



Edmodo as a solution to enhance student learning interest in high school biodiversity during the COVID-19 pandemic

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ABSTRACT

This study aims to improve the quality of learning by applying Edmodo's application at biodiversity class material of class 10 students in increasing student learning interest during Covid-19 period. Based on observations at SHS 3 Kerinci regency in Jambi province, Indonesia it was known that students' interest in learning biology was still low. This was due to the lack of availability of existing facilities and the learning process that is still through lectures and questions and answers. Students were less involved in exploring information about biological concepts causing low student interest in learning. The method used was Classroom Action Research. The research procedure was in the form of a cycle to know the improvement of student interest. Each cycle consists of four stages, including Planning, Acting, Observation, and Reflection. Data Collection Techniques was conducted through Questionnaire, Observation, and Documentation. This data collection used an instrument in the form of an Online Learning Interest Questionnaire and Observation Sheet conducted online. This study showed that the results of observations of student interest in online learning obtained in cycle II received criteria of very high at 96%. While the results of student interest in online learning questionnaire obtained with high criteria that was 76.74%. Based on the research done, it can be concluded that the application of Edmodo media in online learning increases student interest in biodiversity material in science class X-2 SHS 3 Kerinci regency in Jambi, Indonesia.

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INTRODUCTION

The Covid-19 pandemic has wreaked havoc throughout the world. The world is facing a severe and acute public health emergency due to the ongoing global pandemic. Coronavirus outbreak (Covid-19) spread very quickly to all regions globally, causing anxiety to all people in various parts of the world (Niranjan, 2020).

The rapid spread of this virus impacts all aspects of human activity globally, ranging from education, research, sports, entertainment, transportation, worship, economic, business, and public meetings or social interactions as a result of the Lockdown and Social Distancing policies implemented by the Government. The reality of such a situation is difficult to bear, and the education sector remains one of the hardest hit by the Covid-19 outbreak (Onyema, 2020).

As a result of applying Lockdown and Social Distancing policies, Indonesia's learning system has changed dramatically from face-to-face learning to online learning at home. Since the emergence of positive cases of Covid-19 patients in Indonesia, through the Ministry of Education and Culture and the Ministry of Religion of the Republic of Indonesia, the Government has implemented a learning policy and working from home since mid-March 2020. In line with developments in information and communication technology (ICT), Covid-19 has forced schools and campuses to innovate and transform into learning by using distance learning (Nadeak, 2020).

However, in reality, the competencies, systems, and technicalities of the school or campus are inadequate completely for distance learning. Distance education participants will quickly drop out if the learning materials presented are not attractive, difficult to digest, and the content is not relevant to their needs. Learning materials must be guaranteed to reach the target learners before the time is used. The success of distance learning is measured by how well the teaching materials and learning system are planned (Warsita, 2007). Indonesia was once advised to improve the skills of workers with digital technology. The said "*labor words*" meant included workers in the field of education, one of whom was a teacher or lecturer. Therefore, it is necessary to have teachers' ability to understand the technology and plan effective learning activities to increase student interest in learning (Parrray, 2017).

Based on observations we have made at SHS 3 Kerinci regency in Jambi province, it is known that students' interest in learning biology is still low; the problem of low student interest cannot be separated from how teachers teach. This is due to a lack of available facilities. Although the teacher has taught according to the material and used various learning methods, the learning process transfers more facts, concepts, and biological principles through lectures, questions, and answers. So the way of student learning is only directed to memorize concepts without searching and building concepts from teacher to student. Students are less involved in exploring information about biological concepts, so many students assume that biological material is difficult to understand and easy to forget about the material after finishing biology lesson.

In addition to the availability of inadequate facilities. Low interest in learning is also caused by many subjects that must be taught while the time available is limited. Hence, teachers tend to give only material without trying to arouse student learning interest. The low interest in learning is also caused by the large number of subjects that must be taught while the time available is limited so that many learning materials are not fully conveyed. The subject of biodiversity has many topics, including the concept of diversity of genes, species, ecosystems; Indonesian biodiversity (genes, species, ecosystem) flora, fauna, microorganisms; Wallace's Line and Weber's Line; The uniqueness of Indonesia's tropical rainforests (Septian, 2018).

As a result, based on the students' test, the students' average score was 65, while the standard value of biology subject was 75. From these data, it can be seen that students' biological value has not yet reached the mastery standard. No more than 50% of students show a high interest in learning. Low student learning interest impacts student learning outcomes,

which are only 37% complete, so 63% of students have not yet completed their learning. The majority of teachers think that learning should be done directly. Many teachers believe that they are a major factor in teaching and learning activities.

What's more, in controlling the motivation to learn, educators have an important role. As much as 28% of students' learning motivation is influenced by teachers' presence (Wicaksana & Atmadja, 2018). The data above indicates that many other factors affect students' interest in learning by using learning media or ICT. One study also found that 87% of students were highly motivated and motivated in learning activities with learning management system facilities when the pandemic corona took place. The learning management system's role is needed as a learning medium (Wicaksana, 2020).

One factor that can influence the success of the learning process is student interest in learning. Interest as a psychic statement shows the concentration of attention on a subject matter because it is attractive to students. Interest in learning is the tendency of a high heart towards a passionate desire for a change in someone carrying out activities (learning) very dependent on the capacity possessed (Budiningsih, 2012). Concentration in the learning process is essential because interest in learning in one's person will stimulate a desire for greater learning. Interest is a sense of preference and attachment to a thing or activity without anyone asking. Interest is the acceptance of a relationship between oneself and something outside of oneself—the stronger or closer the relationship, the greater the interest (Slameto, 2010). Interest is a motivation source that encourages people to do what they want when they are free to choose. If they see that something will be beneficial, then they feel interested. This then brings satisfaction. When satisfaction decreases, interest also decreases (Hurlock, 2007). Interest can also be interpreted as how much individuals like or dislike stimulus (Surya, 2004). Something that is of interest will attract more attention. Interest is interpreted as the tendency of sedentary subjects to feel interested in a particular field of study or subject and feel happy studying the material (Winkel, 2012).

From some of the opinions above, it can be concluded that interest is a sense of interest or disinterest, like or dislike, and pleasure or displeasure with certain subjects or learning processes that affect student learning outcomes. The special interest of students is useful for learning other things (Hamalik, 2007). Interest can also be interpreted as feeling happy or unhappy in facing an object (Surya, 2004). Student interest in learning will be related to student motivation because it seems logical to motivate students to link learning experiences with student interests (Djiwandono, 2008). Interest in learning and learning experiences can be maximized if integrated into life skills by providing life provisions. One of the provisions for life in learning is using the learning management system that students use in teaching and learning activities during the Covid-19 pandemic (Wicaksana et al., 2017).

Many students' problems, especially in rural areas, are the lack of interest in learning. This is caused by the model or method used by the teacher when teaching is less attractive. Models or methods that are less effective and efficient cause unbalanced cognitive, affective, and psychomotor abilities, such as monotonous learning from time to time, so students feel bored and lack interest in learning. Student learning interest in learning is important in the smooth teaching and learning process (Berutu & Tambunan, 2018). Students who have a high interest in learning in the learning process can support the teaching and learning process for the better, and vice versa. Students' interest in learning is low; the quality of learning will decrease and affect the learning outcomes.

From the main factors causing the lack of student interest in learning biology, it is necessary to increase interest learning with class action research; during the Covid-19 pandemic, the current learning process is not done in the classroom but distance learning in each student's home by utilizing technology through E-learning system. In the current digital era, technological developments are growing rapidly and creating a phenomenon of virtual or

indirect interaction (online). Online learning is a system that can facilitate students to learn more broadly, more widely, and in a variety of ways (Agus & Rosadi, 2015). Students can learn anytime and anywhere without being limited by distance, space, and time through the system's facilities. Optimal use of technology to facilitate interaction with students in the learning process is expected to have been integrated with the Blended Learning model (Prayitno & Hidayati, 2017). Blended learning is a learning model that combines face-to-face learning with learning that uses online learning resources. In the learning process, blended learning requires appropriate media. one of the media suitable for blended learning is Edmodo.

One solution to increase student learning interest is through Edmodo online learning. Edmodo is an educational site based on social networking in which there is various content for education; teachers can post learning materials (Zwang, 2010). Edmodo provides a safe and easy way for classroom learning to even connect and collaborate with parents (Prabowo & Bachri, 2017). Parents can see every task and job assigned by the teacher to get or know their child's progress. Edmodo can make it easier for students to collaborate, learn independently, interact between teachers and students to encourage feelings of joy and enthusiasm for student learning (Rosyidah et al., 2018). Edmodo media presented with the concept of gamification in its assignment can encourage feelings of pleasure and student engagement (engagement) so that the learning process is more student-centered (Jusuf, 2016). Edmodo's teaching staff's mastery greatly helps the teaching staff manage to learn easily because this media facilitates distributing teaching materials, working on questions, and providing topics for discussion in forums (Herowati, 2016).

One of the e-learning learning media used for learning activities is Edmodo-based learning media. Edmodo is one site that is similar to Facebook but has more complete features and can be used in learning, and this site is confidential, so it is safe to use (Apriliyana, 2017). Edmodo makes it easy for students and teachers to connect, collaborate, share content, access work, grades, and school notifications. Edmodo helps teachers assign assignments to students, quizzes, and grading at the end of each lesson.

Based on Ekayati (2018) research, lecturers and students positively perceive the implementation of blended learning methods with Edmodo applications. The quality and intensity of learning are also increasing. Also, lecturers and students feel satisfied and interested in the learning process carried out by this method. This shows that through Edmodo's application, the method is effective to be applied as an increase in interest. Strengthened by Sele et al. (2019), Edmodo can also help teachers build a virtual classroom based on the division of real classes in schools, where in the class there are assignments, quizzes, and assigning grades to each learning

Another relevant study conducted by Subiyanto et al. (2018) found that approximately 80% of teachers showed the ability to use Edmodo. This can be seen from the level of participation followed by the number of teachers who have managed virtual classes accompanied by the uploading of learning material and the number of questions uploaded in the Edmodo account of each teacher. Thus, teachers' participation is high, but the follow-up is very real to be realized and implemented in the classroom's teaching and learning activities.

Other research conducted through the application of Edmodo as web-based learning has been carried out systematically. The conclusion is that Edmodo's application in the classroom has a positive impact on improving student cognitive and student motivation or interest (Vania et al., 2018). Research also conducted by (Daulay et al., 2016) concluded that this study's results were obtained that the retention value of students on the circulatory system material learned with Edmodo-based Blended Learning models was significantly higher than those learned with direct learning models. Edmodo's learning made learning not dependent on time and place. It made the class more dynamic because it allows teachers' interaction with students and between students and students in terms of lessons or assignments. A study conducted by Awal

et al. (2019) can conclude that the quality of Edmodo-based e-learning can demonstrate excellent qualifications, so the use of e-learning is based on Edmodo based effectively to increase learning interest the student where the learning interest of students who are taught with Edmodo media shows high interest and enthusiasm compared to those not taught with Edmodo media.

Then the results of research conducted by (Alshawi & Alhomoud, 2016) It can be concluded that there are three conclusions; first, the results of a study that focuses on Edmodo's effect on EFL learning outcomes show that Edmodo is effective for improving students' four grammar and language skills. The two results of research that focus on Edmodo's impact on student attitudes and motivation (interest) reveal that the use of Edmodo significantly increases student motivation (interest), independence, and responsibility; increase student involvement in learning activities; enhance their interactions with peers and teachers; and developing class dynamics. The three research results that focus on Edmodo's perception reveal that participants have a positive perception of Edmodo, which shows that participants perceive Edmodo as user-friendly, flexible, and adaptable to various learning approaches enjoy learning through this approach. Based on these explanations, This study aims to improve the quality of learning by applying Edmodo's application at biodiversity class material to class 10 students to increase student learning interest in the Covid-19 period.

METHODS

Research Design

This type of research is Classroom Action Research (PTK). Classroom Action Research or Classroom Action Research is an examination of learning activities in the form of deliberately raised actions and occur in one class together (Arikunto, 2006). Classroom Action Research (CAR) also means a form of action research applied in classroom learning activities (Muhadi, 2011). Classroom Action Research (CAR) 's main objective is to improve and improve professional teacher services in handling the learning process. Classroom Action (CAR) is a deliberate effort by the teacher to improve and enhance learning in the classroom. This research was conducted in 2 cycles online. The research design used was the Kemmis & McTaggart model. Kemmis & McTaggart's model of acting and observation components is made into one unit. This is based on the fact that the application of action and observation are inseparable. The Kemmis & McTaggart model's four components are seen as a cycle, a cycle of planning, observation, and reflection. Based on reflection, plan (improvement), action, and observation, as well as reflection of the actions taken. At the planning stage, appropriate planning actions are taken to solve problems in a class. Next is the observation action stage; at this stage, the planned action is carried out, and an observation of the activity is carried out. The reflection stage is a stage to remember the results that have been obtained from these activities to improve the learning actions that have been carried out. (Widayati, 2014).

Research Subject

The subjects in this study were students of class X-2 SHS 3 Kerinci Regency in Jambi Province, amounting to 23 students consisting of 11 girls and 12 boys. The selection of research subjects was based on the results of observations made; there was a problem of lack of interest in learning science class X-2 students in biology, especially biodiversity material. Science class X-2 students do not know Edmodo, so it needs to be introduced first. Edmodo is introduced by using a how-to guide that contains images and explanations of the features available.

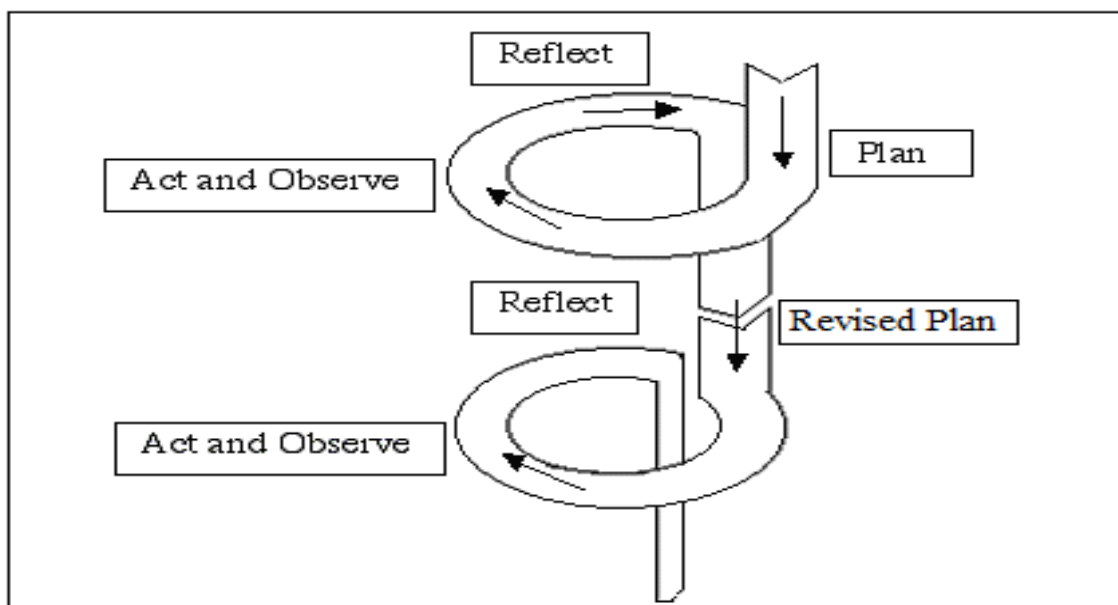


Figure 1. Research Model Kemmis & McTaggart

Instrument

The instruments used in this study were as follows: questionnaire is a list of questions or statements to get information from the desired respondent or source. The interviews were conducted verbally, while the questionnaire was conducted in writing (Moleong, 2011). In this study, using a structured questionnaire using an online questionnaire that has been prepared, the questionnaire has 20 statements addressed to 23 students consisting of 11 female students and 12 male students. This questionnaire was given after the lesson ended. This questionnaire's indicators are formulating questions, responding to the polling feature (assignments), and submitting assignments on time. The questionnaire's validity before being distributed to students was tested by involving two expert lecturers to see the suitability of the instrument items with the indicators. Likert scale value weighting table in Table 1.

Table 1.

Likert scale value weighting table.

No	Likert	Value weights
1	Strongly Agree (SS)	5
2	Agree (S)	4
3	Doubt (RR)	3
4	Disagree (TS)	2
5	Strongly Disagree (STS)	1

(Wijaya, 2013)

Observation is one of the techniques or ways to collect data by conducting observations of ongoing activities. Observations are made online by looking at the activeness of students in online learning. Learning activities are observed, such as student behavior while studying, discussing, doing assignments, and so on. Data from observations are recorded in an observation sheet used as data that illustrates all learning activities from beginning to end (Mardialis, 1995). The aspects observed in online learning using Edmodo are the ability and courage of students to ask questions after learning is given through Edmodo, the skills to respond to problems or statements presented by the teacher and observe the timely collection of assignments.

Documentation is used as data to prove research because the document is a stable source, can be useful as evidence for testing, has a natural nature, not reactive, so it is easy to find with content study techniques (Wiriaatmadja, 2012). In addition to the study results, the content will open up opportunities to further broaden knowledge towards something being investigated. The documentation used in this research is in the form of photos and screenshots in the online learning process. The material on biodiversity is used in an online module in PDF (Portable Document Format). Also, a learning video is added, which is uploaded to Edmodo. The included learning video is an understanding of the concept of biodiversity, such as forming rain. Learning evaluation is carried out by providing multiple-choice questions made in the Edmodo application.

Procedure

The research procedure is in the form of a cycle. Each cycle consists of four stages, including planning, acting, observation, and reflection; before carrying out an action, it is very important to plan ahead. Activities included in planning are making learning plans, preparing supporting tools needed in class, following learning plans in the form of learning videos and textbooks, and designing evaluation tools in test questions and answer keys. After doing the planning, carried out the implementation of actions that are implementing the design plan that has been made. During the implementation of the action, observations were carried out to collect data and information about the teacher's learning process by the actions that have been prepared. The results of the observation are used as a guideline for preparing the next cycle plan. The things observed were: student activities during class learning with the teacher, activities in group discussions, and class discussions. The results of the analysis and reflection will determine whether the action taken can solve the problem or not. If the results are not as expected, then the problem is not resolved, a revision will be held. Improvements are carried out based on the results of the reflection seen in the previous cycle.

Data Analysis Techniques

Data analysis is an effort made by working with data, organizing data, breaking it down into manageable units, synthesizing it, searching and finding patterns, finding what's important and learning, and deciding what can be told to others (Hamzah, 2012). As for giving a percentage on the questionnaire on the application of Edmodo media applications in learning interest, the authors use the formula and criteria in Table 2.

$$\text{Final Score Percentage} = \frac{\text{Score obtained}}{\text{maximum score}} \times 100\%$$

Table 2.

By using the formula above, the writer uses the following criteria:

No	Criteria	Interval Percentage of Achievement (%)
1	Less	0 - 20
2	Not Good	20 - 40
3	Enough	40 - 60
4	Good	60 - 80
5	Very good	80 - 100

(Wijaya, 2013)

The application of Edmodo online learning, which is done by observing students' interest in learning, uses the following formula and criteria in Table 3.

$$\text{Percentage} = \frac{f}{n} \times 100\%$$

Information:

f: frequency, n: Respondent

Table 3.

By using the formula above, the writer uses the following criteria:

No	Criteria	Interval Percentage of Achievement (%)
1	Student learning interest is low	0 - 24.99
2	Student interest in moderate learning	25 - 44.99
3	Student learning interest is high	50 - 74.99
4	Student learning interest is very high	75 - 100

(Sobron et al., 2019)

RESULTS AND DISCUSSION

This research was conducted in two cycles. Each cycle of this activity consists of four stages: planning, implementing, observing, and reflecting. The learning system used was blended learning using Edmodo. Learning in cycle I discussed material about biodiversity. After the material is discussed, problems related to Edmodo's material were given through posts for each student to respond to based on their respective opinions. Additional material in the form of modules was inserted into Edmodo to study at home; in supplementary material, several questions need to be answered collected at the time which is determined in Edmodo, which was two days before the learning process of cycle II so that students' interest in learning can be observed based on predetermined indicators. Cycle II reviews previously studied biodiversity material and learning approaches. During the learning process, data was obtained from observations and questionnaires on student learning interests.

Based on observations that have been made online, the activities studied to measure students' interest in learning are formulating questions, responding to polling features, and collecting assignments on time. In [Table 4](#), it can be seen that before the use of Edmodo 30% (7 people) of students can formulate questions, 48% (11 people) of students can respond, and only 39% (9 people) of students who submit assignments on time. This percentage shows that students' interest in learning is still quite low. Then, the application of learning using Edmodo was carried out in two cycles to observe an increase in student interest in learning.

In cycle I, the results of observations from the use of Edmodo in learning can be seen in [Table 4](#) that 52% (12 people) of students were able to formulate questions on Edmodo, 78% (18 people) were able to respond to polling features, and 65% (15 people) of students able to collect assignments on time. This shows that Edmodo can increase students' interest in learning about the lessons taught by the teacher. However, the increase in learning interest is still not optimal because students are still adapting to learning using Edmodo. Therefore it is necessary to do cycle II. This is as expressed by Prabowo (2018) that to increase interest in learning; it is necessary to provide sufficient opportunities or time for students to make adjustments to the applied learning management.

In the second cycle, it was found that reflection to optimize learning activities needed to increase Edmodo's intensity. In the second cycle, the learning process was intensified for students by discussing material on biodiversity and further enhancing the interaction between teachers and students and fellow students' assignments through Edmodo. The observation result in cycle II shows that there is an increase in student interest in learning. [Table 4](#) shows that 91% (21 people) of students were able to formulate questions or questions, 96% (22 people) of students were able to respond to the polling feature, and 100% (23 people) of students submitted their assignments on time.

Based on these observational data, it can be concluded that there is an increase in high student learning interest through the Edmodo application and the application of the Edmodo application media is very effective in the learning process as evidenced by a very large increase in interest learning. In the first cycle to the second cycle, there was an increase in each indicator to formulate the problem of an increase of 39%, an increase in the features of responding to

polls by 18%, and an increase in collecting by 35%. Based on this, it can be concluded that Edmodo in the learning process can increase student interest in learning. This proves that in cycle II the criteria for student interest in learning are very high. Interest in learning can increase with the application of learning using Edmodo with an increase in interest in learning by 76% (Yustinaningrum, 2018). Edmodo's use can be an application media to train students to learn independently, make students actively look for material sources before learning, conduct online discussions about given assignments, and complete assignments on time.

Table 4.

Observation results in student learning interest using Edmodo.

No	Indicator	Before Actions	Cycle I	Cycle II
1	Formulate questions	30%	52%	91%
2	Provide feedback on the polling feature	48%	78%	96%
3	Collecting assignments	39%	65%	100%
Average student interest in learning		39%	65%	96%

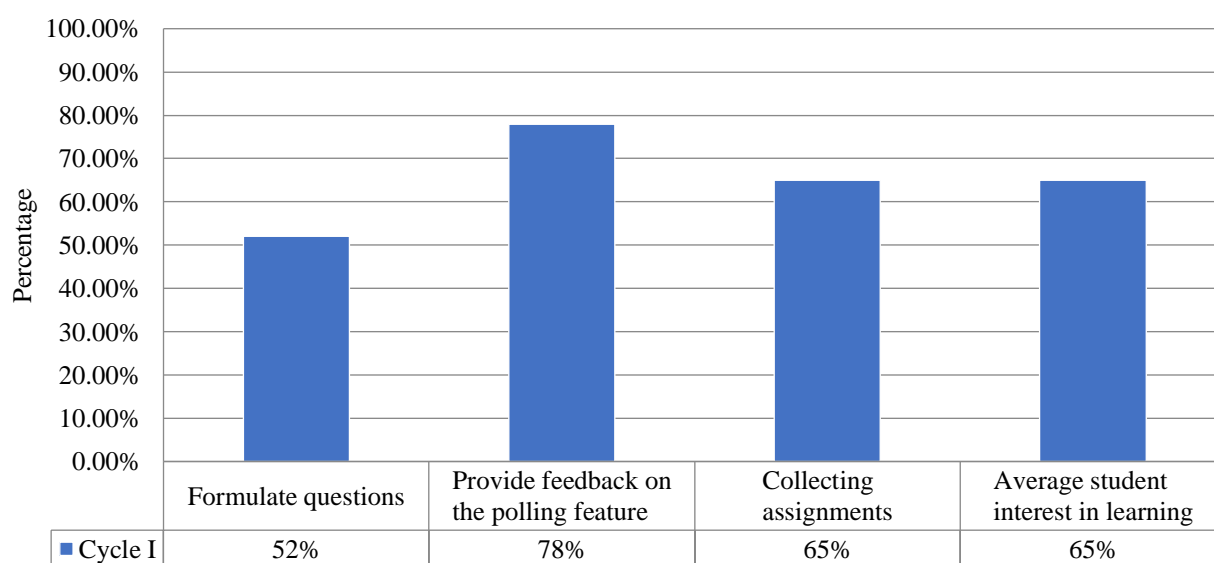


Figure 2. Comparison on Percentage of Student learning interest achievement Indicators from Cycle I to II

Interest in learning and motivation can be reasons for an individual to take action. Interest in learning will show a desire to obtain information, develop abilities or skills, and master this knowledge. Students' interest in using learning media using software is greater than their traditional learning interest or interest in the classroom. Utilizing the potential of technology using Edmodo has a positive effect on students (Vania et al., 2018). Student learning interest in participating in learning is something important in the smooth teaching and learning process. Students who have a high interest in learning in the learning process can support the teaching and learning process for the better, and vice versa, students' interest in learning is low, the quality of learning will decrease (Berutu & Tambunan, 2018).

The use of Edmodo media as an E-Learning-based media can encourage students to explore their knowledge or improve their cognitive abilities through independent assignments or class group discussions given (Rosyidah et al., 2019). Edmodo media makes it easy in the learning process; students are motivated to learn and understand the material being taught better than before using Edmodo media. This was strengthened by Permana & Chamisijatin (2019), Edmodo is a safe learning platform for teachers, students, and social media-based schools. Edmodo provides a safe and easy way for classroom learning to even connect and

collaborate with parents. Every task and job given by the teacher can be seen by parents to get or know the progress of their children.

The results of a study conducted by Awal et al. (2019) entitled "The Effectiveness of Using Virtual Classes Using Edmodo Applications" can be concluded that the quality of Edmodo-based e-learning shows very good qualifications, so the use of e-learning based on Edmodo is effective to increase student learning interest. The learning interest of students who are taught with Edmodo media shows high interest and enthusiasm compared to those not taught with Edmodo media. This matter of student interest give effect to study interest. Strengthened by Putri et al. (2018), Edmodo is one of the web-based learning media that is used to control student activities both by teachers and parents in the form of virtual classrooms. In essence, Edmodo provides everything we can do in class with students in learning activities plus facilities for parents to monitor all their children's activities on Edmodo as long as they have a Parent code for their children.

Teachers and students have positive perceptions of applying the blended learning method with the Edmodo application. The quality and intensity of learning are also increasing. Also, teachers and students are satisfied and interested in the learning process carried out by this method. This shows that the method through Edmodo's application is effective to be applied as an interesting enhancer (Retnoningsih, 2017).

In addition to increasing student interest in using Edmodo, learning media can improve students' critical thinking skills. Based on Permana & Chamisijatin (2019) research, it was found that project-based learning using Edmodo learning media can improve students' necessary thinking skills. The use of e-learning Edmodo can also allow students to learn, do assignments wherever and whenever they are without space and time restrictions. This flexibility can make students more enthusiastic about using technological devices such as laptops, cellphones, or computers during the learning process (Suparya, 2020).

Data collection that has been carried out during the research other than through observation was also carried out with a questionnaire of students' interest in learning. Based on the results of the questionnaire Interest in learning to use Edmodo, which was edited through Google Forms which sent the link through the Edmodo homepage, the data shows that 23 students obtained an average response rate of 76.74% with a good category, it can be said that the use of Edmodo media very effective in increasing student interest in learning. The details of the questionnaire responses' results are the number of students' responses that strongly agree 50.22%, agree 26.52%, Doubt 14.14%, disagree 4.56%, and strongly disagree 4.56%. This shows that some students like the lesson by using Edmodo. This is because learning seems more relaxed. After all, it uses media that are familiar to students, namely smartphones. According to Suriadhi (2014), Edmodo also makes it easier for students to send assignments with teachers. No need to wait long to see the results of the assignments we are doing. Teachers no longer have difficulty in giving assignments or quizzes. This is given without having to wait for a face-to-face schedule, makes it easy for students to see information or teaching materials provided by the teacher, and students can collect anytime and anywhere.

Table 5.

Results of the questionnaire students' interest in learning using Edmodo.

No	Likert	Percentage	Average strongly agree and agree
1	Strongly Agree (SS)	50,22%	
2	Agree (S)	26,52%	
3	Doubt (RR)	14,14%	76.74%
4	Disagree (TS)	4,56%	
5	Strongly Disagree (STS)	4,56%	
Criteria			Good

Research conducted by Subiyanto et al. (2018) concluded that the results of this study found that approximately 80% of teachers showed Edmodo. Edmodo can be seen from the level of participation followed by the number of teachers who have managed virtual classes accompanied by the uploading of learning materials and the number of questions uploaded in the Edmodo account of each teacher. Thus, teachers' participation is high, but the follow-up is very real to be realized and implemented in the classroom's teaching and learning activities. This was strengthened by Hamka & Effendi (2019). Edmodo is one of the sites similar to Facebook but has more complete features and can be used in learning. And this site is confidential, so it is safe to use. Edmodo makes it easy for students and teachers to connect, collaborate, share content, access work, grades, and school notifications. Edmodo helps the teacher assign assignments to students, quizzes or quizzes, and grading at each lesson's end.

According to Sukardi & Hartanto (2018), Edmodo-based E-Learning learning media can be used as an alternative in the classroom's learning process because it makes it easy for teachers to conduct teaching, interact with students, monitor student group activities, and conduct evaluations. However, it can be a forum for sharing with teachers to develop learning methods that have been applied. Strengthened by Yenni & Malalina (2018), The results of this study found that the retention value of students who were taught with the Edmodo-based Blended Learning model was significantly higher than those conducted by the direct learning model. This is because Edmodo's learning makes learning not dependent on time and place and makes the classroom more dynamic because it allows the interaction of teachers with students and between students and students in terms of lessons or assignments.

CONCLUSION

Based on the research that has been done, it can be concluded that the application of Edmodo media in online learning to increase student interest in biodiversity material science class X-2 SHS 3 Kerinci, Indonesia can be said to be successful evidenced by the results of observations in student learning interest obtained in the second cycle the criteria for student interest in learning were very high at 96%. While student interest in learning questionnaires was obtained with good criteria of 6.74%. This shows that Edmodo media can increase students' interest in learning. Edmodo's use can be an application media to train students to learn independently, make students actively look for material sources before learning, conduct online discussions about given assignments, and complete assignments on time.

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REFERENCES

- Agus, R., Rosadi, M. E., & Dewi, S. (2015). Penerapan System E-Learning Dengan Edmodo Pada Pengajar Untuk Penunjang System Pengajaran Di Mtsn Kelayan. *Jurnal Al-Ikhlas*, 1(1), 23–25. Retrieved from <https://ojs.uniska-bjm.ac.id/index.php/AIJP/article/view/298>
- Alshawi, S. T., & Alhomoud, F. A. (2016). The impact of using edmodo on saudi university efl students' motivation and teacher-student communication. *International Journal of Education*, 8(4), 105–121. <https://doi.org/10.5296/ije.v8i4.10501>
- Apriliyana, M. (2017). Validitas media pembelajaran e-learning berbasis edmodo pada materi perubahan lingkungan dan daur ulang limbah siswa kelas x sma/ma. *Bioedu*, 6(3), 280–285. Retrieved from



<https://jurnalmahasiswa.unesa.ac.id/index.php/bioedu/article/view/20873>

- Arikunto, S. (2006). *Penelitian Tindakan Kelas*. Jakarta: Bumi Aksara.
- Awal, R., Sari, M., & Suharni. (2019). Efektivitas penggunaan kelas virtual menggunakan aplikasi edmodo. *Jurnal Lentera Pendidikan*, 4(2), 102–106. Retrieved from <https://ojs.ummetro.ac.id/index.php/lentera/article/download/1105/786>
- Berutu, M. H. A., & Tambunan, M. I. H. (2018). Pengaruh minat dan kebiasaan belajar terhadap hasil belajar biologi siswa sma se-kota stabat. *Jurnal Biolokus*, 1(2), 109–115. <https://doi.org/10.30821/biolokus.v1i2.351>
- Budiningsih, A. C. (2012). *Belajar dan Pembelajaran*. Jakarta: Rineka Cipta.
- Daulay, U. A., Syarifuddin, & Manurung, B. (2016). Pengaruh blended learning berbasis edmodo dan motivasi belajar terhadap hasil belajar ipa biologi dan retensi siswa pada sistem peredaran darah manusia di kelas VIII SMP Negeri 5 Medan Utami. *Jurnal Pendidikan Biologi*, 6(1), 260–266. <https://doi.org/10.24114/jpb.v6i1.4330>
- Djiwandono, sri E. W. (2008). *Psikologi Pendidikan*. Bandung: Sinar Baru Algensindo.
- Ekayati, R. (2018). Implementasi metode blended learning berbasis aplikasi edmodo. *EduTech: Jurnal Ilmu Pendidikan dan Ilmu Sosial*, 4(2), 50-56. Retrieved from <http://journal.umsu.ac.id/index.php/edutech/article/view/2277>
- Hamalik, O. (2007). *Psikologi Belajar dan Mengajar*. Bandung: Sinar Baru Algensindo.
- Hamka, D., & Effendi, N. (2019). Pengembangan media pembelajaran blended learning berbasis edmodo pada mata kuliah fisika dasar di program studi pendidikan ipA. *Journal of Natural Science and Integration*, 2(1), 19–33. <https://doi.org/10.24014/jnsi.v2i1.7111>
- Hamzah. (2012). *Menjadi Peneliti PTK yang Profesional*. Jakarta: Bumi Aksara.
- Herowati. (2016). Kemandirian Belajar siswa dalam online learning edmodo di SMKN 1 Sumenep. *Jurnal Lentera Sains (Lensa)*, 6(2), 99–107. Accessed from: <https://www.ejournalwiraraja.com/index.php/FKIP/article/view/291>
- Hurlock, elizabeth B. (2007). *Perkembangan Anak*. Jakarta: Erlangga.
- Jusuf, H. (2016). Penggunaan gamifikasi dalam proses pembelajaran. *Journal Ticom*, 5(1), 1–6. Retrieved from <https://www.neliti.com/publications/92772/penggunaan-gamifikasi-dalam-proses-pembelajaran>
- Mardialis. (1995). *Metode Penelitian*. Bumi Aksara.
- Moleong, J. (2011). *Metodologi Penelitian Kualitatif*. Bandung: Remaja Rosdakarya.
- Muhadi. (2011). *Penelitian Tindakan Kelas*. Yogyakarta: Shira Media.
- Nadeak, B. (2020). The effectiveness of distance learning using social media during the pandemic period of covid-19: A case in universitas kristen Indonesia. *International Journal of Advanced Science and Technology*, 29(7), 1764–1772. Retrieved from <http://sersc.org/journals/index.php/IJAST/article/view/16270>
- Niranjan, P. S. (2020). Corona virus pandemic impact on global education : A blessing in disguise. *Sustainable Humanosphere*, 16(2), 68–72. Retrieved from <https://www.semanticscholar.org/paper/Corona-virus-Pandemic-impact-on-Global-Education%3A-A-Niranjan/0227e397da4e2dcc757ec4bbe0c3c7f3ede126d6>
- Onyema, E. M., Eucheria, N. C., Obafemi, F. A., Sen, S., Atonye, F. G., Sharma, A., & Alsayed, A. O. (2020). Impact of coronavirus pandemic on education. *Journal of Education and Practice*, 11(13), 108–121. <https://doi.org/10.7176/jep/11-13-12>

- Parray, O. (2017). *Indonesia Jobs Outlook 2017*. Jakarta: International Labour Organization.
- Permana, F. H., & Chamisijatin, L. (2019). Project-based learning through edmodo: improving critical thinking and histology concepts. *Biosfer: Jurnal Pendidikan Biologi*, 12(1), 58–69. <https://doi.org/10.21009/biosferjpb.v12n1.58-69>
- Prabowo, A. C. (2018). Implementasi model pembelajaran “ wisata lokal ” untuk meningkatkan minat dan hasil belajar mata pelajaran perbaikan motor otomotif di kelas XII teknik kendaraan ringan SMK Muhammadiyah Pakem tahun pelajaran 2017 / 2018. *Seminar Nasional Pendidikan, Sains Dan Teknologi Fakultas Matematika Dan Ilmu Pengetahuan Alam Universitas Muhammadiyah Semarang*, 8–18. Retrieved from <https://jurnal.unimus.ac.id/index.php/psn12012010/article/view/3033>
- Prabowo, H. W., & Bachri, B. S. (2017). Pengaruh pemanfaatan edmodo sebagai media pembelajaran e-learning pada mata pelajaran keterampilan komputer dan pengelolaan informasi (KKPI) untuk meningkatkan hasil belajar siswa kelas XI SMK di Gresik. *Jurnal Mahasiswa Teknologi Pendidikan*, 8(3), 1–6. Retrieved from <https://jurnalmahasiswa.unesa.ac.id/index.php/jmtp/article/view/21486>
- Prayitno, T. A., & Hidayati, N. (2017). Pengembangan multimedia interaktif bermuatan materi mikrobiologi berbasis edmodo android. *Bioilmi: Jurnal Pendidikan*, 3(2), 86–93. <https://doi.org/10.19109/bioilmi.v3i2.1399>
- Putri, S. R., Wahyuni, S., & Suharso, P. (2018). Penggunaan media pembelajaran edmodo untuk meningkatkan aktivitas dan hasil belajar siswa kelas x pemasaran di SMK Negeri 1 Jember tahun ajaran 2016/2017. *Jurnal Pendidikan Ekonomi*, 11(2), 108–114. <https://doi.org/10.19184/jpe.v11i2.6455>
- Retnoningsih, E. (2017). Perbandingan learning management system edmodo dan moodle dalam pembelajaran online. *Information System For Educators And Professionals : Journal Of Information System*, 1(2), 221–230. Retrieved from <http://ejournal-binainsani.ac.id/index.php/ISBI/article/view/366>
- Rosyidah, Kartini, T., & Kantun, S. (2018). Penggunaan media edmodo untuk meningkatkan motivasi dan hasil belajar siswa. *Jurnal Pendidikan Ekonomi*, 13(2), 78–84. Retrieved from <https://jurnal.unej.ac.id/index.php/JPE/article/view/10878>
- Sele, Y. (2019). Optimizing the potential of children learning in science (clis) with brain gym: review on human circulatory concepts. *Biosfer: Jurnal Pendidikan Biologi*, 12(2), 238–248. <https://doi.org/10.21009/biosferjpb.v12n2.238-248>
- Septian, I., Ariyati, E., & Marlina, R. (2018). Analisis konsepsi siswa pada materi keanekaragaman hayati di SMA. *Jurnal Pendidikan dan Pembelajaran Khatulistiwa*, 7(10). Retrieved from <https://jurnal.untan.ac.id/index.php/jpdpb/article/download/29346/75676578969>
- Slameto. (2010). *Belajar dan Faktor-Faktor yang Mempengaruhinya*. PT Rineka Cipta.
- Sobron, A. ., Bayu, Rani, & Meidawati. (2019). Persepsi siswa dalam studi pengaruh daring learning terhadap minat belajar IPA. *Jurnal Pendidikan Islam Dan Multikulturalisme*, 1(2), 30–38. <https://doi.org/10.37680/scaffolding.v1i2.117>
- Subiyanto, Supriyati, I., & Markamah, N. (2018). Pelatihan e-learning menggunakan edmodo pada para guru SMK Nu Ungaran. *Jurnal ABDIMAS*, 22(1), 83–88. Retrieved from <https://journal.unnes.ac.id/nju/index.php/abdimas/article/view/11145>
- Sukardi, & Hartanto, S. (2018). Pelatihan pemanfaatan media e-learning edmodo di SMKN 2 Tulungagung. *Jurnal Pengabdian Kepada Masyarakat*, 6(1), 39–48. Retrieved from <https://jurnal.stkipppgritlungagung.ac.id/index.php/jadimas/article/view/967>

- Suparya, I. K. (2020). Peningkatan motivasi dan kemampuan berpikir kritis mahasiswa melalui model pembelajaran berbasis masalah berbantuan media edmodo. *Jurnal Ilmiah Pendidikan Citra Bakti*, 7(1), 1–12. <https://doi.org/10.38048/jipcb.v7i1.63>
- Suriadhi, G., Tastra, I. D. K., & Suwatra, I. I. W. (2014). Pengembangan e-learning berbasis edmodo pada mata pelajaran IPA kelas VIII di SMP Negeri 2 Singaraja. *Jurnal Edutech Undiksha*, 2(1), 1–10. Retrieved from <https://ejournal.undiksha.ac.id/index.php/JEU/article/view/3795/>
- Surya, M. (2004a). *Psikologi Pembelajaran dan Pengajaran*. Bandung: Pustaka Bani Quraisy.
- Surya, M. (2004b). *Psikologi Pembelajaran dan Pengajaran*. Bandung: Pustaka Bani Quraisy.
- Vania, P. F., Setiawan, W., & Wijaya, A. F. C. (2018). Edmodo as web-based learning to improve student's cognitive and motivation in learning thermal physics. *Journal of Science Learning*, 1(3), 110–115. <https://doi.org/10.17509/jsl.v1i3.11796>
- Warsita, B. (2007). Peranan teknologi informasi dan komunikasi dalam penyelenggaraan pembelajaran jarak jauh. *Jurnal Teknodik*, 11(20), 854–915. <https://doi.org/10.32550/teknodik.v21i3>
- Wicaksana, E.J. (2020). Efektivitas pembelajaran menggunakan moodle terhadap motivasi dan minat bakat. *EduTeach*, 1(2), 117–124. Retrieved from <https://core.ac.uk/download/pdf/227161859.pdf#page=9>
- Wicaksana, E.J, Maridi, & Sutarno, S. (2017). Efektivitas modul pembelajaran biologi berorientasi integrated scientific proses untuk meningkatkan vocational skills siswa sma. *Jurnal Pendidikan Biologi*, 8(2), 64–69. Retrieved from <http://journal2.um.ac.id/index.php/jpb/article/view/2280>
- Wicaksana, E. J., & Atmadja, P. (2018). Analysis of the impact of teacher program direktorat psmk(sm3t program) to animo learning students in biological lessons in smkn 1 kintamani, bali. *BIODIK*, 4(2), 77–82. <https://doi.org/10.22437/bio.v4i2.6123>
- Widayati, A. (2008). Penelitian tindakan kelas. *Jurnal Pendidikan Akuntansi Indonesia*, 6(1), 87–93. <https://doi.org/10.21831/jpai.v6i1.1793>
- Wijaya, R. (2013). *Skala Likert (Metode Perhitungan, Persentase dan interval)*. Jakarta: Erlangga.
- Winkel, W. S. (2012). *Psikologi Pengajaran*. Yogyakarta: Media Abadi.
- Wiriaatmadja, R. (2012). *Penelitian Tindakan Kelas Untuk Meningkatkan Kinerja Guru dan Dosen*. Bandung: Remaja Rosdakarya.
- Yenni, R. F., & Malalina. (2018). Pelatihan pemanfaatan media sosial edmodo sebagai media pendukung pembelajaran bagi guru di smp tamansiswa palembang. *Jurnal Cemerlang: Pengabdian Pada Masyarakat*, 1(1), 71–89. <https://doi.org/10.31540/jpm.v1i1.160>
- Yustinaningrum, B. (2018). The implementation of e-learning web-based model centric course (edmodo) toward the mathematics' interest and learning outcomes. *Jurnal Pendidikan Matematika*, 9(1), 25–32. <https://doi.org/10.24042/ajpm.v9i1.2175>
- Zwang, J. (2010). *A Free Secure Social Networking Site For School*. Cambridge: Harvard University.