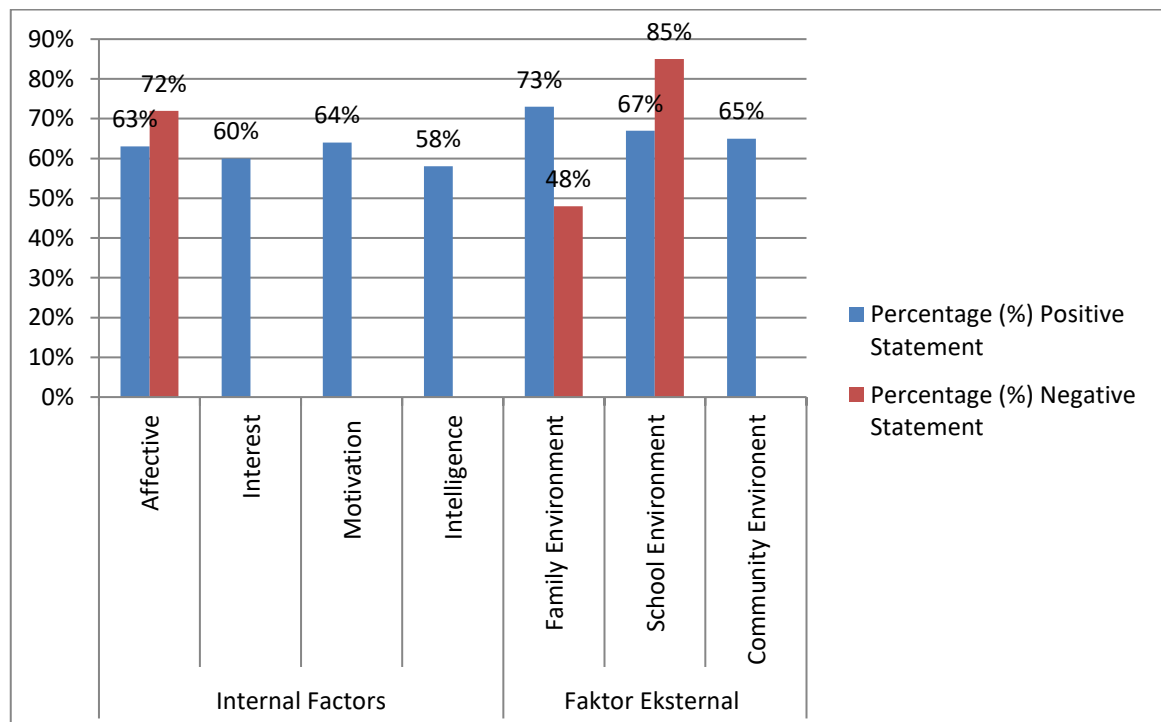


Figure 1. General Description of Student Responses

Based on the table 5 above, it can be seen that in general, the percentage of student respondent results is low, namely 66%, which indicates that students experience difficulties during the online learning process.

Internal Factors

Affective

Based on the results of the study, it can be seen that, the response of students to affective indicators is low, namely 67%, which indicates that students have learning difficulties on this indicator. For positive statements, the respondents' results showed a percentage of 63%, this indicates that students in the learning process experience difficulties, namely difficulties in doing the tasks given during the online learning process, especially in the excretory system material, which results in a decrease in student enthusiasm for learning so that when learning takes place students do not participate either in expressing opinions or asking questions.

Table 6. Learners' Responses to Affective Difficulty Indicators

Indicators	Sub Indicators	Positive Statements	Negative Statements
Affective	Assignment	67%	69%
	Participation	59%	74%
Average		63%	72%
67%			

In the negative statement, the results of respondents showed a percentage of 72%, indicating that students had difficulty learning in the online learning process and did not participate during the learning process, this is because the excretory system material is one of the biological materials that is difficult to understand when taught by the lecture method or the material is only shared through applications and students record the material. On average, students in this indicator experience learning difficulties during the online learning process, especially in student participation both in participating in online learning and when students do assignments given by the teacher during the learning process and after learning takes place.

Interest

Based on the results of the study, it was found that the response of students to the online learning process on the interest indicator was low. In this indicator, it is known that students have less interest in the online learning process because the teaching materials used are less attractive to students so that students during the online learning process do not pay attention to the material taught properly.

Table 7. Student Response to Interest Indicators

Indicators	Sub Indicators	Positive Statements	Negative Statements
Interest	Understand the material	62%	--
	Pay attention to learning	58%	-

Average	60%
---------	-----

Motivation

Based on the results of the study, it is known that, the response of students in the online learning process on motivation indicators is low. Most students do not have more motivation to carry out the online learning process on the excretory system material. The enthusiasm given by teachers during the online learning process has not motivated students to learn excretory system material online.

Table 8. Student Response to Motivation Indicators

Indicators	Sub Indicators	Positive Statements	Negative Statements
Motivation	Learning the material	50%	-
	Passion for learning	77%	-
	Average	64%	

Intelligence

Based on the results of the study, it is known that, the response of students to intelligence indicators is low. Students have difficulty in adjusting the learning process to be carried out. Students experience difficulties in online learning of excretory system material because students are not familiar with the online learning process, this can be seen from the adjustment process that is lacking and makes the learning process ineffective and students' attention to excretory system material is also reduced.

Table 9. Student Response to Intelligence Indicators

Indicators	Sub Indicators	Positive Statements	Negative Statements
Intelligence	Attention to the material	59%	-
	Adjustment to the online learning process	57%	
	Average	58%	

Cognitive

Based on the results of research on cognitive indicators, it is known that students have difficulty in doing questions about excretory system material. In the 25 questions, from a total of 40 respondents who answered the questions, a percentage value of 49% was obtained. Students have difficulty in doing the questions given about the excretory system, this is because students do not understand the excretory system material as a whole. Students showed low results on indicator 2 with a percentage of 43%, this shows that students have difficulty in identifying the organs contained in the excretory system along with the role of each organ of the excretory system.

Table 10. Percentage of Cognitive Indicators

No	Indicators	Question Point	Percentage
1	Controlling the notion of excretion	1	50%
2	Understand and identify organs that play a role in the excretory process	2,3,4,5,6,7,8,9,10,11,12	43%
3	Parts of the kidneys and their functions and the process of urine formation	13,14,15,16,17	47%
4	Disorders of the excretory system	18,19,20,21,22,23	47%
5	Efforts to maintain the health of the excretory system	24,25	59%
Average			49%

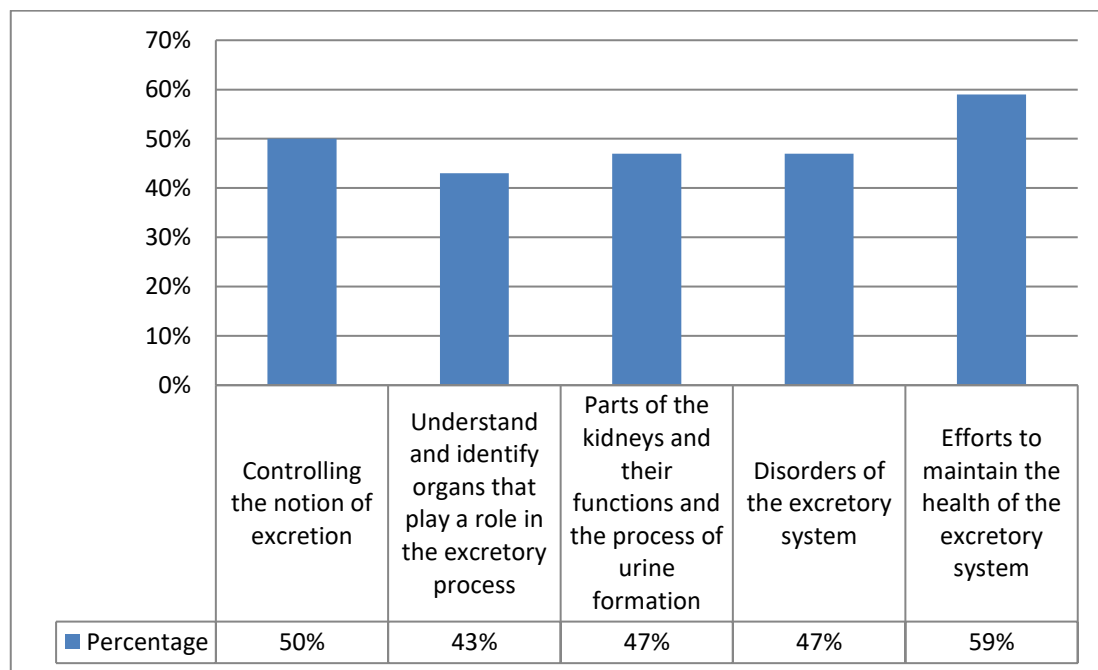


Figure 2. Percentage of Cognitive Indicators

External Factors

Family Environment

Based on the results of the study, it is known that, in positive statements the response of students is high, and for negative statements the response of students is low this means that students get parental support during the online learning process. One of the supports provided by parents can be seen from all students having Mobile phones as a tool used during the online learning process, students are also bought quotas either used during the online learning process or to do assignments given by the teacher. Another

support is when learners will work on assignments, parents strive to facilitate the needs of learners.

Table 11. Student Response to Family Environment Indicators

Indicators	Sub Indicators	Positive Statements	Negative Statements
Family Environment	Financial Support	73%	48%
	Average		61%

School Environment

Based on the results of the study, it is known that, the response of students to positive statements is low. Students in the online learning process are also often asked by teachers to use youtube when students find it difficult to understand the material, but even though asked by teachers to learn the material more deeply using youtube, most students rarely use youtube. For negative statements, student response is also high, this indicates that students have difficulty understanding the material when taught online and the media used by teachers during the online learning process takes place in the form of textbooks, making it difficult for students to understand the material because there are too many explanations and students do not understand when only explained by the lecture method without media such as torsos and practicums carried out.

Table 12. Student Response to School Environment Indicators

Indicators	Sub Indicators	Positive Statements	Negative Statements
School Environment	Media	67%	85%
	Teacher's Explanation		81%
	Learning System		80%
Average		67%	85%
			76%

Community Environment

Based on the results of the study, it can be seen that, the response of students to community environmental indicators is low. Students experience difficulties in this online learning process because students feel that the support provided by both families, schools and the government has not made student participants more active in learning and motivated to carry out the online learning process as a result students have difficulty in understanding the excretory system material taught.

Table 13. Student Response to Community Environmental Indicators

Indicators	Sub Indicators	Positive Statements	Negative Statements
Community Environment	Government	64%	-
	Surrounding Community	62%	

Family school	and	70%
Average		65%

Online Learning Process of Science Subjects Excretory System Material of SMP Negeri 2 Pinogaluman

The design of the implementation of learning taught in schools through the observation of researchers includes,

Learning media

The learning media used by Junior High School of SMP Negeri 2 Pinogaluman researchers found that teachers who entered to carry out the learning process only used textbooks as learning media. Students are asked to record lesson material, because students have a very limited learning time of 30 minutes, teachers deliver more material through the WhatsApp application and students are asked to [Yulianto et al. \(2020\)](#), do exercises contained in student textbooks. According to the WhatsApp application is 98% widely used by students and college students. The WhatsApp application also makes it easy for teachers to send materials and assignments to students in various forms, such as *Microsoft Word, Microsoft Power Point, Video Link*, and so on ([Rianti, 2020](#)).

Learning methods

Class VIII science subject teachers who teach excretory system material use the lecture method which results in students being less active during the learning process, and less reciprocal interaction between students and teachers. Through observation, researchers found that teachers during the learning process explained more without practice in the laboratory due to learning time constraints. Which we know that science learning, especially excretory system material, if only explained without practice, students will find it difficult to understand the material taught so that the lecture method without practice or explanation accompanied by pictures on the board makes it very difficult for students to understand the material. According to [Atsani \(2020\)](#), the internet network is a means that can connect students and teachers in carrying out the learning process through applications that are still lacking so that the learning process does not run smoothly because not all students can enjoy it. Success in the teaching and learning process is determined by the teacher in using learning methods and also determined by student curiosity and motivation ([Muldayanti, 2013](#)).

Implementation of the learning process

Based on the observations of researchers that during the learning process, important points that should be in the learning process are no longer used such as perception, delivery of learning objectives, connecting material with daily life, motivating students, very limited learning facilities and infrastructure. Based on interviews with subject teachers, it was found that very limited learning time constraints affect subject teachers in delivering teaching materials. The material presented is sometimes not completed because in a week only 30 minutes of time is given for science subjects. According to [Utami et al. \(2020\)](#), the difficulty of online learning in students is because

students have not been able to manage and control online learning from home and students have not been able to provide initiative for themselves.

Difficulties of Students in the Online Learning Process of Excretory System Material *Internal Factors*

Based on the results of research conducted during the online learning process, students experience difficulties in learning motivation, interest in learning, participation, enthusiasm for learning, students' ability to adapt to the learning process, and students' learning ability on excretory system material. Because of these things, students experience difficulties during the online learning process and reduce student learning outcomes on excretory system material. Students find it difficult to adapt to the learning process carried out online, considering that the excretory system material is very difficult material if it must be understood by relying only on the material in the textbook, plus during this online learning process, teachers mostly use the WhatsApp application by sending teaching materials and asking students to record the material. In addition, students also experience difficulties in doing the tasks given by the teacher because the tasks given by the teacher are too many. During the online learning process, students also find it difficult to interact with other students so that student participation is reduced and students experience boredom during the learning process and this affects the enthusiasm for learning of students which eventually decreases. This is also supported by research conducted by [Tomi & Erina \(2020\)](#), which shows that in the online learning process students experience difficulties in understanding the material explained by the teacher and difficulties in accessing the internet network.

The cognitive aspect is an aspect related to students' thinking ability in knowing or understanding the material of the Human Excretory System. The level of cognitive ability of students can be seen in terms of students' ability to do Human Excretory System material problems. In this material, it is known the difficulties experienced by students in carrying out the tests given. The tests given to students have not been maximized. In the test, there are five indicators related to the excretory system material, but the test results show that students take the test with an average of 49%. The results of this test on students show that students have difficulty in doing the test given. This is supported by research from [Simorangkir & Martina \(2020\)](#), that students have difficulty filling out the tests given and the results show that student achievement at 6 levels of cognitive level is 57.5%. Learners have difficulty in understanding all indicators on the material of the excretory system. The understanding of students on the excretory system material is because the online learning process carried out in schools makes students less participatory and decreases the interest and enthusiasm for learning of students. Students have not utilized the existing internet network properly due to the ability of students to adjust to the online learning process that takes place.

External Factors

Based on the results of the study, external factors that greatly influence students in the online learning process are the facilities and infrastructure used both facilities and infrastructure at home in the form of very limited quotas, and the difficulty of getting a good network, facilities and infrastructure provided by schools in the form of learning media and in the community when students do assignments often experience difficulties due to the absence of someone who is able to accompany students in completing tasks given by the teacher. This is in accordance with research conducted by Innaka (2020), that there are still obstacles in the online learning process starting from determining the right model to be used in the online learning process, not understanding the use of technology, the difficulty of learning independently and no group discussions to inadequate internet networks. Alternatives that can be done by schools include providing quotas for free, sending pdf books and videos related to biology learning materials and conducting discussion activities among teachers in introducing technology.

CONCLUSION

Internal Factors: The difficulties experienced by students during the online learning process on the excretory system material at Junior High School of SMP Negeri 2 Pinogaluman are influenced by students' enthusiasm for learning which is reduced due to the media used, student participation is reduced due to time and limitations in expressing opinions, too many homework makes it difficult for students to do because students do not understand the material taught, And interest in learning during the online learning process is also reduced so that the ability of students to receive material also decreases, students also have difficulties in adjusting the learning process that was originally face-to-face and must switch to the online learning process making students less understanding of the material because the excretory system material is one of the materials that is difficult for students to understand when taught online.

External Factors: The difficulties experienced by students during the online learning process on excretory system material at Junior High School of SMP Negeri 2 Pinogaluman are influenced by support from families, school environments and the environment around students. Students get support from family during the online learning process so that there are not many difficulties experienced in the family environment. For the school environment, students experience difficulties in the form of lack of facilities and infrastructure provided by the school to support the online learning process. For the surrounding environment, students do not experience difficulties seen from the support from the surrounding environment when students do the assignments given by the teacher during the online learning process.

REFERENCES

Abdullah, S. R. (2013). *Scientific Learning for Curriculum Implementation 2013*. Jakarta: Bumi Aksara. Page: 306.

- Atsani, L. G. (2020). Transformation of Learning Media during the Covid-19 Pandemic. *Al-Hikmah: Journal of Islamic Studies*, 1, 82-93. <http://ejournal.kopertais4.or.id/sasambo/index.php/alhikmah/article/view/3905>
- Basri, H. (2015). *A New Paradigm of Learning System*. Bandung: Pustaka Setia. Page: 195-206.
- Brown, H. D. (2007). *Principles of Language Learning and Teaching (Fifth Edition)*. USA: Pearson Education. Page: 430.
- Fried, G. H., & George, J. H. (2006). *Schaum's Outline of Biology Second Edition*. Jakarta: Erlangga. Page: 375
- Gunawan. (2015). *ICT-Based Science Learning Model*. Mataram: University of Mataram. Page: 127
- Innaka, A. (2020). *Analysis of Constraints and Alternatives to Biology Learning During the Covid-19 Pandemic at YAPIM Taruna Dolok Masihul Private High School*. (Bachelor Thesis, State Islamic University of North Sumatra. 98 p.
- Martini, J. (2014). *Learning Difficulties Perspectives Assessments and Copes*. Jakarta: Ghalia Indonesia. Page: 239-245
- Muldayanti, N. D. (2013). Indonesian Journal of Science Education. *Indonesian Journal of Science Education*, 2(1), 12-17. <https://doi.org/10.15294/jpii.v2i1.2504>
- Ni'mah, M. T. (2016). *Thesis. Fak tor Analysis of the Causes of Difficulty Learning Mathematics Class IV Public Elementary School, West Ungaran District, Semarang Regency*. Masters Thesis, Semarang State University. 112 p.
- Rianti, H. A. (2020). Obstacles to online learning of elementary school teachers in Banjarnegara Regency. *Journal of Elementary Acholl*, 7(2), 297-302. <http://dx.doi.org/10.31316/esjurnal.v7i2.768>
- Shah, A. R. (2020). Impac of Covid-19 Education in Indonesia School, Skill, and Learning Processes. *Journal of Social and Cultural Syar-I*, 7(2), 395-402. <https://doi.org/10.15408/sjsbs.v7i5.15314>
- Simorangkir, A., & Martina, A. N. (2020). Analysis of students' learning difficulties on the material of the human excretory system. *Journal of Biology Education*, 8(1), 1-11. <https://doi.org/10.24114/jpp.v8i1.11247>
- Sobron, A. N., Bayu, Rani, & Meidawati, S. (2019). Student Perceotions in The Study of the Influence of Online Learning on IPA Learning Interest. *Journal of Islamic Education and Multiculturalis*, 1(2), 30-38. <https://doi.org/10.37680/scaffolding.v1i2.117>
- Sudijono, A. (2012). *Introduction to Educational Evaluation*. Jakarta: PT. King Grafindo Persada. Page: 504.

- Suseno, P. U., Ismail, Y., & Ishmael, S. (2020). Development of Multimedia Base Interactive Video Mathematics Learning Media. *Jambura Journal of Mathematics Education*, 1(2), 1-10. <https://doi.org/10.34312/jmathedu.v1i2.7272>
- Thobroni, M. (2017). *Learning & Learning (Theori and Practice) Second Printing*. Yogyakarta: Ar-Ruzz Media. Page: 383.
- Tomi, A. S., & Erina, M. S. (2020). Analysis of Biology Education Problems in First Middle Schools of the Covid-19 Pandemic Era. *Journal of Education and Teaching Review*, 3(2), 1-10. <https://doi.org/10.31004/jrpp.v3i2.1278>
- Utami, Y. P., Alan, D., Cahyano, D., & Indonesia, U. T. (2020). Study At Home: Learning Difficulties Analysis. *Scientific Journal of Realistic Mathematics (Ji-Mr)*, 1(1), 18-21. <https://doi.org/10.33365/ji-mr.v1i1.252>
- Yulianto, E., Cahyani, P. D., & Silvianita, S. (2020). Comparison of social presence in online learning using Whatsapp Group and Zoom webinars based on learners' perspectives during the Covid-19 pandemic. *Journal of Educational Technology and Innovation Research JARTIKA*, 3(3), 332-341. <http://dx.doi.org/10.36765/jartika.v3i2.277>

How To Cite This Article, with APA style :

Al-Hamid, N.N., Ahmad, J., Dama L., Nusantari E., Solang M., & Lamondo D. (2023). Analysis of Student Learning Difficulties in Online Learning Excretory System Material at Junior High School of SMP Negeri 2 Pinagaluman. *Jurnal Pembelajaran dan Biologi Nukleus*, 9(3), 588-602. <https://doi.org/10.36987/jpbn.v9i3.4967>