

Analysis of Learning Difficulties in Biology Material Through The Implementation of Merdeka Curriculum in First Grade (X Class) Senior High Students of SMA Negeri 2 Percut Sei Tuan

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Submitted April 12th 2024 and Accepted June 22th 2024


Abstract

The Ministry of Education, Culture, Research, and Technology (Kemendikburistek) introduced a policy promoting the Independent Curriculum as an optional approach for educational institutions to enhance learning from 2022 to 2024, aiming to elevate educational standards. However, at SMA Negeri 2 Percut Sei Tuan, North Sumatra, observations and interviews revealed that the adoption of this curriculum has been incomplete due to various challenges hindering student learning. This study utilized qualitative methods, focusing on descriptive research conducted among biology teachers and first-year students, totaling 36 individuals. Result identified several obstacles students face in learning biology under the Independent Curriculum, categorized as both internal and external factors.

Keywords: *Learning difficulties; independent curriculum; Internal and external factors*



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 <https://doi.org/10.36987/jpbn.v10i2.5847>

INTRODUCTION

Education stands as a fundamental aspect of human life, serving as a pivotal process that shapes individuals' attitudes and behaviors through cultivation and training. It enables individuals to uncover their potential and equip themselves for advancements driven by scientific and technological progress (Nainggolan et al., 2018). Education is a human endeavor aimed at enhancing character by nurturing personal capabilities (Rahman et al., 2022). Today, the evolution of education progresses swiftly, evident in various challenges within the educational domain. In Indonesia, educational development invariably revolves around the curriculum adopted by schools (Ananda & Hudaidah, 2021). The curriculum functions as a cornerstone for

educational learning processes, thus serving as a guiding framework for education introduction in Indonesia (Vasmin et al., 2020; Muhammad, 2021).

According to the national education system law number 20 of 2003, learning is defined as the interaction between students, educators, and learning resources within an educational environment (Khasanah et al., 2017). The learning process consists of three interconnected elements: educational objectives, teaching and learning processes, and learning outcomes, all of which are essential for effective learning to take place (Junaedi, 2019). The method of teaching employed significantly influences the learning outcomes, which may be affected by student learning difficulties (Korosando & Raji, 2023). In education, the learning process involves teachers and students engaging with complex subject matter, such as biology, which encompasses the study of life, its structures, functions, growth, evolution, distribution, and taxonomy (Farahani et al., 2023). Research by Azizah & Alberida (2021) indicates that biology education often falls short of effectiveness due to various challenges faced by students, including lack of motivation, inadequate critical thinking skills, and cognitive difficulties. These challenges in learning can originate from different sources, including students themselves, educators, educational materials, and the curriculum used as a foundation for learning. The importance of knowledge is emphasized in the Qur'an, as exemplified in QS al-Taubah/9:122, which underscores the detrimental impact of ignorance on human life. Therefore, understanding the issues within the educational realm is crucial for enhancing the quality of education. These issues can stem from internal factors, such as familial influences, as well as external factors like curriculum changes and other educational challenges.

The curriculum is considered the fundamental framework for learning within educational institutions, encompassing the structured development of learning materials, social interactions, and teaching methods (Suryaman, 2020). Its primary function is to facilitate students' achievement of educational goals in a methodical and sustainable manner (Wannesia et al., 2022). In response to the challenges posed by Covid-19, the Ministry of Education, Culture, Research, and Technology (MoECT) introduced the Merdeka Curriculum as an additional option for educational institutions to support learning recovery and improve educational standards from 2022 to 2024. The effectiveness of this curriculum will be assessed through a review of the national curriculum policy in 2024, focusing on the outcomes of the learning recovery period (Hilmin et al., 2022). The Merdeka Curriculum is one of several new educational approaches aimed at addressing the learning disruptions caused by the pandemic. It emphasizes internalized learning processes to deepen students' comprehension and enhance their skills. Teachers are empowered to select diverse teaching tools, thereby tailoring learning experiences to meet the specific needs and interests of their students (Andari, 2022).

Based on observations and interviews conducted at SMA Negeri 2 Percut Sei Tuan, the school was among the first to adopt the independent curriculum starting in 2021, particularly in biology education. At SMA Negeri 2 Percut Sei Tuan, the independent curriculum is implemented across six classes in the 10th grade, specifically in classes X_A through X_F. However, the implementation of this curriculum has been incomplete due to various factors hindering students' learning experiences. In terms of biology education using the independent curriculum at SMA Negeri 2 Percut

Sei Tuan, several challenges have been identified. These include the complexity of biology terminology and dense material, which requires students to memorize extensively, leading to boredom. Moreover, teachers' monotonous teaching styles and limited variety of learning media have contributed to a lack of student motivation. Consequently, these issues have disrupted the smoothness of biology learning at SMA Negeri 2 Percut Sei Tuan in the 10th grade, where the teaching approach follows the Technological Pedagogical Content Knowledge (TPACK) model

Several studies have focused on exploring learning challenges, yet research specifically addressing the Merdeka curriculum remains scarce as it is a recent addition to school curricula. For instance, [Ulfa et al., \(2023\)](#) examined Student Learning Difficulties in Biology at SMA Muhammadiyah Aimas, Sorong Regency. [Helentina \(2019\)](#) conducted a similar study analyzing learning obstacles in biology. Additionally, [Nani & Hendriana \(2019\)](#) investigated difficulties in Indonesian Language learning at SDN 12 Singkawang. These studies primarily address challenges in specific subjects, lacking exploration into difficulties related to the independent curriculum implementation. Therefore, it opens up opportunities for researchers to conduct research on “Analysis of learning difficulties in biology learning through the implementation of the Merdeka Belajar curriculum for grade X students” at the high school level because no researcher has conducted research on this topic.

Based on the aforementioned background description. The purpose of this study is to find out how learning difficulties in biology learning are implemented from the Merdeka curriculum and solutions that can be done by educators to overcome this problem, especially in the context of biology subjects. This research needs to be applied as information to educators on how difficult it is to implement learning in this independent curriculum. With the methods that this study has undergone, the results should provide educators who sense that kids are having learning challenges as a result of the curriculum shift in Indonesia with information or a study.

RESEARCH METHODS

The method used in this research is a qualitative method with a descriptive type of research because a description of phenomena, events and attitudes of a group will be carried out [Prawiyogi et al., \(2021\)](#). This research was conducted at SMA Negeri 2 Percut Sei Tuan which is located at Jl. Pendidikan, Bandar Klippa, Kec. Percut Sei Tuan, Deli Serdang Regency, North Sumatra. This research will be carried out in the even semester of the 2024-2025 school year.

Sample and Participants

The population in this study were class X biology teachers who were the implementers or implementers of the implementation of the independent curriculum and all students in class X E totaling 36 students and class X F totaling 36 students at SMA Negeri 2 Percut Sei Tuan.

Instrument

The data used by researchers is obtained through instruments given to the subject. The instrument used is an interview guideline instrument for students consisting of 10 questions that have been validated by the validator so that it is feasible to use. As well as an interview guideline instrument for biology teachers consisting of 18 questions which have also been validated by a biology learning expert validator. The instrument used on students is only an interview instrument which contains questions related to the application of the Merdeka curriculum to student learning difficulties.

Data Collection

Data collection technique is one of the ways that researchers must do to obtain data. In this study, researchers used data collection techniques, namely observation, interviews, and documentation.

Observation

Observation is based on data, namely in the form of facts about reality obtained by involving all five senses (Apriyanti et al., 2019). In this study, observations were made to collect data on teacher and student activities in the implementation of biology learning in the independent curriculum. The type of observation used in this study is passive participation observation. Passive participation is when the researcher comes to the place of activity of the person being observed, but does not participate in the activity (Sugiri & Priatmoko, 2020).

Interview

According to Trivaika & Senubekti (2022) an interview is an interpersonal face-to-face situation where one person as an inquirer, asks one interviewee and several questions are made to get answers related to research problems. In this study, interviews were conducted, namely to explore information regarding the implementation of biology learning, to explore information regarding the analysis of learning difficulties in biology learning through the implementation of an independent curriculum. The type of interview used in this research is a structured interview. According to Kamaria (2021) this structured are interviews conducted in detail according to the interview guidelines that have been provided.

Documentation

The documentation method is a data collection technique through written text and softcopy editions, such as books, e-books, reports and others where the information comes from important records from either institutions or individuals (Yusra et al., 2021). Documentation is a picture of the implementation of biology learning by researchers to strengthen the research results in the form of Implementation of Biology Learning implementation in the Merdeka Curriculum for Class X Students of SMA Negeri 2 Percut Sei Tuan for the 2024/2025 School Year. The data to be obtained from the documentation in this study are: school profile, organizational structure, teacher and student data, teaching tools, learning resources.

Data Analysis Techniques and Data Validity Checking Techniques

The phases of data analysis comprise this research: data reduction, data display, and conclusion drawing/verification. Data relevant to the formulation of research topics are the main focus of data reduction (DR) researchers. The data selection stage is continued in this step. Researchers merely restrict data according to how the problem is formulated. The information pertaining to the first problem's formulation centers on the reasons behind the challenges students face when learning biology through the use of an independent curriculum in class X SMA Negeri 2 Percut Sei Tuan. It also discusses potential solutions and initiatives to address these challenges. The data sources of this research are biology teachers and class X students. Primary data includes questionnaire results and interview results. Then the secondary data itself is obtained from the results of the documentation sheet. In order to successfully find out the difficulties of students in the biology learning process in the implementation of the independent curriculum using a measurement scale, namely the Likert scale, so that the respondent directly makes his decision through one of the answer scores in the statement that has been provided, then the answer is given a value from a score of 1-4.

Furthermore, the data analysis technique is carried out through 4 stages, namely 1) data collection at this stage, the researcher collects the results of the questionnaire and interviews, then checks the completeness of the results of the interviews and questionnaires; 2) data reduction, namely the researcher determines the real data needed, then the data is summarized, the important points are determined depending on what the researcher needs at the time of the research, and determines each answer score determined through the predetermined score; 3) data presentation, namely the researcher makes descriptive data conclusions and systematic data and then enters the data into the descriptive percentage equation through [Vasmin et al., \(2020\)](#) formula, namely :

$$P = \frac{F}{N} \times 100\%$$

Description :

P = Relative frequency of each category

F = Number of respondents in the category

N = Total Respondents

After the data is entered into the descriptive percentage formula, the data is categorized using qualitative statements so that a descriptive percentage category table is made based on the understanding criteria.

RESULTS AND DISCUSSION

The results of research on the factors of student difficulties in the biology learning process in the implementation of the independent curriculum at SMA Negeri 2 Percut Sei Tuan school were obtained from the results of giving a questionnaire totaling 10 statement points and the results of interviews with biology teachers and students on May 15, 2024. The results of research on internal factors with 3 indicators include health, interest and learning attitudes. Then the results of research on external

factors with 2 indicators include family and school. Factors causing learning difficulties in learning biology through the implementation of an independent learning curriculum from indicators can be seen through Table 1.

Table 1. Recapitulation of the percentage of students' difficulty factors in learning biology in the independent learning curriculum

NO.	Indicator	Value range	Percentage(%)	Category
1.	Health	51%-75%	68,6 %	Medium
2.	Interests	51%-75%	59,7 %	Medium
3.	Learning attitude	25%-75 %	72,7 %	Medium
4.	Family	75%-100%	81,3 %	High
5.	School	75%-100%	83,6 %	High

According to the research findings on factors contributing to students' challenges in learning biology under the independent learning curriculum, 68.6% of students reported moderate health issues. This indicates that health factors significantly affect student learning activities within this curriculum. For instance, one Class X student from SMA Negeri 2 Percut Sei Tuan mentioned experiencing headaches and stomach pain during learning sessions, leading to discomfort and difficulty in focusing on biology lessons taught by the teacher. Furthermore, the study revealed that the interest in learning biology was moderate, scoring 59.7%. This corresponds with students' feedback during interviews, where the use of technical language in biology lessons posed a hurdle to effective learning. Additionally, the indicator for learning attitudes scored 72.7%, also categorized as moderate, with some students neglecting to take notes or maintain focus during lessons.

The research data on external factors affecting students' difficulties in learning biology under the independent learning curriculum indicates that 81.3% of families are categorized in the high-income bracket. Family factors significantly influence students' learning challenges, encompassing parental educational approaches and economic circumstances. Indifference from parents towards their children's academic progress can lead children to prioritize play over studying. Moreover, the economic status of families affects students' learning difficulties. At SMA Negeri 2 Percut Sei Tuan, particularly in Class X biology, the implementation of the Technological Pedagogical Content Knowledge (TPACK) model necessitates the use of gadgets during lessons. Consequently, some students in Class X F do not possess the required gadgets, thereby experiencing challenges in the biology learning process. This aligns with the observations of the biology teacher at SMA Negeri 2 Percut Sei Tuan, who noted:

“One of the factors causing student learning difficulties in learning biology through the implementation of the independent curriculum in class X SMA Negeri 2 Percut Sei Tuan is the factor of family economic conditions. In this SMA Negeri 2 Percut Sei Tuan school, the Technological Pedagogical Content Knowledge (TPACK) model has been implemented since 2021. In certain teaching materials, for example, the material on the classification of living things, students are allowed to use devices through my monitoring to work on problem assignments privately. However, there are some students who do not have devices, this certainly makes students feel difficult in

carrying out the biology learning process. The reason students do not have devices is because of the factor of family economic conditions that are still not sufficient".

Moreover, the school indicator scored 83.6%, indicating a high rating. School-related factors contribute significantly to students experiencing difficulties in learning biology under the independent curriculum. The inadequacy of facilities and infrastructure is a primary reason for students facing challenges, as biology education inherently demands ample resources to enhance student comprehension.

These findings align with [Vasmin et al., \(2020\)](#), where indicators such as interest, readiness, motivation, and health were predominantly in the low to moderate percentage categories. Notably, no indicators in their study achieved a high percentage. However, the distinction lies in the curriculum framework: the focused on the 2013 curriculum, whereas this study centers on the Merdeka Belajar curriculum. Nevertheless, both studies converge on discussing students' struggles in learning biology

Solutions and Efforts to Overcome Student Learning Difficulties

Based on an analysis of the challenges in learning biology under the independent curriculum at Class X of SMA Negeri 2 Percut Sei Tuan, encompassing both internal and external factors, the researcher concludes that the primary responsibility for addressing these difficulties lies with the biology teachers. This conclusion is drawn from observations and interviews with biology teachers who are involved in implementing the independent learning curriculum. The biology teachers have received training specific to the independent learning curriculum and demonstrate readiness to manage biology lessons under this framework. They are well-prepared to address various factors contributing to student learning challenges during their classes. This finding is consistent with preliminary observations and interviews conducted by researchers with biology teachers from Class X at SMA Negeri 2 Percut Sei Tuan, detailing the factors, solutions, and efforts employed by teachers to mitigate student difficulties in learning biology.

Internal factors

The internal factors of student learning difficulties, namely health indicators, solutions and efforts made by teachers in overcoming these indicators, namely teachers always ensure that all students are in good health when participating in the biology learning process activities. Furthermore, regarding indicators of student interest in learning, the solutions and efforts made by teachers in overcoming these indicators are that teachers make learning variations more diverse and interesting by accompanying games during the learning process so that students feel more enthusiastic and interested in participating in biology learning activities. As the biology teacher's statement is as follows:

"When I teach by using various interesting teaching variations such as TGT (Team Games Tournament) in between lessons.(Team Games Tournament) in between lessons, students feel more excited and focused when following biology learning takes place". This is consistent with research by [Muderawan et al., \(2019\)](#), which found that a student's learning difficulties is indicated by the existence of specific internal barriers to achieving learning outcomes..These disorders can be physiological,

sociological, or psychological in nature and can ultimately lead to lower learning performance than it should be.

External factors

This study examines external factors contributing to student learning difficulties, particularly focusing on family-related indicators. Teachers address these challenges by intensifying their attention and instructional efforts towards students. Additionally, concerning economic disparities among families leading to some students lacking gadgets, teachers respond by diversifying teaching methods, incorporating tools such as projectors (infocus) to facilitate biology lessons. Regarding school-related challenges such as insufficient facilities and infrastructure, teachers mitigate these issues by improvising simpler and more readily available resources to ensure the smooth progression of biology learning activities.

However, on going curriculum advancements in Indonesia, such as the implementation of the Merdeka curriculum, pose continuous challenges for teachers. Research by [Boudouaia et al., \(2024\)](#) underscores that teachers face pressures and are driven to achieve successful learning outcomes amidst curriculum changes. It highlights the crucial role of teachers in successful curriculum implementation, emphasizing their professionalism and competency in navigating internal and external educational environments. Similarly, findings from [Dang et al., \(2023\)](#) support the theory that teachers play a pivotal role in curriculum implementation. Their study stresses the importance of teacher commitment, skills, and adaptability in effectively executing curriculum mandates.

CONCLUSION

Based on the results of research and data analysis, the conclusion is that student learning difficulties in learning biology through the implementation of an independent learning curriculum in class X SMA Negeri 2 Percut Sei Tuan are internal factors in the form of indicators of health, interest and student learning attitudes and external factors in the form of family and school indicators. Solutions and efforts to overcome these factors of student learning difficulties are in class X biology teachers. Because the teacher as an implementer who guides and supervises the learning process takes place.

REFERENCES

- Ananda, A. P., & Hudaidah, H. (2021). Perkembangan Kurikulum Pendidikan Di Indonesia Dari Masa Ke Masa. *SINDANG: Jurnal Pendidikan Sejarah Dan Kajian Sejarah*, 3(2), 102–108. <https://doi.org/10.31540/sindang.v3i2.1192>
- Andari, E. (2022). Implementasi Kurikulum Merdeka Belajar Menggunakan Learning Management System (LMS). *Allimna: Jurnal Pendidikan Profesi Guru*, 1(2), 65–79. <https://doi.org/10.30762/allimna.v1i2.694>
- Apriyanti, Y., Lorita, E., & Yusuarsono, Y. (2019). Kualitas Pelayanan Kesehatan Di Pusat Kesehatan Masyarakat Kembang Seri Kecamatan Talang Empat Kabupaten Bengkulu Tengah. *Profesional: Jurnal Komunikasi Dan Administrasi*

Publik, 6(1). <https://doi.org/10.37676/professional.v6i1.839>

Azizah, N., & Alberida, H. (2021). Seperti Apa Permasalahan Pembelajaran Biologi pada Siswa SMA? *Journal for Lesson and Learning Studies*, 4(3), 388–395. <https://doi.org/10.23887/jlls.v4i3.38073>

Boudouaia, A., AL-Qadri, A. H., Houichi, A., & Diafi, S. (2024). A study on the effect of school culture on teachers' commitment to curriculum implementation: The mediating role of self-efficacy and job satisfaction. *Heliyon*, 10(8), e29183. <https://doi.org/10.1016/j.heliyon.2024.e29183>

Dang, H. T. T., Bui, D. T., Vuong, Q. A., Phan, H. G. T., Nguyen, C. T., & Pham, B. D. T. (2023). Teachers' perspectives on the implementation of the new national curriculum - Dataset from Vietnam. *Data in Brief*, 49, 109451. <https://doi.org/10.1016/j.dib.2023.109451>

Farahani, N., Fitri, R., Selaras, G. H., & Farma, S. A. (2023). Faktor Kesulitan Belajar Siswa Pada Mata Pelajaran Biologi Sma. *Jurnal Edukasi Biologi*, 9(2), 177–185. <https://doi.org/10.21831/edubio.v9i2.19519>

Helentina, H., Pulungan, A. S. S., & Sinaga, A. (2019). Analisis Kesulitan Belajar Siswa Pada Mata Pelajaran Biologi Di Kelas X Ipa Sma Negeri 4 Kisaran Tahun Pembelajaran 2016/2017. *Jurnal Pelita Pendidikan*, 5(1), 131–139.

Hilmin, H., Dwi Noviani, & Ani Nafisah. (2022). Kebijakan Pemerintah Daerah Dalam Penerapan Kurikulum Merdeka. *Khatulistiwa: Jurnal Pendidikan Dan Sosial Humaniora*, 2(2), 148–162. <https://doi.org/10.55606/khatulistiwa.v2i2.565>

Junaedi Ifan. (2019). Proses Pembelajaran Yang Efektif. *Jisamar*, VOL. 3 NO. 2(2), 19–25.

Kamaria, A. (2021). Implementasi kebijakan penataan dan mutasi guru pegawai negeri sipil di lingkungan dinas pendidikan kabupaten halmahera utara. *Jurnal Ilmiah Wahana Pendidikan*, 7(3), 82–96. <https://doi.org/10.5281/zenodo.4970644>

Khasanah, N., Listiawan, T., & Mugianto. (2017). Analisis Berpikir Kritis Siswa Dalam Pemecahan Masalah Matematika Pada Materi Lingkaran. *Seminar Nasional STKIP PGRI Pacitan 2017*, 2(9), 291–299. <https://doi.org/10.17605/OSF.IO/WSZA9>

Korosando, F., & Raji, M. N. (2023). Analisis Kesulitan Belajar Peserta Didik (Kesulitan Belajar Ditinjau dari Faktor Eksternal). *JIIP - Jurnal Ilmiah Ilmu Pendidikan*, 6(8), 5618–5623. <https://doi.org/10.54371/jiip.v6i8.1598>

Muderawan, I. W., Wiratma, I. G. L., & Nabila, M. Z. (2019). Analisis Faktor-Faktor Penyebab Kesulitan Belajar Siswa Pada Materi Kelarutan Dan Hasil Kali Kelarutan. *Jurnal Pendidikan Kimia Indonesia*, 3(1), 17. <https://doi.org/10.23887/jpk.v3i1.20944>

Muhammad Muttaqin. (2021). Konsep Kurikulum Pendidikan Islam. *TAUJIH: Jurnal. Islam*, 3(1), 1–16. <https://doi.org/10.53649/taujih.v3i1.88>

Nainggolan, S. D., Suriani, C., & Sianturi, E. (2018). Analisis Kemampuan Berpikir

- Kritis Siswa Pada Materi Pokok Sistem Pencernaan Manusia Di Kelas Xi Ipa Sma Swasta Yapim Biru-Biru. *Jurnal Pelita Pendidikan*, 6(3), 174–178. <https://doi.org/10.24114/jpp.v6i3.10790>
- Nani, N., & Hendriana, E. C. (2019). Analisis Kesulitan Belajar Siswa Pada Pembelajaran Bahasa Indonesia Di Kelas V SDN 12 Singkawang. *Journal of Educational Review and Research*, 2(1), 55. <https://doi.org/10.26737/jerr.v2i1.1853>
- Prawiyogi, A. G., Sadiyah, T. L., Purwanugraha, A., & Elisa, P. N. (2021). Penggunaan Media Big Book untuk Menumbuhkan Minat Membaca di Sekolah Dasar. *Jurnal Basicedu*, 5(1), 446–452. <https://doi.org/10.31004/basicedu.v5i1.787>
- Rahman, A., Munandar, S. A., Fitriani, A., Karlina, Y., & Yumriani. (2022). Pengertian Pendidikan, Ilmu Pendidikan dan Unsur-Unsur Pendidikan. *Al Urwatul Wutsqa: Kajian Pendidikan Islam*, 2(1), 1–8.
- Sugiri, W. A., & Priatmoko, S. (2020). Perspektif Asesmen Autentik Sebagai Alat Evaluasi Dalam Merdeka Belajar. *At-Thullab: Jurnal Pendidikan Guru Madrasah Ibtidaiyah*, 4(1), 53. <https://doi.org/10.30736/atl.v4i1.119>
- Suryaman, M. (2020). *Orientasi Pengembangan Kurikulum Merdeka Belajar*. 13–28.
- Trivaika, E., & Senubekti, M. A. (2022). Perancangan Aplikasi Pengelola Keuangan Pribadi Berbasis Android. *Nuansa Informatika*, 16(1), 33–40. <https://doi.org/10.25134/nuansa.v16i1.4670>
- Ulfa, N. A., Hidayatussakinah, H., & Prabawati, R. (2023). Analisis Kesulitan Belajar Siswa Pada Pembelajaran Biologi Di Sma Muhammadiyah Aimas Kabupaten Sorong. *Biolearning Journal*, 10(1), 36–40. <https://doi.org/10.36232/jurnalbiolearning.v10i1.3705>
- Vasmin, M. E., Syafriati, Y. M., Sada, M., & Nurfadilah, N. (2020). Analisis Faktor Kesulitan Peserta Didik Dalam Proses Pembelajaran Biologi Pada Implementasi Kurikulum 2013. *Jurnal Inovasi Pembelajaran Biologi*, 1(2), 14–23. <https://doi.org/10.26740/jipb.v1n2.p14-23>
- Wannesia, B., Rahmawati, F., Azzahroh, F., Ramadan, F. M., Agustin, M. E., Ekonomi, P., Keguruan, F., & Pendidikan, I. (2022). *Inovasi Pembelajaran Kurikulum Merdeka di Era Society 5.0*. 16(2), 232–234. <https://doi.org/10.26877/mpp.v16i2.13479>
- Yusra, Z., Zulkarnain, R., & Sofino, S. (2021). Pengelolaan Lkp Pada Masa Pandemi Covid-19. *Journal Of Lifelong Learning*, 4(1), 15–22. <https://doi.org/10.33369/joll.4.1.15-22>

How To Cite This Article, with *APA style* :

Siregar, N.J., & Rohani, R. (2024). Analysis of Learning Difficulties in Biology Material Through The Implementation of Merdeka Curriculum in First Grade (X Class) Senior High School Students of SMA Negeri 2 Percut Sei Tuan. *Jurnal Pembelajaran dan Biologi Nukleus*, 10(2), 622-631. <https://doi.org/10.36987/jpbn.v10i2.5847>

- Conflict of interest** : The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.
- Author contributions** : All authors contributed to the study's conception and design. Material preparation, data collection and analysis were performed by all authors. The first draft of the manuscript was submitted by [Nurul Jannah Siregar]. All authors contributed on previous version and revisions process of the manuscript. All authors read and approved the final manuscript.