

## **Implementation Social and Emotional Learning (SEL): Promoting Students' Learning Activities**

**Mutiara Arieny<sup>1</sup>, Dewi Kartika<sup>2</sup>, Mgs. Muhammad Tibrani<sup>1\*</sup>**

<sup>1</sup>PPG Prajabatan, Biology Education Major of Sriwijaya University, Palembang, Indonesia

<sup>2</sup>Senior High School 2 Palembang, Indonesia

Corresponding Author: [m\\_tibrani@fkip.unsri.ac.id](mailto:m_tibrani@fkip.unsri.ac.id)

### **Article History**

Received: August 18<sup>th</sup>, 2023

Revised: September 24<sup>th</sup>, 2023

Accepted: October 18<sup>th</sup>, 2023

**Abstract:** This research is motivated by issues that indicate the students' activities at Senior High School 2 Palembang in biology education are still below the minimum criteria. The purpose of this study is to promoting students' learning activities in the topic of ecosystems by implemented of Social Emotional Learning (SEL). Method of this research is Classroom Action Research (CAR) design involving planning, action, observation, and reflection cycles during 2 cycles. In this research, the sample consists of students from class X.7. The data collected included observations of students' learning activities and documentation. The observation of learning activities covers several aspects, including visual activities, oral activities, writing activities, and mental activities. The results showed a significant increase in the percentage of students' average learning activity scores, from 37.1875% before the implementation (Pre-cycle) of Social Emotional Learning to 53.90625% after the implementation of Cycle I of Social Emotional Learning, and further increased to 77.5% after the implementation of Cycle II of Social Emotional Learning. Based on the results, it can be concluded that the implementation of Social Emotional Learning has significant potential in improving students' learning activities in the ecosystem subject.

**Keywords:** Ecosystem; Learning Activities; Social Emotional Learning

## **INTRODUCTION**

Education is one of the crucial aspects in every individual's life. Besides imparting academic knowledge, education also aims to develop students' social and emotional skills (Tanjung, I. F., & Tambunan, E. P. S., 2022). The social-emotional aspect has a significant impact on students' learning activities. By attending to and developing healthy social-emotional aspects, schools and teachers are expected to create an inclusive, supportive, and motivating learning environment that enhances students' learning activities (Azizi, A., & Irwansah, I., 2020). Active and meaningful learning activities are essential factors in achieving optimal learning outcomes. However, students often face challenges in maintaining their engagement in learning, especially when the taught material is complex or uninteresting (Astuti, I. et al., 2019).

Learning activity refers to the activities carried out by students in their learning process, utilizing their ideas, intelligence, and interests to foster cognitive, normative, affective, and psychomotor development (Nurmala et al., 2014; Rosiana et al., 2012). To achieve good learning

activities, students need to actively process and respond to the information provided by educators (Anggreiny et al., 2020). Thus, effective learning activities can help shape students' cognitive and psychomotor development, ultimately improving their learning outcomes.

Research on learning activities in biology education at SHS 10 Palembang indicates varying percentages of learning activity scores. The observation shows that attention activities scored 54% with a low category, oral activities scored 46% with a low category, motor activities scored 62% with a high category, and writing activities scored 50% with a low category (Anggreiny et al., 2020). Suboptimal learning activity scores can hinder students from achieving a good understanding and potentially impact their overall learning outcomes. In this context, it is important to enhance students' learning activities to enable them to attain better learning outcomes. One approach is to design learning activities that actively engage and elicit responsiveness from students towards the learning material (Arieny, M. et al., 2021). Learning activities that involve interaction between students and educators, as well as

engage various skills such as cognitive, normative, affective, and psychomotor, will help improve understanding and mastery of the taught concepts (Nurmala et al., 2014).

Based on observations at Senior High School 2 Palembang, biology learning activities at the high school level often face several issues that can affect the quality and level of student participation. Some common problems related to biology learning activities are: firstly, a lack of active involvement. Biology learning activities that focus solely on theoretical explanations and assignments sometimes fail to stimulate active student engagement. Insufficient direct interaction with the material, such as experiments or practical activities, can make learning monotonous and less engaging (Saputri, W. E., & Sikumbang, D., 2019). As a result, students tend to participate less actively in biology education. Secondly, a lack of technology integration. Technological advancements provide numerous opportunities to enhance biology learning activities. However, the insufficient integration of technology in biology education in some schools hinders students' ability to utilize digital resources, simulations, or software that could enrich their learning experiences (Zuriah & Zuriah, 2021). Thirdly, a lack of relevance to daily life (Poondej, C., & Lerdpornkulrat, T., 2016). Students struggle to see the connection between the biology concepts taught in school and their everyday lives. Insufficient contextual linking and practical application of biology concepts in real-life situations can diminish biology learning activities, which ultimately affects students' learning outcomes (Husni, H., 2020).

To address these issues, it is important for schools and teachers to develop innovative and relevant learning strategies, utilizing available resources. Social Emotional Learning (SEL) is expected to serve as a holistic approach to enhance students' learning activities (Styfanyshyn, I., & Yurko, N., 2020). Furthermore, SEL is expected to be an effective solution by integrating academic, social, and emotional aspects into the learning process (Borowski, T., 2019). The Collaborative for Academic, Social, and Emotional Learning (CASEL) defines social and emotional learning as a process through which students acquire and effectively apply the knowledge, attitudes, and skills they need to understand and manage emotions, set and achieve positive goals, feel and

show empathy for others, establish and maintain positive relationships, and make responsible decisions (Alexander, K., & Vermette, P., 2019). The core principles of SEL include self-awareness, emotion management, social awareness, social skills, and responsible decision-making.

The implementation of Social Emotional Learning in ecosystem material aims to help students develop a better understanding of ecosystems and acquire the social and emotional skills necessary to collaborate in that context (Mahoney, J., et al., 2021). By increasing their self-awareness of the importance of ecosystem preservation and building empathy towards living beings within it, students are expected to become more caring and responsible individuals towards the environment (Cojocar, S., 2023). Additionally, Social Emotional Learning also emphasizes the development of social skills such as communication, teamwork, and conflict management (Dermody, C. M., et al., 2022). In the context of ecosystem learning, this is crucial as it enables students to collaborate in research, field observations, and environmental projects. These abilities will not only enhance students' active participation in the learning process but also help them become contributing members of society towards ecosystem preservation.

The implementation of Social Emotional Learning in the context of ecosystem learning will not only benefit students' learning activities but also have a positive impact on their holistic development (Jagers, R. J., et al., 2019). Students will gain a better understanding of the complex relationships within ecosystems and comprehend the impact of human actions on the environment (Pourghorban, Goorabi, et al., 2022). They will also learn to appreciate the diversity of life on Earth and acquire skills to adapt to dynamic environmental changes (Iaosanurak, C., et al., 2015).

In this context, the implementation of Social Emotional Learning as an effort to enhance students' learning activities in ecosystem material becomes a subject that needs further research. Previous studies have shown that SEL approaches have a positive impact on improving students' learning activities. However, there is still limited research specifically exploring the implementation of SEL in ecosystem material. Therefore, this research aims to fill this knowledge gap by exploring the potential implementation of SEL in enhancing students'

learning activities in ecosystem material. The research objective is to promoting students' learning activities and cognitive outcomes in ecosystem material through the implementation of SEL.

## METHOD

The method applied in this research is classroom action research. Classroom action research is a type of research conducted within the context of classroom learning by a teacher to address learning problems and improve the quality and outcomes of learning. This classroom action research falls into the category of qualitative research, where the data generated will be described descriptively using words. This classroom action research is planned to involve two cycles, based on the implementation plan of Group A learning and teaching by the Group A class teacher. Each cycle will be implemented according to the desired changes in learning (Sugiyono, 2017).

This research utilizes the classroom action research approach proposed by Kemmis and McTaggart. The research consists of four stages: planning, implementation, observation, and reflection. In the planning stage, the researcher formulates research objectives and designs the steps to be taken in implementing Social Emotional Learning. After planning, actions are taken involving the implementation of SEL principles in the ecosystem learning process. Next, the observation stage is conducted to monitor students' learning activities during the implementation of SEL. Observations are made by the teacher and the researcher, noting observations related to student engagement, social interaction, and emotional changes during the learning process. These observation data serve as the basis for analyzing the changes that occur in students' learning activities before and after the implementation of SEL. The final stage in the action research cycle is reflection, where the teacher and the researcher reflect on the results of implementing SEL and analyze the collected data (A.M Sardiman, 2014).

The population in this research refers to the group of students who are the subjects of the study. The population can be categorized as students who are currently studying or will study ecosystem material in the school under focus. This population includes all students in the relevant class or classes in the researched school.

The sample is a subset or portion of the population selected to participate in the study. In this research, the sample consists of students from class X.7. After selecting the sample, the students become the research subjects and will be involved in the implementation of SEL and the collection of data related to their learning activities in the ecosystem material. The data obtained from the sample will be used to analyze the impact of implementing SEL on students' learning activities and provide a more comprehensive understanding of the role of social-emotional aspects in the context of ecosystem learning (A.M Sardiman, 2014).

The research instruments used may include observation sheets for learning activities (Sugiyono, 2017). In this research, observations are made using an observation sheet that contains indicators related to students' learning activities during the learning process. The observation of learning activities covers several aspects, including visual activities, oral activities, writing activities, and mental activities.

Data collected from observations, and documentation are analyzed quantitatively and qualitatively. Quantitative data collected include students' learning activities during the implementation of SEL. Qualitative analysis is used to identify and analyze themes or patterns that emerge from qualitative data, such as changes in attitudes, increased social interactions, or emotional changes in students after the implementation of SEL (Sudaryono, 2016). Data on learning activities are obtained from qualitative data in the form of observation results regarding the teaching and learning situation. For the data on the results of observing students' learning activities, calculations are made using the equation (Aminoto & Pathoni, 2014):"

$$A = \frac{Na}{N} \times 100\% \quad \dots (1)$$

Explanation:

A = Student activity

Na = Number of active students

N = Total number of students

The interpretation of the value of students' learning activities is based on the criteria shown in Table 1 as follows (Aminoto & Pathoni, 2014);

**Table 1.** Interpretation of Students' Learning Activity Values

Interval	Categories
81-100	Very Active
61-80	Active
41-60	Quite Active
21-40	Less Active
0-20	Inactive

Based on data analysis, the researcher will reflect on the results of implementing Social Emotional Learning and evaluate its effectiveness in improving students' learning activity. If the results show a significant improvement, the implementation of Social Emotional Learning can be adopted as a sustainable learning approach in the context of ecosystem material. If the results are not satisfactory, a review and adjustment of the implementation steps are needed, as well as further research to enhance its effectiveness (Aminoto & Pathoni, 2014).

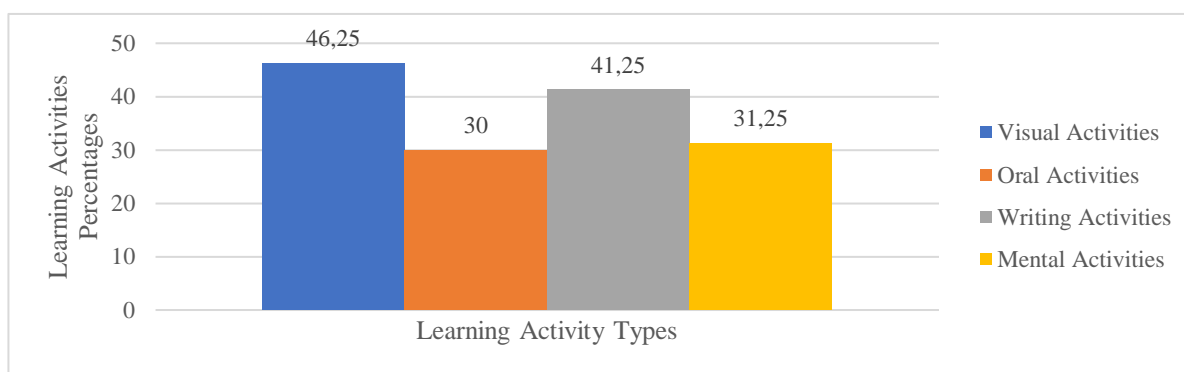
## RESULT AND DISCUSSION

### Pre- Cycle

This study aims to explore the implementation of Social Emotional Learning

(SEL) as an effort to improve students' learning activity in the ecosystem subject. Through the Classroom Action Research (CAR) design involving cycles of planning, action, observation, and reflection, this research collects in-depth quantitative and qualitative data to analyze the impact of implementing Social Emotional Learning on students' learning activity.

This study adopts the Classroom Action Research (CAR) design, which involves cycles of planning, action, observation, and reflection. In the planning phase, the researcher designs a lesson plan that integrates the principles of Social Emotional Learning into teaching the ecosystem subject. Subsequently, implementation takes place by applying relevant strategies and activities related to Social Emotional Learning. During the observation phase, the researcher observes and records students' learning activities and the influence of implementing Social Emotional Learning on their engagement. The reflection phase involves data analysis and evaluation of the outcomes achieved. Before starting the cycles, observation of students' learning activities and outcomes in Biology class X.7 has been conducted. The results of the pre-cycle learning activity observation can be seen in Figure 1.



**Figure 1.** Pre-Cycle Learning Activity Percentage Results

The graph represents the level of student engagement in the learning process, including activities such as paying attention, oral activities, writing activities, and mental activities. The data in this graph provides an initial overview of the learning activities before the implementation of the cycles. The graph shows the results where students have a 31.25% percentage of mental activity, which is interpreted as less active. Oral activities are also interpreted as less active with a percentage of 30%. On the other hand, paying attention and writing activities are interpreted as

moderately active, with percentages of 46.25% and 41.25% respectively. These results indicate trends and patterns in students' learning activities before implementing improvement measures in the upcoming cycles.

The implementation of SEL is carried out by forming study groups consisting of several students with different backgrounds. The purpose of forming these groups is to create interaction among students, enable communication involving cultural exchange, problem-solving, and discussions on current societal issues, and

enhance students' social-emotional development, particularly in the mental aspect. This condition is believed to help students apply the components of SEL. Once the groups are formed, teachers can deliver the material through PowerPoint presentations, mind maps, or videos.

## Cycle I

### a. Planning

In Cycle I, the action starts with planning the creation of Daily Lesson Implementation Plans for that cycle, consisting of 2 sessions. The learning activities in Cycle I are designed using Social Emotional Learning (SEL) with the Problem-Based Learning (PBL) model. The taught material is about the ecosystem, with sub-topics in the first session being ecosystem components and in the second session being interactions between ecosystem components. In Cycle I, the lesson design is developed to ensure comprehensive learning and active student involvement in the learning process.

The stages of social-emotional learning applied in the lesson design are as follows:

- 1) Self-awareness: This stage involves developing self-understanding and awareness of emotions, values, strengths, and weaknesses. Students are encouraged to recognize and explore a deeper understanding of their feelings and emotions, as well as their impact on behavior and relationships with others.
- 2) Emotion management: In this stage, students learn to recognize and manage their emotions in a healthy and constructive way. They are taught strategies to control anger, anxiety, and stress, as well as develop positive emotional regulation skills.
- 3) Social awareness: This stage involves developing understanding and awareness of empathy and understanding towards others. Students are taught to understand the feelings, perspectives, and needs of others, as well as develop empathy skills and perspective-taking.
- 4) Relationship skills: In this stage, students learn to interact positively with others. They are taught effective communication, collaboration, negotiation, and conflict resolution skills. Students are also taught how to build and maintain healthy and meaningful relationships with others.

- 5) Responsible decision-making: This stage involves developing students' ability to make ethical and responsible decisions. They are taught how to think critically, evaluate the consequences of their choices, and make appropriate actions in various situations.

Each stage of social-emotional learning can involve various activities, exercises, discussions, role-playing, and reflection. The goal of social-emotional learning is to help students develop strong social and emotional skills, enabling them to build positive relationships, manage emotions effectively, and make good decisions in daily life.

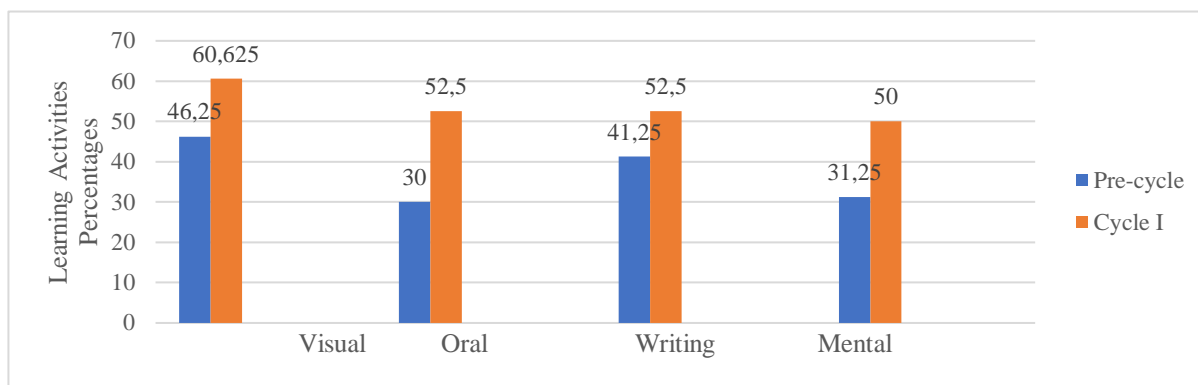
### b. Implementation

The implementation of Cycle I involves the following stages of activities. First is the introductory activity, which aims to introduce the concept or topic of the lesson to the students. This activity includes providing an overview, activating students' prior knowledge, and stimulating their interest in the upcoming material. Second, there is the core activity, which is the essence of PBL-based learning. In this activity, students engage in critical thinking, problem-solving, and concept exploration through the completion of relevant tasks or case studies. Students actively work in groups or independently to identify problems, gather information, analyze data, and find appropriate solutions. Third, there is the closing activity, which aims to reflect on the learning that has taken place. This activity involves group discussions, presentation of outcomes, and students' understanding of the learned concepts. The main goal of the closing activity is to consolidate students' understanding and connect it to a broader context, as well as to evaluate their achievements in problem-solving and applying concepts in PBL-based learning. This design is consistent with the research conducted by Nurmala, D. A., Tripalupi, L. E., & Suharsono, N. (2014), which states that PBL implementation activities consist of an introduction, core, and closing (Nurmala et al., 2014).

### c. Observation

Detailed data on learning activities in Cycle I have been explained through Figure 2.



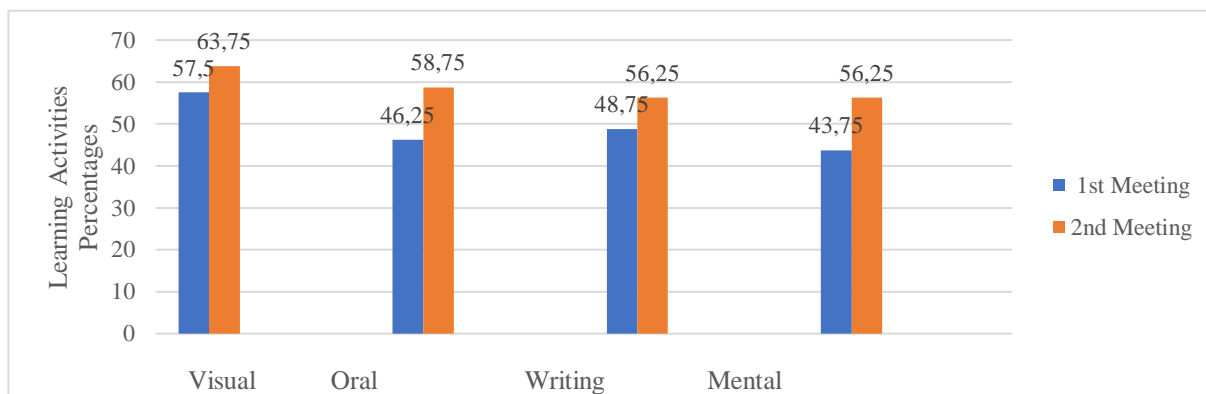


**Figure 2.** Comparison of Pre-Cycle and Cycle I Learning Activity

The figure illustrates the comparison of learning activity results in the ecosystem material between the pre-cycle and Cycle I. Through Figure 2, it can be seen that there is an improvement in the learning activity results between the pre-cycle and Cycle I. The results of Cycle I show an increase in the attention activity by 14.375%, reaching a percentage of 60.625%, which is categorized as moderately active. Furthermore, the writing activity has increased by 11.25% to 52.5%, which falls into the moderately active category. The oral activity has also increased by 22.5% to 52.5%, categorized as

moderately active. The mental activity is also categorized as moderately active, with a percentage increase of 18.75% to 50%. With this comparison, educators can evaluate the effectiveness of the implemented teaching strategies and improve the approach for future learning.

Detailed data on the activity results in Cycle I have been presented in Figure 3, which shows the percentages of each type of learning activity for the biology material on the ecosystem in Cycle I.



**Figure 3.** Cycle I Learning Activity Results

Figure 3 provides an overview of the percentage of learning activities that occurred during the learning process. These findings indicate that all student learning activities have improved from the first meeting to the second meeting in Cycle I. In the first meeting, the attention activity and writing activity had percentages of 57.5% and 48.75%, respectively, falling into the moderately active category. The oral activity and mental activity also fell into the moderately active category, with percentages of 46.25% and 43.75%, respectively. In the second meeting, there was an increase in the attention

activity by 6.25%, reaching a percentage of 63.75%, categorized as active. Meanwhile, the writing activity also increased by 7.5% to 56.25%, which still falls into the moderately active category. The oral activity remained in the moderately active category, with a percentage increase of 12.5% to 58.75%. The mental activity also fell into the moderately active category, with a percentage increase of 12.5% to 56.25%. In conclusion, although the attention and writing activities have improved and are categorized as active in this cycle, the oral activity and mental activity have not yet reached the active category.

This indicates the need for improvements or more effective approaches to stimulate students to be more active in oral and mental activities during the learning process.

#### d. Reflection

Based on the observation of the implementation of the Social Emotional Learning in Cycle I, it was found that the learning process was not flawless or as expected as described in the lesson plan. After discussing the results of Cycle I, the teacher and researchers concluded that there were still shortcomings in the implementation of social emotional learning, including: 1) lack of time organization, 2) not all students paying close attention to the teacher's explanations, 3) lack of enthusiasm among students in the classroom, 4) the teacher providing limited opportunities for students to ask questions and give responses, 5) students still find it difficult to express their opinions during discussions, 6) some students performing activities with a lack of carefulness, patience, and independence. Although there was an improvement in learning activity in Cycle I, there are still weaknesses in the implementation of Social Emotional Learning, leading to the continuation of this research to Cycle II.

### Cycle II

#### a. Planning

In Cycle II, the steps are the same as in the previous cycle, which is planning the creation of Daily Lesson Implementation Plans for Cycle II, consisting of 2 meetings. In Cycle II, the teacher continues to make efforts to improve the weaknesses encountered in the implementation of Cycle I. The design of learning activities in Cycle II uses social-emotional learning with the Problem-Based Learning (PBL) model. The topics taught are ecosystem materials, with sub-topics in the first meeting being Energy Flow and Ecological Pyramid, and in the second meeting being Biogeochemical Cycle and Productivity. In Cycle II, the learning design is designed to ensure that learning is conducted comprehensively and actively involves students in the learning process. Additionally, several weaknesses identified in Cycle I will be the focus of improvement in Cycle II.

The stages of social-emotional learning applied in the lesson plan are as follows: 1) Self-awareness: This stage involves the development of understanding and self-awareness of emotions,

values, strengths, and weaknesses. Students are encouraged to recognize and explore a deeper understanding of their feelings and emotions, as well as recognize their impact on behavior and relationships with others. 2) Emotion management: In this stage, students learn to recognize and manage their emotions in a healthy and constructive manner. They are taught strategies to control anger, anxiety, and stress, as well as develop positive emotional regulation skills. 3) Social awareness: This stage involves the development of understanding and awareness of empathy and understanding towards others. Students are taught to understand the feelings, perspectives, and needs of others, as well as develop empathy skills and perspective-taking. 4) Relationship skills: In this stage, students learn to interact positively with others. They are taught effective communication skills, collaboration, negotiation, and conflict resolution. Students are also taught how to build and maintain healthy and meaningful relationships with others. 5) Responsible decision-making: This stage involves the development of students' ability to make ethical and responsible decisions. They are taught how to think critically, evaluate the consequences of their choices, and choose appropriate actions in various situations.

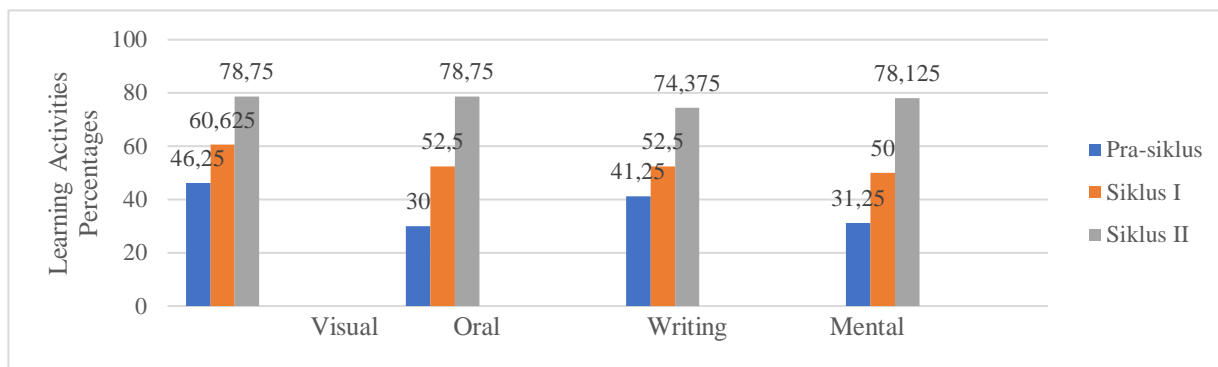
#### b. Implementation

The implementation of Cycle II involves a series of activity stages designed to achieve learning objectives. The first stage is the introduction activity, which aims to introduce the concept or topic of learning to students. This activity includes providing an overview, activating students' prior knowledge, and fostering their interest in the upcoming material. The second stage is the core activity, which is the essence of PBL learning. In this activity, students engage in critical thinking, problem-solving, and concept exploration through the completion of relevant tasks or case studies. They actively work in groups or individually to identify problems, gather information, analyze data, and find appropriate solutions. The third stage is the closing activity, which aims to reflect on the learning that has been done. This activity involves group discussions, presentation of results, and students' understanding of the learned concepts. The main goal is to consolidate students' understanding and connect it to a broader context, as well as evaluate their

achievements in problem-solving and applying concepts in PBL learning. This design is in line with the research conducted by Nurmala, D. A., Tripalupi, L. E., & Suharsono, N. (2014), which states that PBL learning implementation activities consist of introduction, core, and closing stages (Nurmala et al., 2014).

c. Observation

Detailed data on learning activities in Cycle II have been explained through Figure 4. The figure illustrates the comparison of learning activity results on ecosystem materials between pre-cycle, Cycle I, and Cycle II.

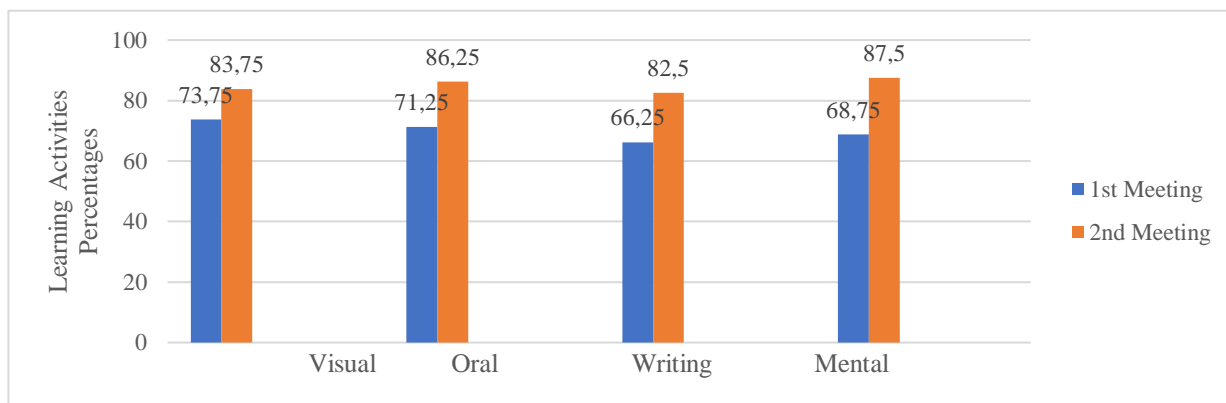


**Figure 4.** Comparison of Pre-Cycle, Cycle I, and Cycle II Learning Activity Results

Through Figure 4, it can be seen that there is an improvement in the learning activity results in Cycle II compared to Cycle I. The results of Cycle II show an increase in the attention activity by 18.125%, reaching a percentage of 78.75%, which is categorized as Active. Furthermore, the writing activity has increased by 21.875%, reaching 74.375%, which falls under the Active category. The oral activity has increased by

26.25%, reaching 78.75%, categorized as Active. The mental activity has shown a significant increase of 28.125% to 78.125%, categorized as Active.

The detailed data on activity results in Cycle II are presented in Figure 5, which shows the percentages of each type of learning activity for the biology topic of ecosystem in Cycle II.



**Figure 5.** Results of Learning Activities in Cycle II

Figure 5 provides an overview of the percentage of learning activities that occurred during the learning process. These findings indicate that all student learning activities have improved from the first meeting to the second meeting in Cycle II. In the first meeting, the attention activity and writing activity had percentages of 73.75% and 66.25% respectively, falling under the active category. The oral

activity and mental activity also increased and were categorized as active, with percentages of 71.25% and 68.75% respectively. In the second meeting, there was an increase in the attention activity by 10%, reaching a percentage of 83.75%, categorized as active. Meanwhile, the writing activity also increased by 16.25% to 82.5%, which still falls under the active category. The oral activity also increased by 15% to



86.25%, categorized as active. The mental activity also increased by 18.75% to 87.5%, falling under the active category. It can be concluded that the overall results of the learning activities indicate an improvement in learning activities, which are now being carried out actively.

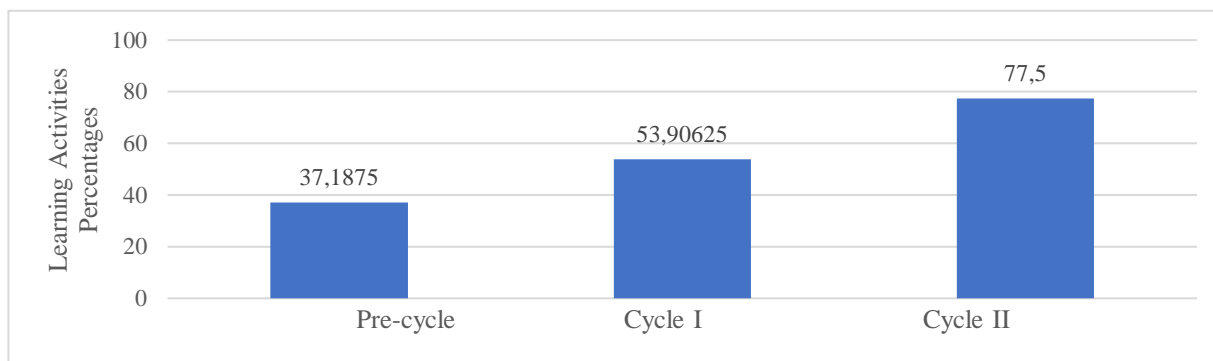
#### d. Reflection

The teacher successfully addressed the shortcomings identified in the previous actions, and the students actively participated in classroom learning. Student learning activities became important and were evident in every Social Emotional Learning process. The teacher's ability to organize learning time has improved. The teacher has also been successful in providing motivation and apperception to the students. Furthermore, the teacher has been able to follow the learning steps outlined in the teaching module. The teacher has provided sufficient opportunities for students to engage in discussions and ask questions. The teacher's skills in providing guidance, direction, and motivation to the students, especially those who

face difficulties during the science play activities, have been quite good. This has helped improve the students' social-emotional aspects, such as caution, patience, responsibility, independence, maintaining enthusiasm, and collaboration within groups.

The implementation of Social Emotional Learning becomes more meaningful when students engage in discussions in an enjoyable manner. Especially when the teacher appreciates and acknowledges the students, such as praising them and saying "good job" when they successfully answer questions and make presentations. This motivates the students to strive for excellence. The overall observation results indicate that children are more enthusiastic and happy during the implementation of Social Emotional Learning, as it encourages positive improvement in learning activities and will be beneficial to them as adults in facing various challenges in life.

The summarized comparison of the overall average learning activity results in the pre-cycle, cycle I, and cycle II is presented in detail in Figure 6.



**Figure 6.** Summary of Comparison of Learning Activity Results

Based on Figure 6, which includes the scores of student learning activities before (Pre-Cycle) and after (Cycle I and Cycle II) the implementation of Social Emotional Learning. The analysis results indicate a significant improvement in student learning activities after the implementation of Social Emotional Learning. The percentage of average scores for student learning activities increased significantly from 37.1875% before the implementation (Pre-Cycle) of Social Emotional Learning to 53.90625% after the implementation of Cycle I of Social Emotional Learning, and further increased to 77.5% after the implementation of Cycle II of Social Emotional Learning. This

indicates that the effective implementation of Social Emotional Learning enhances student learning activities in studying ecosystem subjects.

Through observation and reflection, it was found that the implementation of Social Emotional Learning has led to positive changes in the social and emotional aspects of students (Cojocar, S., 2023). Students have shown improvement in their communication skills, harmonious group work, and effective emotional management. Additionally, students have demonstrated increased motivation to learn, self-confidence, and active engagement in discussions and learning activities (Borowski, T., 2019). By

employing this method, students can also develop their social and emotional skills through interactions with group members from diverse backgrounds. The communication established within the learning group allows students to understand each other, appreciate differences, and collaborate in problem-solving (Iaosanurak et al., 2015).

Furthermore, the use of digital media such as animations, mind maps, or films can enhance learning activities, motivating students and providing enjoyable learning experiences (Borowski, T., 2019). The implementation of SEL through learning groups and digital media is an effective approach to improving student learning activities and creating a positive learning environment (Rahmawati, S., & Dadi, D., 2020). Based on the research findings, it can be concluded that Social Emotional Learning has significant potential in enhancing student learning activities in the subject of ecosystem. Integrating the principles of Social Emotional Learning into ecosystem learning provides a holistic learning experience and strengthens Social-emotional relationships within the classroom. Through the implementation of Social Emotional Learning, students feel more connected to the subject matter, develop important social skills, and have more meaningful learning experiences (Jagers, R. J. et al., 2019). In addition to improving learning activities, the implementation of Social Emotional Learning also has positive impacts on students' social and emotional aspects. Students show improvement in communication skills, group collaboration, and emotional management (Alexander, K., & Vermette, P., 2019). They also exhibit increased self-confidence and intrinsic motivation in learning. This demonstrates that Social Emotional Learning can assist students in developing important social and emotional skills in the context of ecosystem learning.

According to the report "CASEL and Committee for Children Host Congressional Briefing on SEL and Employability Skills," social and emotional learning curricula teach self-awareness, self-management, social awareness, relationship skills, and responsible decision-making, enabling students to manage their behavior, understand and relate to others' perspectives, and make good personal and social choices (Alexander, K., & Vermette, P., 2019). These findings have important implications in the field of education. Increased student learning

activities can contribute to their improved understanding and academic achievement in the subject of ecosystem. Additionally, the development of students' social and emotional aspects has long-term effects in shaping their mental well-being, healthy interpersonal relationships, and readiness to face challenges in the real world. Research shows that the skills taught in social and emotional learning curricula have broad benefits and impact students' success in school, careers, and life.

## CONCLUSION

According to the discussion above, it can be concluded that the implementation of Social Emotional Learning effectively improves students' learning activities in the topic of ecosystems for 10th grade at Senior High School 2 Palembang. The percentage of students' average learning activity scores significantly increased from 37.1875% before the implementation (Pre-cycle) of Social Emotional Learning to 53.90625% after the implementation of Cycle I of Social Emotional Learning, and further increased to 77.5% after the implementation of Cycle II of Social Emotional Learning. Through the integration of Social Emotional Learning principles in the learning process, students can develop social skills, manage emotions, and actively engage in learning.

## ACKNOWLEDGMENTS

Acknowledgments to Senior High School 2 Palembang and Sriwijaya University for hosting this research. So that this research can be carried out.

## REFERENCES

- Alexander, K., & Vermette, P. (2019). Implementing social and emotional learning standards by intertwining the habits of mind with the CASEL competencies. *Excelsior: Leadership in Teaching and Learning*, 12(1), 4.
- A.M, Sardiman. (2014). *Interaksi dan Motivasi Belajar Mengajar*. Jakarta: PT. Rajawali Pers.
- Aminoto, T., & Pathoni, H. (2014). Penerapan Media E-Learning Berbasis Schoology Untuk Meningkatkan Aktivitas dan Hasil Belajar Materi Usaha dan Energi di Kelas

- XI SMA N 10 Kota Jambi. *Jurnal Sainmatika*, 8(1), 13–29.
- Anggreiny, G. I., Aseptianova, & Nawawi, S. (2020). Analisis Aktivitas Belajar Siswa Kelas X pada Mata Pelajaran Biologi di SMA Negeri 10 Palembang. *Jurnal Mangifera Edu*, 4, 157–166. <https://doi.org/https://doi.org/10.31943/mangiferaeduv4i2.55>
- Arieny, M., Tibrani, M. M., & Santri, D. J. (2021) Students' Learning Outcomes and Activities: The Use of Video Conference during COVID-19 Pandemic. *Bioedukasi: Jurnal Pendidikan Biologi*, 14(2), 102-112.
- Astuti, I. D., Toto, T., & Yulisma, L. (2019). Model Project Based Learning (PjBL) terintegrasi STEM untuk meningkatkan penguasaan konsep dan aktivitas belajar siswa. *Quagga: Jurnal Pendidikan Dan Biologi*, 11(2), 93-98.
- Azizi, A., & Irwansah, I. (2020). Pengaruh Metode Role Playing terhadap Hasil Belajar Kognitif Ditinjau dari Aktivitas Belajar Siswa. *Bioscientist: Jurnal Ilmiah Biologi*, 8(2), 229-235.
- Borowski, T. (2019). *CASEL's framework for systemic social and emotional learning. Measuring SEL: Using Data to Inspire Practice*, 8, 1-7.
- Cojocar, S. (2023). Transformative Social and Emotional Learning (T-SEL): The Experiences of Teenagers Participating in Volunteer Club Activities in the Community. *International Journal of Environmental Research and Public Health*, 20(6), 4976.
- Dermody, C. M., Dusenbury, L., Greenberg, M., Godek, D., Connor, P., Cross, R., ... & Bridgeland, J. (2022). A Developmental Framework for the Integration of Social and Emotional Learning and Career and Workforce Development. *Collaborative for Academic, Social, and Emotional Learning*.
- Husni, H. (2020). The Effect of Inquiry-based Learning on Religious Subjects Learning Activities: An Experimental Study in High Schools. *Jurnal Penelitian Pendidikan Islam*, 8(1), 43-54.
- Iaosanurak, C., Chanchalor S. & Elizabeth M. (2015). Social and emotional learning around technology in a cross-cultural, elementary classroom. *Educ Inf Technol* DOI 10.1007/s10639-015-9406-4.
- Jagers, R. J., Rivas-Drake, D., & Williams, B. (2019). Transformative social and emotional learning (SEL): Toward SEL in service of educational equity and excellence. *Educational Psychologist*, 54(3), 162-184.
- Mahoney, J. L., Weissberg, R. P., Greenberg, M. T., Dusenbury, L., Jagers, R. J., Niemi, K., ... & Yoder, N. (2021). Systemic social and emotional learning: Promoting educational success for all preschool to high school students. *American Psychologist*, 76(7), 1128.
- Nurmala, D. A., Tripalupi, L. E., & Suharsono, N. (2014). Pengaruh Motivasi Belajar dan Aktivitas Belajar terhadap Hasil Belajar Akuntansi. *Jurnal Pendidikan Ekonomi Undiksha*, 4(1), 1–10.
- Poondej, C., & Lerdpornkulrat, T. (2016). The development of gamified learning activities to increase student engagement in learning. *Australian Educational Computing*, 31(2).
- Pourghorban Goorabi, F., Babakhani, N., & Lotfi Kashani, F. (2022). Effectiveness of Collaborative for Academic, Social, and Emotional Learning (CASEL) on Internalizing and Externalizing Emotional and Behavioral Problems and Academic Performance of Male Elementary School Students. *Journal of Applied Psychological Research*, 12(4), 379-398.
- Rahmawati, S., & Dadi, D. (2020). Pengaruh penerapan model pembelajaran kooperatif tipe index card match terhadap aktivitas dan hasil belajar siswa pada konsep komponen ekosistem. *Bioed: Jurnal Pendidikan Biologi*, 7(1).
- Rosiana, K. Y., Margiati, & Halidjah, S. (2012). Peningkatan Aktivitas Belajar Siswa Menggunakan Metode Inkuiri Pada Pembelajaran Ilmu Pengetahuan Alam. *Jurnal Pendidikan Dan Pembelajaran*, 1(1), 1–10.
- Styfanyszyn, I., & Yurko, N. (2020). The implementation of the social and emotional training into the modern educational environment. *Primedia eLaunch LLC*, 4-13.
- Saputri, W. E., & Sikumbang, D. (2019). Pengaruh Inkuiri Terbimbing Berbantu Jurnal Belajar Terhadap Aktivitas dan

- Hasil Belajar Kognitif. *Jurnal Bioterdidik: Wahana Ekspresi Ilmiah*, 7(4), 33-43.
- Sudaryono. (2016). *Metode Penelitian Pendidikan (Edisi I)*. Jakarta: Kencana.
- Sugiyono. (2017). *Metode Penelitian Kuantitatif, kualitatif dan R&D*. Bandung: Penerbit Alfabeta.
- Tanjung, I. F., & Tambunan, E. P. S. (2022). Pengaruh Model Pembelajaran TAI terhadap Aktivitas dan Hasil Belajar Siswa Kelas X di MAS Nurul Hakim. *Ruang-ruang Kelas: Jurnal Pendidikan Biologi*, 2(1), 87-95.
- Zuriah, N., & Rahmandani, F. (2021). Analysis of online learning implementation and student learning activities in the Covid-19 pandemic era and its problems. *In 1st International Conference on Character Education (ICCE 2020)*(pp. 167-176). Atlantis Press.