

Analysis of obstacles to the biology learning process in SMAN 1 Rantau Utara, Labuhanbatu Regency

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Article Information	Abstract
<p>Keyword: Obstacles; Education; Learning process; Biology</p> <p>Kata Kunci: Hambatan; Pendidikan; Proses pembelajaran; Biology</p> <p>History: Received : 12/06/2022 Accepted : 14/06/2022</p>	<p>The obstacles in the biology learning process are curriculum implementation, syllabus development, competence, material mastery, learning methods, laboratories, learning media, teaching aids, learning evaluation, and learning motivation. This study aims to identify the obstacles faced by teachers in the biology learning process at SMAN 1 Rantau Utara, Labuhanbatu Regency using descriptive research with a qualitative approach. The research data were obtained by distributing questionnaires and interviews with statements about barriers in the study of biology. Data is processed in percentages. The diagram results show high walls from 78% of laboratories, 76% of the curriculum, 70% of methods, media, and evaluation, and 67% of teacher competence. Overall, the data collection results show that with high barriers, obstacles to implementing the biology learning process cover an average of 72%.</p> <p>Abstrak</p> <p>Hambatan dalam proses pembelajaran biologi berupa penerapan kurikulum, pengembangan silabus, kompetensi, penguasaan materi, metode pembelajaran, laboratorium, media pembelajaran, alat peraga, evaluasi pembelajaran, dan motivasi belajar. Penelitian ini bertujuan untuk mengidentifikasi hambatan yang dihadapi guru dalam proses pembelajaran biologi di SMAN 1 Rantau Utara, Kabupaten Labuhanbatu menggunakan penelitian deskriptif dengan pendekatan kualitatif. Hasil data diperoleh dengan menyebarkan kuesioner dan juga wawancara dengan pernyataan tentang hambatan dalam studi biologi. Data diproses dalam persentase. Hasil diagram menunjukkan hambatan tinggi dari 78% laboratorium, 76% kurikulum, 70% metode, media dan evaluasi, kompetensi guru 67%. Secara keseluruhan, hasil pendataan menunjukkan bahwa dengan hambatan tinggi, hambatan pelaksanaan proses pembelajaran biologi meliputi rata-rata 72%.</p>

A. Introduction

The world of education has a special purpose in realizing the learning process. Teachers are not only emphasized to master the material but also need to master skills. Students must be able to do something by asking questions about the scientific principles and processes (Masruri, 2020). Teachers can arrange to learn in writing before teaching in class (Nuzuar & Warsah, 2018).

In the implementation of biology learning, some teachers are the most important component to start learning, have the responsibility to see everything that students face, support the student development process, guide, encourage and facilitate student learning to achieve goals (Robikhah & Nurawati, 2021). Therefore, school leaders and educators are one of the main drivers that significantly impact the implementation of student learning in the school environment (Gaol & Siburian, 2018).

Teachers play an important role in making lesson plans and implementing the learning process. Teachers with good pedagogic competence will also provide a good learning process (Ita, 2021). However, teachers and students may encounter obstacles in the biology learning process. Barriers to the implementation of learning experienced by teachers and students are different. One of the factors is the lack of facilities and infrastructure to support learning. Teacher barriers can affect teacher performance in the learning process (Ayuningrum & Peniati, 2016).

Abdul Syukur (2014) defines that professional educators will always try to improve understanding and knowledge in the learning process to overcome the problems derived during the implementation of the tasks of the learning process. However, according to Novati, learning disabilities can also hinder the learning process so that the learning process does not go well (Novita, 2017).

According to teachers involved in the learning process that can improve learning abilities, evaluation, analysis, and improvement of learning styles are highly recommended to achieve learning objectives. Improvements in teaching styles are carried out depending on the challenges faced by the teacher. Realities that arise in practice often clash with problems related to learning in biology learning. Teachers need to remember and evaluate the learning difficulties they face to get the right answers quickly. Many parties desire that every student can find the best learning method according to their abilities (Rahmadani et al., 2017).

In the learning process, knowledge of different methods does not necessarily guarantee the success of teachers in designing a good teaching and learning process. One of the factors that can influence is the teacher himself. The following are the obstacles educators face; according to Widyasmoro & Alimah (2015), the results of their research show that teachers face obstacles in planning learning. Process and curriculum development as part of implementing the 2013 curriculum. Rahmadani et al. (2017) stated that classroom teachers were only trained for a few months to change learning according to the 2013 program; the program's success or failure depends on the teachers' creativity and activities in the development and implementation of the education program. Based on the results of research by Sisca et al. (2016), that shows the obstacles faced by biology teachers in public secondary schools in Jambi city were teachers who could not implement the 2013 curriculum, especially in biology subjects. Teaching and learning materials for teachers are still difficult to obtain. Monotonous learning materials depend on the availability or lack of concentration in each school, which is still limited by nature. Teachers also face difficulties in planning the implementation of learning according to the 2013 curriculum (Aeni et al., 2016).

Problems that schools may face include the lack of facilities and infrastructure to support internship activities, as well as other issues, namely the underutilization of laboratories in schools with adequate laboratory facilities. Educators with high ambitions will see some shortcomings in school as a challenge. So far, publications related to obstacles in learning biology in high school are still rare if we focus on the challenges experienced in the learning process, or specifically on the subject of biology. Several publications that focus more on other aspects, such as the analysis of the barriers to biology teachers in implementing the 2013 curriculum conducted by (Ayuningrum & Peniati, 2016), the difficulties of teachers in implementing the 2013 curriculum learning (Aeni et al., 2016), and obstacles in implementation 2013 curriculum standards and assessment process (Widyasmoro & Alimah, 2015). Thus, this research and publication become very important and relevant to do.

This study aims to analyze the barriers to contributing as an assessment and reference to positive results for improving learning in biology learning in the future. The results of this study can also be used as a reference example to analyze the obstacles educators face in studying biology.

B. Material and Method

This research is an illustration of teacher barriers in the biology learning process which did at SMA Negeri 1 Rantau Utara. Qualitative Descriptive (QD) was used in qualitative research for descriptive research. This study used qualitative methods to obtain detailed data that have real value. Data that appear to exist were not manipulative when research methods were used to study a natural object and as an important tool (Yuliani, 2020).

The subjects of this study were biology teachers at SMA Negeri 1 Rantau Utara with five people and students in grades X, XI, and XII with 78 respondents. The research method is purposive sampling. This type of survey research used questionnaires and interviews as research tools with a qualitative approach to show that did research in a planned manner to study natural objects as they are and in real conditions or processes.

Tabel 1 Criteria for the level of barriers to the biology learning process

Score Range	Interval	Criteria
48.76-60	100.00%	Very High
37.6-48.75	81.25%	Tall
26.26-37.5	62.50%	Currently
15-26.25	43.75%	Low

The percentage of curriculum results is 76%, competence is 67%, the method is 70%, the laboratory is 78%, and media and learning evaluation is 70%. Overall, the results of data collection show that the obstacles to the implementation of the biology learning process, with an average of 72%, are included in the high barrier criteria requirements.

C. Results and Discussion

The data analysis steps were carried out by calculating the score obtained as a percentage and then analyzing the research data using percentage analysis. Finally, the calculation results were entered as a percentage in the barrier level criteria table and then interpreted with qualitative expressions.

By examining the barriers to the teacher's biology learning process using observation, questionnaires, and interviews, several factors were found that became obstacles during biology learning at SMA Negeri 1 Rantau Utara, Labuhanbatu Regency. Various indicators of inhibition of the learning process include curriculum implementation, competency standards, methods, laboratories, media, and

evaluation of learning. Barriers to learning biology for educators are divided into six factors as follows.

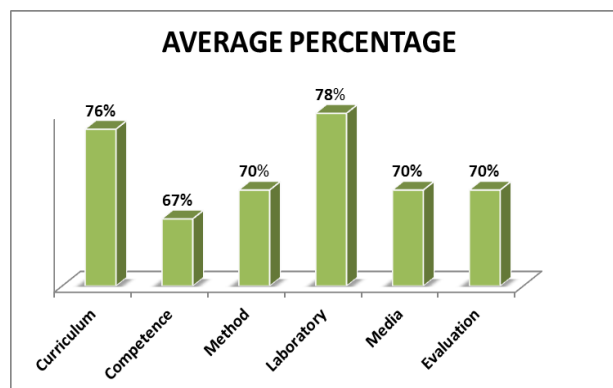


Figure 1
Barriers to the learning process of biology.

The percentage of curriculum results is 76%, competence is 67%, the method is 70%, the laboratory is 78%, and media and learning evaluation is 70%. Questionnaires were given to students in grades X, XI, and XII, with 78 people regularly interviewed for supporting data. The data obtained were then analyzed. Interviews were also conducted to enter data on the questionnaire. In interviews with all respondents of SMA Negeri 1 Rantau Utara consisting of 5 teachers, the researcher obtained the results of the discussions to answer the challenges faced by teachers.

Application of Curriculum

Obstacles in implementing the curriculum with a percentage of 76% in the high criteria occurred because curriculum changes were related to the willingness of teachers to implement the curriculum, including the use of learning strategies and methods. One of the problems that needed to be overcome was the delay in the 2013 curriculum books in the new school year (Kurniaman & Noviana, 2017).

A curriculum can be defined as the design and teaching tools developed by the government which play an important role in the education system with the aim of national education. Curriculum renewal must take place where there is no comprehensive curriculum. The curriculum must be able to adapt to the ever-changing times. There are still many teachers who have not been able to apply the latest curriculum in teaching, and the obstacles that arise will affect learning outcomes in the form of teaching materials used. Therefore, teachers must be active in planning fun learning.

Teachers need to prepare curriculum implementation with teachers who are ready to

teach, including preparing teaching plans, materials to be studied, teaching materials, and media. During the learning period, strategies and methods are used in learning.

The handling effort is in the form of teachers exploring various learning resources to serve as learning media. A good teacher must make a plan before carrying out learning in class. Preparations are made so that the learning process can run efficiently and effectively.

Competency

The results of the data prove that competency standards are an obstacle in the biology learning process. The percentage shows that 67% is included in the high category due to a lack of responsibility in applying the pedagogical foundation in the form of understanding the development of subjects, training design, use of pedagogical techniques, and maintaining high ethical standards. higher than the teaching profession (Junaid & Baharuddin, 2020)

Teachers feel that in the description of the most difficult subject matter, most teachers experience obstacles due to problems with facilities and infrastructure in schools which are still limited and affect the creativity of teachers to carry out learning. Teachers try to overcome these obstacles by developing a curriculum or syllabus, mastering the technique of preparing lesson plans, managing to learn, and describing material by connecting it to everyday life.

Teacher competence during the learning process is an important factor in determining the success of a lesson. Therefore, developing teacher skills to build positive attitudes is the main goal of improving the teaching profession and improving education quality (Widyastuti et al., 2017).

According to Damanik, teachers should have four competencies: pedagogic competence, professional competence, personality competence, and social competence (Damanik, 2019). Pedagogy is the art of teachers in teaching. The implementation of the learning process is seen from the aspect of pedagogic competence, namely the ability of teachers to manage to learn, assist and guide students. Personal competence is a teacher's attitude that can be a source of intensification as an example for students. Finally, professional competence can be derived from teachers' special skills and competencies, as well as social competence; namely, teachers can communicate with students and create a family atmosphere.

Teachers' efforts to manage the form of assignments in which teachers must be able to absorb the material, master effective teaching, and

develop training curricula, programs, and implementation plans must have special skills. Utilize teaching technology and create a family, free, and friendly learning environment.

Learning Method

Barriers to the use of learning methods are reinforced by the results of interviews, which state that most teachers choose the lecture and question and answer form, this is because it is easy to implement even though the facilities and infrastructure in schools are still lacking and make this method the most frequently used by teachers. It can be seen from the presentation of learning methods results by 70%, including the criteria for high barriers. Teachers prefer PowerPoint to display pictures, videos, and even sources from multiple links is the bottleneck. Teaching aids with LCD projectors make it easier for teachers to communicate the material they want to teach (Hayati & Harianto, 2017).

Barriers to the use of learning methods were further strengthened by the interviews, where most of the teachers chose the lecture and question and answer teaching method because it was easy to implement. Although the school structure and infrastructure are still lacking, enabling teachers to use this method better, this can be seen from the presentation of 70% of learning methods, including high threshold criteria. Researchers can achieve learning methods through the involvement of students, objectives, materials, facilitators, and tools or the media used. Learning methods that have achieved educational goals are modern and conventional learning, with Indonesia using collaborative, individual, induction, inquiry, instrumental, and game modes. This method is an operational step of learning strategies through achieving effective goals (Dewi, 2018).

The effort of this factor is to provide various teaching methods, make the best use of facilities and infrastructure, and try to overcome this problem by optimizing existing facilities, changing the school environment into a learning environment, instructing students to make media in the form of pictures or materials, and being aware of the kinship with students.

Laboratory

The availability of laboratory tools and materials that ignore obsolete materials can hinder the biology learning process. Furthermore, as shown by the results of 78%, including the high threshold criteria, education is not achieved with the desired goals, so the structure and

infrastructure in schools greatly affect the success of the learning process (Novita, 2017).

To overcome this problem, involve students in preparing tools and materials for the beginning of the training, utilizing the school environment as a natural laboratory, choosing materials that can make in the laboratory thanks to the availability of tools and materials to be compiled, noting damaged and outdated practice tools and materials, and the task of students to bring practice materials.

The need for tools and materials is still an obstacle for teachers because the lack of tools and materials in schools means that not all materials that need to be implemented can be implemented. The teacher selects teaching materials by examining tools and materials in the laboratory and replacing untrained materials with presentations. The result of the interview with the teacher is the main factor that hinders the transfer of skills because the teacher wants to develop the curriculum, and the necessary structures, such as the integrity of the LCD projector but are not available. In addition, most students want to learn directly through frequent exercises so that the learning process does not become boring.

Learning Media

Learning media is an inhibiting factor in the biology learning process. However, as evidenced by the results of 70% including the criteria for high barriers to overcome this, schools have tried to complement the books in the library by asking for help from the government and teachers who try to solve this problem by making students study at home extensively in addition to those obtained from school (Puspitasari, 2016).

Learning media is a resource that can use to facilitate one's learning. Educational resources can be in the form of media, newspapers, textbooks, study aids, magazines, television, and even the internet. Unfortunately, the lack of books available in school libraries and internet networks can hinder learning.

Barriers to learning resources cannot be separated from the lack of school facilities and infrastructure, so learning resources are limited to students. For example, the teacher complained about the guidebooks used by students because there were still many students who did not have biology textbooks due to the lack of guidebooks in the library.

Teachers can often try to give assignments as exercises so that students don't focus on expecting the material they will receive from the teacher. They can then provide assignments by looking for materials online to overview the project. Finally,

students describe their achievements from the internet by explaining them in class during learning.

Learning Evaluation

The factors related to the barriers to learning biology about the assessment can be seen at 70%, including the criteria for high obstacles. The interviews showed that SMA N 1 Rantau Utara students still had biology scores below the KKM because teachers did not take care of students. Teachers can try to evaluate learning, such as giving homework, analyzing student assessment results to see students' abilities, often giving pre and post-exams, making improvement enrichment plans, and rewarding students for continuing their studies, assessors to measure academic achievement. Evaluation occurs in 3 stages: measuring, assessing, and conducting evaluations. Assessment of student academic achievement according to the 2013 curriculum is required in 3 areas: attitudes, knowledge, and skills (Hasanah et al., 2015).

Obstacles in the assessment of learning teachers are still trying to make a process assessment tool and difficulties in developing exam questions. According to Riadi, the evaluation is designed to determine the increase in student learning abilities, and then the results are used to improve student learning methods (Riadi, 2017).

Researchers can process learning assessments such as giving homework, analyzing student scores to see students' abilities, conducting pre and post-tests regularly, and running enrichment and reward programs. Hence, students remain motivated to continue learning.

D. Conclusion

Obstacles in the learning process of teacher competence biology, school facilities and infrastructure, learning resources, learning methods, and also learning evaluation. Barriers to the biology learning process at SMA N 1 Rantau Utara, Labuhanbatu Regency, showed a curriculum percentage of 76%, competence of 67%, methods 70%, laboratories 78%, and media and learning evaluation of 70%. Overall, the data collection results show that the obstacles to implementing the biology learning process, with an average of 72%, are included in the high barrier criteria requirements. Efforts in handling this in the form of teachers must have special competencies, can develop curriculum, syllabus, and learning implementation plans, take advantage of learning technology and create a family-friendly learning atmosphere, and choose materials that teachers

can implement in the laboratory by looking at the availability of tools and materials, often give assignments as exercises. So that students are not focused on expecting the material, they get from the teacher, providing varied learning methods, optimally utilizing the facilities and infrastructure that have been provided, making the school environment a learning medium, assigning students to make media in the form of pictures or materials, and giving a sense of kinship to students. Students often give pre and post-test, conduct remedial programs for enrichment, and provide rewards to motivate students to continue learning. The results of this study can be used as a reference for teachers in schools, especially Biology subject teachers, to support student learning activities to stimulate the creative process. In addition, it is also hoped that the results of this study can provide information to external stakeholders of education in Indonesia so that they are increasingly focused on implementing better policies.

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