Available online at: https://journal.ikippgriptk.ac.id/index.php/saintek
Jurnal Pendidikan Informatika dan Sains
13(1), 2024, 56-64
E-ISSN: 2407-1536
P-ISSN: 2089-2802

ENHANCING STUDENT ENGAGEMENT THROUGH ROLE-PLAYING: A STUDY ON REPRODUCTIVE SYSTEM EDUCATION IN CLASS IX E AT SMP NEGERI 5 PONTIANAK

Euis Kartikasari
SMP Negeri 5 Pontianak, Jalan Hasanuddin no.14 Pontianak Barat, Kota Pontianak, Kalimantan Barat, Indonesia
*email: euiskartikasari795@gmail.com

Received: April 31, 2024 Accepted: June 25, 2024 Published: June 30, 2024

Abstrak

Penelitian ini dilakukan untuk mengetahui peningkatan aktivitas siswa dan hasil belajar siswa pada materi sistem reproduksi di kelas IX E SMP Negeri 5 Pontianak. Penelitian ini bertujuan untuk mengetahui peningkatan aktivitas dan hasil belajar siswa pada materi sistem reproduksi di kelas IX E SMP Negeri 5 Pontianak dengan metode role-playing. Penelitian tindakan kelas dilakukan dalam dua siklus. Data dikumpulkan melalui observasi dan tes. Hasil menunjukkan peningkatan aktivitas belajar siswa dari 67,95% pada siklus I menjadi 88,82% pada siklus II, serta peningkatan ketuntasan hasil belajar dari 45,94% menjadi 78,37%. Dengan demikian, metode role-playing terbukti efektif dalam meningkatkan aktivitas dan hasil belajar siswa.
Kata kunci: aktivitas belajar, role playing, sistem reproduksi

Abstract

This study was conducted to determine the improvement in student activity and learning outcomes on the topic of the reproductive system in Class IX E at SMP Negeri 5 Pontianak. The objective of this research is to investigate the enhancement of student engagement and learning outcomes using the role-playing method. This classroom action research was carried out in two cycles. Data were collected through observation and tests. The results indicated an increase in student learning activities from 67.95% in the first cycle to 88.82% in the second cycle, as well as an improvement in learning mastery from 45.94% to 78.37%. Therefore, the role-playing method has proven to be effective in enhancing student activity and learning outcomes.
Keywords: *learning activities, role-playing, reproductive system*

How to cite (in APA style): Kartikasari, E. Enhancing student engagement through role-playing: A study on reproductive system education in class IX E at SMP Negeri 5 Pontianak. *Jurnal Pendidikan Informatika Dan Sains*, *13*(1). https://doi.org/10.31571/saintek.v13i1.4299

DOI: 10.31571/saintek.v13i1.4299

INTRODUCTION

Education is defined as a process of assistance provided by learning resources to learners to acquire knowledge and skills, enabling them to experience changes within themselves. Learning is a form of growth or change in an individual, expressed through new behaviors resulting from experiences and practice (Hamalik, 2001). According to Hamdani (2011), learning involves a change in behavior or performance, accompanied by a series of activities such as reading, observing,

listening, imitating, and so on. Learning helps individuals gain experiences as a foundation for living and establishing themselves in society.

The learning outcomes achieved by students are closely related to the teaching process conducted by teachers in the classroom and the facilities and infrastructure available at the school. In schools, teachers play a crucial role in enhancing student learning activities to achieve the desired goals. Teachers are the key to making the learning process engaging and effective. Therefore, a teacher is not only required to enliven the classroom atmosphere but also to transform learning into a process of personal development for the students (Fitria and Rahmat, 2019).

Based on discussions with fellow biology teachers at SMPN 5 Pontianak for the academic year 2018/2019, it was identified that one of the difficult topics for students is the reproductive system. For students, the human reproductive system is an abstract and difficult-to-imagine topic. One of the challenges is that students are not ready to learn because the reproductive system is taught at the beginning of the odd semester, and the teacher uses the lecture method, making it difficult for students to remember and understand the material. The average daily test score for Class IX E on the human reproductive system topic for the academic year 2018/2019 was 43.50, while the Minimum Completeness Criteria (KKM) set by the school is 75.

To address this, steps need to be taken by both students and teachers. When teachers dominate the learning process, it can cause students to become passive and wait for the teacher's presentation rather than actively discovering knowledge, attitudes, and skills on their own (Ahmad and Handayanto, 2017). If this condition is left unchecked, it can result in the learning objectives not being achieved effectively. Therefore, steps must be taken by both students and teachers. Teachers should design the teaching and learning process with appropriate and engaging methods (Salawati, 2021). Besides the presence of a curriculum and the quality of teachers, students must have high motivation to continuously seek and discover new learning experiences to grow into lifelong learners (Grardus, 2020). One teaching method considered suitable for enhancing activity and improving learning outcomes on the human reproductive system topic is the role-playing method.

The role-playing model is a series of activities that emphasize cooperation, communication, and the interpretation of events (Sutikno, 2014). According to Prasetyo (2001), role-playing is a method of mastering lessons by involving students in playing roles as living characters or inanimate objects. The use of the role-playing method in schools fosters imaginative individuals who have broad interests, independent thinking, curiosity, energy, and self-confidence, while also enhancing their cooperation skills. Additionally, students can practice, understand, and remember the material to be presented or dramatized according to their language style and learning preferences (Nurhasanah, Sujana, and Sudin, 2016). Thus, role-playing is a method of mastering lesson content through the development of students' imagination and comprehension. This development occurs as students take on roles of living characters or inanimate objects, projected through human conflict stories in the form of dialogues on stage, using conversations or activities to arrange words in front of an audience.

Using the role-playing method is expected to involve students extensively and make learning enjoyable for them. As stated by Prasetyo (2001), this role-playing method has additional benefits, namely: (1) it ensures that all students can participate and have the opportunity to demonstrate their ability to work together successfully, and (2) the game provides a pleasant learning experience for students. The latter point forms the basis of role-playing, asserting that students learn best when the lesson is enjoyable. Role-playing instruction involves several steps as outlined by Subagio (2013), which include: (1) identifying the problem to be played out, (2) selecting the actors (role holders/actors), (3) preparing the role-play stages, (4) preparing observers, (5) role-playing, (6) discussion and evaluation, and (7) sharing experiences and drawing conclusions.

Based on the research conducted by Pusari (2007), it was found that learning with the speculation-based role-playing method on the subtopic of moss in science (biology) subjects can improve student learning outcomes, with an increase of 7.50 points. The average pre-test score was

5.55, and the average post-test score was 13.05. This finding is supported by Herwati's (2010) research, which showed that the role-playing method on the human excretory system material can enhance student activity and learning outcomes. The results indicated that in the first cycle, the percentage of student activity reached 85.94%, the average learning outcome was 85.87, and the percentage of learning completeness was 82.50%. In the second cycle, the percentage of student activity reached 88.32%, the average learning outcome was 82.50, and the percentage of completeness was 87.50%. There was an increase in activity by 2.38% and in completeness by 5% compared to the first cycle.

Furthermore, research conducted by Army, Enawaty, and Sartika (2016) using the role-playing model showed an increase in student activity from 44.93% in the first cycle to 55.13% in the second cycle, and an improvement in student learning outcomes from 47.82% in the first cycle to 88.46% in the second cycle. Another study by Sari and Manurung (2017) showed an increase in the completeness of student learning outcomes from 24 students (61.54%) in the first cycle to 35 students (89.74%) in the second cycle. Observation sheets indicated an increase in student learning activity from 65% to 78%. Direct observations of student activities also showed improvements in aspects such as active participation in discussions, active questioning and answering, and actively providing conclusions. Therefore, it can be concluded that the application of the role-playing learning model in classroom teaching has an effective impact on improving student learning outcomes. Thus, it can be concluded that the role-playing method can enhance activity, learning outcomes, and completeness.

Classroom action research aims to develop the most efficient and effective learning strategies in natural situations. It seeks to solve real problems occurring in the classroom. More specifically, action research aims to: (1) improve the quality of content, processes, and learning outcomes in the classroom/school management; (2) enhance teachers' professional skills and attitudes; (3) foster an academic culture that creates a proactive attitude towards improving the quality of learning/school (Mulyatiningsih, 2019). In this classroom action research, the focus is on the active involvement of students in the learning process, such as actively participating in classroom activities, listening to and paying attention to the teacher's and role group's explanations, reading and completing worksheets and post-tests, discussing with group members, and submitting assignments on time. Based on the above background, the purpose of this study is to determine the improvement in student learning activities in Class IX E at SMP Negeri 5 Pontianak through the role-playing method on the reproductive system material.

METHOD

This study is a classroom action research conducted at SMP Negeri 5 Pontianak. The subjects of this research were the students of Class IX E, consisting of 37 students, including 16 male and 21 female students. The study was carried out in two cycles, with each cycle consisting of two sessions: one for delivering the material and one for evaluation testing (Figure 1).

Data collection techniques in this study involved observing student activities and administering learning outcome tests. Observations were conducted using observation sheets that recorded the frequency of student activities across various behavioral categories. Learning outcome tests were administered with questions relevant to the taught material. Data were analyzed descriptively and qualitatively based on observation and reflection results. The validity of the instruments was tested through expert judgment to ensure they measured what they were intended to measure. Reliability was tested using the inter-rater reliability technique to ensure consistency in assessments among observers.

The research procedure included: (1) action planning, (2) action implementation, (3) observation, and (4) reflection. During the planning stage, a learning plan using the role-playing method was developed. Action implementation was carried out according to the prepared plan. Observations were conducted during the action implementation to collect data on student activities

and learning outcomes. Reflection was conducted to analyze the collected data and plan subsequent actions.

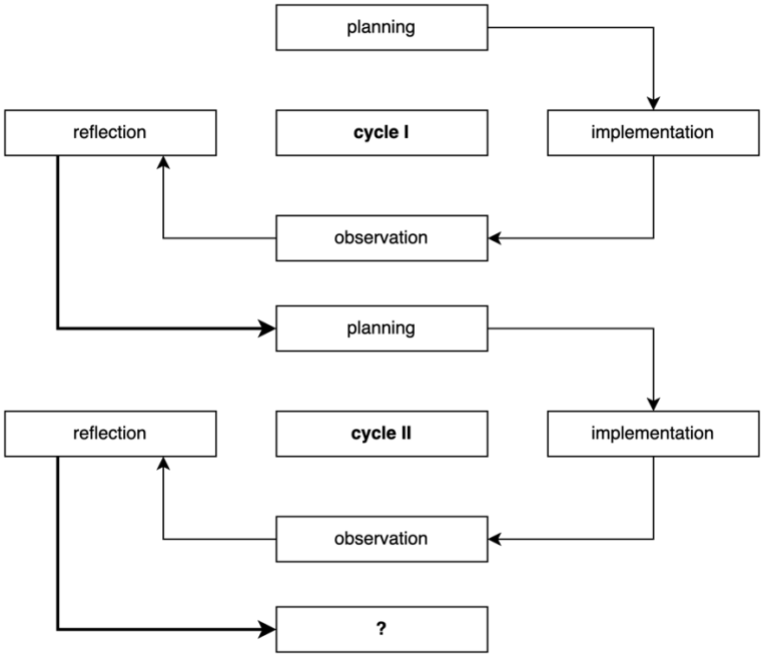

Figure 1. Classroom Action Research Activity Cycle

The data collection techniques in this research involved observing student activities and testing learning outcomes. Data analysis was conducted descriptively and qualitatively based on observation and reflection results. The steps for calculating student activity observations included calculating the percentage frequency of student activity for each behavior category on the observation sheet using a specific equation. The assessment criteria for this equation are as follows: a value of 20% or less indicates inactivity; 20%-40% indicates low activity; 40%-60% indicates moderate activity; 60%-80% indicates high activity; and 80%-100% indicates very high activity. Teacher activities were also observed, focusing on the implementation of science lessons using the role-playing method. Observers used a predefined guide to monitor the teacher's actions. Teacher activity was assessed using another specific equation, with assessment criteria detailed in Table 1.

Table 1. Criteria for Assessing Teacher Activity

Percentage	Value	Criteria
86 – 100 %	4	Very good
76 – 85 %	3	Good
60 – 75 %	2	Fairly good
55 – 59 %	1	Less good
≤ 54 %	0	Not good

The learning outcome test aligns with the objective of this research, which is to determine the improvement in student learning outcomes taught using the role-playing method. The data obtained from the learning outcome test are analyzed by calculating the score for each post-test answer and then converting the score into a grade using a specific equation. In this equation, N represents the student's grade, SP is the score obtained, and S. maks is the maximum score. Next, the percentage of student mastery is calculated with a mastery standard of 75. To calculate the percentage of mastery, another equation is used. In this equation, the percentage of mastery is determined by dividing the

number of students meeting the mastery criteria by the total number of students and then multiplying by 100%. Student learning outcomes are classified with the following criteria: 85%-100% (Very Good); 70%-84% (Good); 50%-65% (Fair); 0%-49% (Poor).

RESULT AND DISCUSSION

The implementation of actions in Cycle I and Cycle II each took place over two meetings. Each learning session lasted for 3x40 minutes. Cycle I covered the topic of human reproductive organs. The second meeting of Cycle I was used for the end-of-cycle I test. Cycle II covered the topic of diseases in the human reproductive system. The second meeting of Cycle II was used for the end-of-cycle II test. The learning implementation in both Cycle I and Cycle II consisted of initial activities, core activities, and concluding activities. From the implementation of Cycles I and II, various data were obtained, including student learning outcomes, teacher performance observation results, student performance data, and group discussion activity data.

Student Learning Activities

The observation of student learning activities was conducted by the observer with 37 student subjects in both Cycle I and Cycle II. Seven aspects of student activity were observed, as detailed in Table 2. The data on student activity observations in science learning through the role-playing method in Cycle I and Cycle II are presented in Table 2.

Table 2. Observation Results of Student Activities Based on Observed Aspects in Cycle I and Cycle II

No	Aspects Observed	cycle I		cycle II	
		∑ student	percentage (%)	∑ student	percentage (%)
1	Students pay attention to the teacher's explanation	23	62,16	37	100
2	Students role-play in front of the class	37	100	37	100
3	Students complete worksheets (LKS)	19	51,35	37	100
4	Students ask questions	4	10,81	7	18,92
5	Students engage in discussions	24	64,86	37	100
6	Students confidently perform during role-playing	37	100	37	100
7	Students seriously perform during role-playing	32	86,49	37	100
	average	25	67,95	32	88,82

From Table 2, it can be seen that there was an increase in student learning activities after the implementation of Cycle II and its comparison with the previous cycle. If the average percentage of student learning activities in Cycle I was 67.95%, it increased to 88.82% in Cycle II. Therefore, it can be said that student learning activities using the role-playing learning method increased by 20.87%.

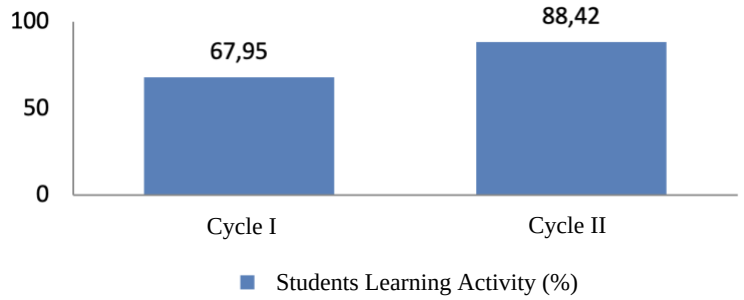

Figure 2. Graph of the Increase in Student Learning Activities

In Figure 2, the increase in student learning activities during the individual learning process is shown, indicating the average percentage of student learning activities in Cycles I and II. This increase in percentage demonstrates that the role-playing learning method successfully enhances student learning activities. The rise in percentage from Cycle I to Cycle II is also attributed to student involvement in the teaching and learning activities. The role-playing method extensively involves students and makes learning enjoyable for them, as stated by Prasetyo (2001). According to Nurhasanah, Sujana, and Sudin (2016), the use of the role-playing method in schools fosters imaginative individuals with broad interests, independent thinking, curiosity, energy, and self-confidence, and enhances their cooperation skills. These results align with Karim's (2022) research, which found that the role-playing learning model effectively impacts students in the classroom learning process by making them more actively responsible for their respective roles. This also concurs with Syaiful's (2013) assertion that the use of the role-playing method can stimulate the class to think and solve problems.

Teacher Activities

The comparison of teacher activity observations in science learning through the role-playing method in Cycles I and II can be seen in Table 3.

Table 3. Percentage of Teacher Activity per Cycle

	Cycle I	Cycle II
Activities (%)	87,5	92,5

Based on Table 3, there was an increase in teacher activity from Cycle I to Cycle II. Thus, it can be said that teacher activity, when applying the role-playing learning method, increased by 5%. The graph of the increase in teacher activity can be seen in Figure 3.

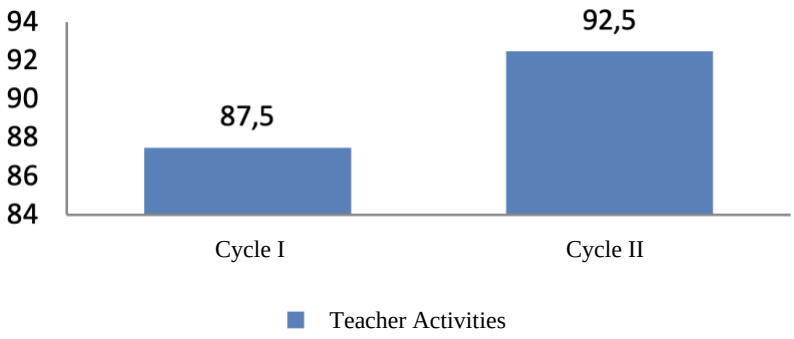

Figure 3. Graph of the Increase in Teacher Activity

Figure 3 shows that the role-playing learning method can enhance teacher activity in conducting lessons. An increase in teacher activity is evident in both Cycle I and Cycle II. One of the teacher's

roles related to teaching competency is providing verbal or written information in simple and easily understood language for students (Rusman, 2014). Teachers should design the teaching and learning process with appropriate and engaging methods (Salawati, 2021). According to Fitria and Rahmat (2019), teachers are key to making the learning process engaging and effective. Therefore, a teacher is not only required to enliven the classroom atmosphere but also to transform learning into a process that enhances students' personalities.

Student Learning Outcomes

Learning outcomes are the skills that students acquire after receiving their learning experiences. Students' mastery of concepts is measured through tests, including written tests such as objective (multiple-choice) questions and essay questions. At the end of each Cycle I and II, students were given an end-of-cycle test. Table 4 presents a comparison of the end-of-cycle test scores from Cycle I and Cycle II.

Table 4. Data on Learning Outcome Achievements in Cycle I and Cycle II

No	Test Results	Achievement	
		Cycle I	Cycle II
1	Highest score	80	95
2	Lowest score	30	60
3	Average score	61,76	75,81
4	Number of Students Who Passed Total Number of Students in Class IX E	17	29
5		37	37
6	Classical Mastery Percentage	45,94%	78,37%

Based on Table 4, the average student learning outcome score was 61.67 in Cycle I and 75.81 in Cycle II, representing an increase of 14.14 points. The student learning mastery at the end of Cycle I was 45.94%, which increased to 78.37% at the end of Cycle II, indicating a 32.43% improvement in learning mastery. The learning mastery achieved in Cycle II was 78.37%, which meets the criteria for classical mastery, defined as more than 75%. Figure 4 shows that the role-playing learning method successfully increased the average student learning outcomes.

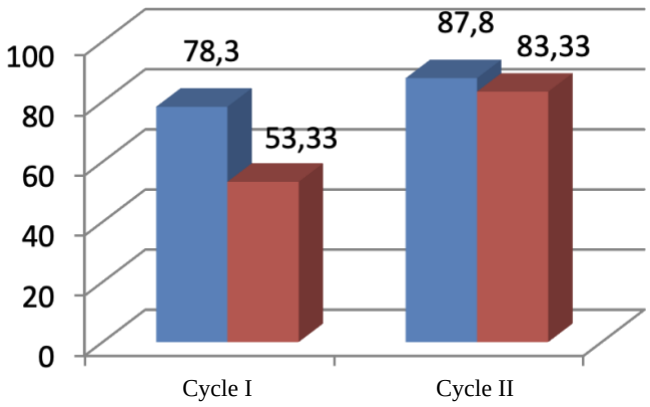

Figure 4. Graph of the Increase in Student Learning Outcomes

In the research conducted during Cycles I and II, there was an observed increase in the average scores and the percentage of learning outcome mastery. This indicates that students better understood the material when using the role-playing learning method. Role-playing creates a new atmosphere and provides a different learning experience, encouraging students to think more creatively and

actively (Hamalik, 2001). These results indicate successful learning, as more than 75% of the students met the Minimum Competency Criteria (KKM). These findings are consistent with the studies by Herwati (2010), Sari and Manurung (2017), and Karim (2022), which showed that the role-playing method could enhance student activity, learning outcomes, and mastery. According to Ambe, Warouw, and Adil (2021), role-playing helps students remember the material more easily and reduces forgetfulness, thereby improving learning outcomes. This is also in line with Miftahul's (2013) view that implementing the role-playing model leaves a strong impression on the learning process, creating memorable learning experiences. It makes the classroom more dynamic and enthusiastic, boosts students' passion and spirit, fosters a sense of togetherness, and allows students to engage directly in the roles discussed during the teaching and learning process.

CONCLUSSION

Based on the research results, it can be concluded that the role-playing method actively involves students in learning, rather than being dominated by the teacher, which enhances both student activity and learning outcomes. In Cycle I, the average percentage of student learning activity was 67.95%, which increased to 88.82% in Cycle II. Therefore, it can be said that student learning activity increased by 20.87% with the implementation of the role-playing learning method. The increase in student activity also led to improved learning outcomes. The average student learning outcome score was 61.67 in Cycle I and 75.81 in Cycle II, representing an increase of 14.14 points. Student learning mastery at the end of Cycle I was 45.94%, which increased to 78.37% at the end of Cycle II, indicating a 32.43% improvement in learning mastery. Based on the research results, it can be concluded that the role-playing method actively involves students in learning, rather than being dominated by the teacher, which enhances both student activity and learning outcomes. In Cycle I, the average percentage of student learning activity was 67.95%, which increased to 88.82% in Cycle II. Therefore, it can be said that student learning activity increased by 20.87% with the implementation of the role-playing learning method. The increase in student activity also led to improved learning outcomes. The average student learning outcome score was 61.67 in Cycle I and 75.81 in Cycle II, representing an increase of 14.14 points. Student learning mastery at the end of Cycle I was 45.94%, which increased to 78.37% at the end of Cycle II, indicating a 32.43% improvement in learning mastery. It is recommended that educational institutions adopt the role-playing method more widely across various subjects to further enhance student engagement and learning outcomes.

REFERENCES

Ahmad, F. & Handayanto, S. K. (2017). Peningkatan kualitas proses dan hasil belajar IPA pada rangkaian listrik dengan menggunakan model *role playing*-diskusi. *Jurnal Riset Pendidikan Fisika, 2(1), 23-29.*

Ambe, D. N. S., Warouw, Z. W., & Adil, E. H. (2021). Penerapan bahan ajar media komik ilmiah dengan model *role playing* untuk meningkatkan hasil belajar peserta didik di SMA negeri 2 Langowan. *Jurnal Sains Pendidikan Biologi Bioedusains, 2(1), 80-90.*

Army, M., Enawaty E., & Sartika, R. P. (2016). Upaya meningkatkan aktivitas dan hasil belajar siswa kelas XI IPA SMA negeri 1 Kendawangan menggunakan model *role playing* pada materi koloid. *Artikel Penelitian*. https://jurnal.untan.ac.id/index.php/jpdpb/article/download/16823/14445

Fitria, H., Kristiawan, M., & Rahmat, N. (2019). Upaya meningkatkan kompetensi guru melalui pelatihan penelitian tindakan kelas. *Abdimas Unwahas*, 4(1). http://dx.doi.org/10.31942/abd.v4i1.2690

Grardus, D. (2020). Penerapan pembelajaran tipe STAD untuk meningkatkan hasil belajar materi kesetimbangan kimia kelas XI MIPA SMAN 2 Pontianak. *Jurnal Pendidikan Informatika dan Sains, 9(1), 28-36.*

Hamalik, O. (2001). *Proses belajar mengajar*. Jakarta : Bumi Aksara.

Hamdani (2011). *Strategi belajar mengajar*. Bandung: Pustaka Setia.

Karim, S. (2022). Efektivitas penggunaan model pembelajaran *role playing* terhadap peningkatan hasil belajar siswa kelas VIII di SMP YP PGRI 4 Makassar. *EDUCATOR*: *Jurnal Inovasi Tenaga Pendidik dan Kependidikan, 2(2), 168-174.*

Miftahul, H. (2013). *Model-model pengajaran dan pembelajaran*. Yogyakarta: Pustaka Pelajar.

Mulyatiningsih, E. (2019). Metode penelitian tindakan kelas. *Jurnal Ilmu Keolahragaan Nasional*, 8. http://staff.uny.ac.id/sites/default/files/pengabdian/dra-endang-mulyatiningsih-mpd/8cmetode-penelitian-tindakan-kelas.pdf.

Nurhasanah, I. A., Sujana, A., & Sudin, A. (2016). Penerapan metode *role playing* untuk meningkatkan hasil belajar siswa pada materi hubungan mahluk hidup dengan lingkungannya. *Jurnal Pena Ilmiah, 1(1), 611-620.*

Prasetyo, A. (2001). Metode *role playing* untuk meningkatkan hasil belajar biologi siswa kelas II SLTP Negeri 1 Driyorejo Gresik. *Buletin Pelangi Pendidikan. 4(2).*

Pusari, T. (2007). Efektivitas metode pembelajaran *role playing* berbasis spekulasi pada submateri lumut (*Bryophyta*) di kelas X SMA Negeri 9 Pontianak. *Skripsi*. Pontianak : FKIP Untan.

Rusman. (2014). *Model-model pembelajaran*. Jakarta: Raja Grafindo Persada.

Salawati, S. (2021). Meningkatkan motivasi belajar siswa kelas IV dengan menggunakan metode demonstrasi pada mata pelajaran matematika di SDN 14 Senapit. *Jurnal Pendidikan Informatika dan Sains, 10(2), 144-151*.

Sari, A. W. & Manurung, T. (2017). Efektivitas pembelajaran dengan metode bermain peran (*role playing*) pada materi sistem ekskresi di kelas XI IPA SMA negeri 4 Kisaran T.P. 2012/2013. *In: Prosiding Seminar Nasional III Biologi dan Pembelajarannya*, 8 September 2017. Medan: Universitas Negeri Medan.
http://digilib.unimed.ac.id/28369/2/AW%20Sari%2C%20T%20Manurung.pdf

Subagio, H. (2013). *Role play: Modul untuk SMK kelas X semester 2*. Jakarta: Kementrian Pendidikan dan Kebudayaan.

Sutikno, S. (2014). *Metode & model-model pembelajaran*. Lombok: Holistica.

Syaiful, B. (2013*). Strategi belajar mengajar*. Jakarta: Rineka Cipta.