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Good-by Learning Journal : Strengthening Metacognitive Skills in OIDDE Learning Model

by Artikel 6

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Good-by Learning Journal: Strengthening Metacognitive Skills in OIDDE Learning Model

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ABSTRAK

Pemberdayaan keterampilan metakognitif siswa perlu dilakukan dengan membiasakan siswa berpikir tingkat tinggi. Tujuan penelitian ini adalah untuk menganalisis pengaruh penerapan jurnal pembelajaran dalam model pembelajaran OIDDE terhadap keterampilan metakognitif siswa. Jenis penelitian yang digunakan adalah eksperimen semu. Jenis penelitian ini adalah eksperimen semu dengan pendekatan kuantitatif. Pengambilan sampel menggunakan non-probability sampling dengan kelas kontrol dan kelas eksperimen yang berjumlah 58 siswa. Pengumpulan data menggunakan teknik tes non tes, observasi, dan dokumentasi. Data hasil belajar dianalisis menggunakan tes ANCOVA satu arah. Data keterampilan metakognitif dianalisis secara deskriptif. Hasil penelitian menunjukkan keterampilan metakognitif siswa di kelas eksperimen menunjukkan tingkat keterampilan perencanaan sebesar 42%, pemantauan sebesar 56%, dan evaluasi sebesar 56%. Oleh karena itu, perlu membiasakan siswa dengan mengatur proses berpikir, menyadari berbagai jenis kemungkinan berpikir, dan merefleksikan kemampuannya untuk berpikir dalam pembelajarannya sendiri.

ABSTRACT

Students' metacognitive skills need to be empowered by learning to think at higher levels. This study aimed to analyze the effect of the application of learning journals in the OIDDE learning model on students' metacognitive skills. The type of research used is quasi-experimental. This type of research is quasi-experimental with a quantitative approach. Sampling used non-probability sampling with control and experimental classes involving 58 students. Data collection uses non-test, observation, and documentation test techniques. The results of learning data were analyzed using a one-way ANCOVA test. Metacognitive data skills were analyzed descriptively. The results showed that the students' metacognitive skills in the experimental class showed a level of planning skills of 42%, monitoring of 56%, and evaluation of 56%. Therefore, it is necessary to learn to organize learning, be aware of different types of thinking possibilities, and think in their own learning.

1. INTRODUCTION

Metacognitive skills are still a shortage of students in learning activities, unfortunately student learning activities have not fully provided the opportunity to increase awareness of metacognitive skills which play an important role in controlling the success of their learning (Moll-Khosrawi et al., 2021; Sukaisih & Muhali, 2014). Through metacognitive students will involve their awareness to think and act in accordance with their knowledge or cognitive (Khoiriah, 2015; Mursali, 2015). Metacognitive has a role in controlling student cognitive activity (Fathonah et al., 2016; Siregar et al., 2017). However, not all students are able to maximally control their awareness of their own cognitive processes. Teaching in the classroom the teacher is still oriented towards delivering material to understand content without giving students the opportunity to develop their metacognitive abilities (Corebima, 2016; Dewi et al., 2018). The tendency of students to learn by memorizing concepts, facts, theories or laws results in a lack of in-depth understanding of the substance of the material that has been studied, so it is necessary to be directed to understand the meaning they are learning (Binali et al., 2021; Vermunt & Donche, 2017). In the end students have difficulty activating or using metacognitive in the learning process. This shows that students do not have awareness of the learning process, so they find it difficult to activate their metacognitive abilities. Students who do not

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have an awareness of how they learn, actually they still do not think metacognitively and do not know the implementation strategy, so that it has an impact on students' low understanding (Tachie, 2019; Zheng et al., 2019). If students are able to understand how they learn, these students have thought metacognitively and used metacognitive skills in learning.

Metacognitive skills besides playing an important role in regulating the control of cognitive processes are also the basis for independent learning, so that learning activities become more effective and efficient (Adiansyah et al., 2021; Royanto, 2012). Metacognitive skills allow students to develop into independent learners because it encourages them to become regulators of themselves and assessors of their own thinking and learning (Backer et al., 2021; Wesiak et al., 2014). However, looking at the facts at school, it was found that the learning methods used were still using the lecture method and the blackboard so that learning was still not student centered. Implementing a learning process like this it will make students often silent and only listen and record the results of explanations from the teacher (Kalaga & Setiawan, 2018). When students only listen, this will make students tend to be passive, not independent and do not use their metacognitive skills in learning.

Based on the results of preliminary studies conducted by researchers through observation activities on learning Biology, problems were found, among others, that student learning outcomes in Biology subjects were not optimal. In addition, it was also found in the learning process that students' learning preparation was still lacking in learning the material to be studied, students seemed not to show any independence. In learning, students are still waiting for instructions or directions from the teacher. Then the learning method used is still using the lecture method, certain assignments that are still not optimal in directing learning high-order thinking skills. In addition, the results of the preliminary study through the metacognitive skills test showed that the average results of students' metacognitive skills were categorized as students who were unable to separate what they thought from how they thought "not really". Then based on the results of interviews with subject teachers, he explained that teachers still have difficulty in conveying abstract material and providing stimulus has not been optimal in improving students' thinking skills.

During the learning process, students sometimes enjoy chatting with their classmates and playing alone with their friends, means that there is something less interesting with the learning. Metacognitive awareness will appear if students know what is needed in their learning activities, it's just that students are often distracted by other things, for example, low learning motivation (Adiansyah et al., 2021; Fathonah et al., 2016; Sihaloho et al., 2018). If learning only focuses on student worksheets and textbooks and the delivery of material is only the lecture method, question and answer students feel they are not developing their thinking skills and will feel bored quickly, passively, waiting for directions and even difficult to accept the material. The use of lecture methods in the learning process does not attract students so students do not understand the material presented and student learning motivation decreased (Khoiriah, 2015; Puspitarini & Hanif, 2019; Sukaisih & Muhali, 2014). So teachers here need learning facilities or There are learning aids that can improve student learning outcomes and metacognitive skills. Previous research related to metacognitive skills has been conducted with the result that metacognitive skills show a positive relationship with learning outcomes (Sihaloho et al., 2018), even a significant relationship between metacognitive skills and learning outcomes (Yasir et al., 2020), and an increase in metacognitive skills. with the application of learning models (Kalaga & Setiawan, 2018; Siregar et al., 2017; Sukaisih & Muhali, 2014). Furthermore, there was an increase in students' metacognitive skills after implementing learning strategies (Khoiriah, 2015; Wicaksono, 2014).

Various studies related to improving metacognitive skills and learning outcomes with learning strategies and learning models have been reported, however the development of assessments of metacognitive skills was found in different forms. Rewriting the learning experience independently can increase metacognitive awareness by applying it to a study journal (Cer, 2019; Nurajizah et al., 2018). A learning journal is a metacognitive thinking strategy in the form of notes on the results of self-reflection written after the end of learning ((Panggayuh, 2017; Wahdah et al., 2016). The advantage of writing a learning journal is that students will get used to controlling their learning and involve themselves by studying reflection, then become more active, acknowledging responsibility (Nurajizah et al., 2018). The next advantage is that writing a learning journal can train students 'thought processes which are closely related to students' ability to solve problems, make decisions, determine learning techniques that are suitable for them (Fathonah et al., 2016; Roediger et al., 2011). Various studies that have been carried out on learning journals, there are drawbacks, namely the applied learning journals have not shown a systematic student thinking process (Fathonah et al., 2016; Nurajizah et al., 2018).

The use of appropriate methods can increase efficiency and effectiveness in teaching so that it has an impact on student learning outcomes and metacognitive skills (Basri, 2018; Fadlelmula et al., 2015). The learning process that takes place should be able to provide opportunities for students to consciously

construct their own knowledge, and students must actively construct their knowledge based on their cognitive maturity (Fasha et al., 2018; Siegler & Pyke, 2013). The learning strategies applied by the teacher are less able to increase students' awareness in managing thought processes. Based on the problems that have been described, researchers feel the need to answer them by carrying out appropriate and effective learning through the OIDDE learning model. This Instructional model was developed by Atok Miftachul Hudha, he is lecturer of Biology Education Department, Faculty of Teacher Training and Education, Universitas Muhammadiyah Malang. The OIDDE (Orientation, Identification, Discussion, Decision, Engage in behavior) (Hudha et al., 2016).

The OIDDE model is a modification of two learning models; namely the behavioral system and tripakor (Akbar, 2013; Joyce & Weil, 1978). Learning model is effective and practical to answer learning needs that raise moral and ethical issues. In addition, OIDDE learning model is able to answer the demands of 21st century competencies that require humans to have the ability to solve problems, think critically and behave ethically (ethical behaviour) (Hudha et al., 2016). The opportunity for students to develop metacognitive skills is facilitated throughout the syntax. First, the orientation phase provides students with opportunities to manage information based on the problem of ethical dilemmas of an issue. Second, the identification phase, students are expected to be able to find and examine the facts of the causes and the synthesis of the problem, and choose priority issues to be given alternative solutions. Third, Discussion phase, students collaborate in finding alternative solutions based on roles in everyday life and presented through data. Fourth, Decision, students determine ethical attitude decisions based on individual or group issues. Fifth, The phase of engaging in behavior, students take real action from ethical decisions that have been determined within a certain time (Hudha et al., 2016; Husamah et al., 2018b).

Metacognitive skills expect students to focus on the ability to construct knowledge. Why OIDDE is used as an alternative learning model, because the OIDDE stage focuses on the direct involvement of participants in behavior, after getting various learning experiences. Supported by previous research that the OIDDE learning model is able to improve students' metacognitive skills in the aspect of critical thinking skills (Hudha et al., 2016; Husamah et al., 2018b). In this regard, a study was conducted which aims to determine the effect of the application of learning journals in the OIDDE learning model on student learning outcomes and to describe metacognitive skills in the application of learning journals in the OIDDE learning mode.

2. METHOD

This type of research is a quasi-experiment with a quantitative approach, the research subjects were students of class VIII which consisted of two classes with a total of 58 students. The sampling technique used non-probability sampling by random sampling, because the characteristics of the students were homogeneous. The research sample consisted of; Class VIII-A as the control class totaled 26 students and class VIII-B as the experimental class amounted to 26 students. The research design was a non-equivalent pre-test and post-test control group design. In the experimental class, it was carried out by implementing learning journals in the OIDDE learning model, while in the control class using the presentation discussion method (conventional). The results of the pre-test and post-test of the two classes were compared to see the effect of the application of learning journals in the OIDDE learning model. Instruments of the application of learning journals in the OIDDE learning model in Table 1.

Table 1. Sub-Category of Metacognitive Skills Assessment Through Learning Journals

No	Sub Categories of Metacognitive Skills	Metacognitive Skills Indicator (Expert Judgment Results)
1.	Planning	1. State the purpose/problem given
		2. Design the steps for solving the given problem/task
		3. Identify and mention references and information needed to solve problems/tasks
		4. Designing what to learn/do when getting a problem/task
2.	Monitoring	1. Checking the difficulty between the goal in solving the problem with the material that has been studied
		2. Analyze information that is important in solving the problem/task given
		3. Identify the difficulties in solving the problem/task given
		4. Deciding ways to overcome difficulties in solving the given task

No	Sub Categories of Metacognitive Skills	Metacognitive Skills Indicator (Expert Judgment Results)
3.	Evaluation	1. Assess goal achievement 2. Explore and interpret data 3. Identify the sources of errors from the data obtained 4. Using a different procedure/way to solve the problem 5. Using the same procedure/method for other/different problems

Data collection techniques used includes test, non-test, observation, and documentation techniques. The test technique uses essay questions with the aim of knowing the cognitive learning outcomes of students in the domains of C3 (application), C4 (analysis) and C5 (evaluation). Making essay questions based on basic competencies and indicators of learning material. The results obtained are then interpreted in the form of categories or scales which in Table 2.

Table 2. Category of Learning Outcomes

Value Range	Category
80 – 100	Very good
70 – 79,99	Good
60 – 69,99	Enough
50 – 59,99	Lees
0 – 49,99	Very Less

(Fitri et al., 2017)

This non-test technique is given in the form of filling out learning journals by students to find out students' metacognitive skills in the experimental class. The results obtained are calculated the scores then interpreted using categories in Table 3.

Table 3. Categories of Metacognitive Skills

Categories	Scale	Description
Not yet	00 – 16	Has not been disclosed/leads to metacognitive.
At risk	17 – 33	It appears that there is no awareness of thinking as a process.
Not really	34 – 50	Not able to separate what is thought from how he thinks.
Developing	51 – 67	Can help lead to self-awareness thinking if encouraged and supported.
Ok	68 – 84	Conscious of thinking for himself and able to distinguish the stages of input-elaboration-output of his own thoughts. Sometimes he uses models to organize his own thinking and learning.
Super	85 – 100	Using metacognitive awareness on a regular basis to regulate his own thinking and learning processes. Being aware of many different kinds of thinking possibilities, being able to smoothly use and reflect on his thought processes.

(Amrulloh & Ardhi, 2017)

The results of the metacognitive skills data were then analyzed descriptively. Then the observation technique is carried out in the learning process in order to see the implementation of the OIDDE learning model. The test instrument used to retrieve data has been tested for validity and reliability. The validation used in this study includes construct validity and content validity. The validity test of the instrument is measured through the opinions of experts. The questions were then tested and then tested for validity and reliability. The validity test used the product moment correlation technique with the Pearson correlation coefficient ($\alpha = 0.05$). Reliability test used Alpha Cronbach formula ($\alpha = 0.05$). The results of the analysis show that the instrument is valid and reliable. Hypothesis testing used is the one way ANCOVA hypothesis test ($\alpha = 0.05$), to test the significance of the effect of the application of learning journals in the OIDDE learning model on student learning outcomes.

3. RESULT AND DISCUSSION

Result

Based on the research data, it was found that the mean pre-test learning outcomes in the control and experimental classes were 52.3 and 50.5. Meanwhile, the post-test learning outcomes in the control and experimental classes were 61.9 and 71.2. Comparison of student learning outcomes is presented in Figure 1. In addition to the learning outcome data, the data on learning completeness in the control and experimental classes based on the pre-test and post-test are presented in Table 4.
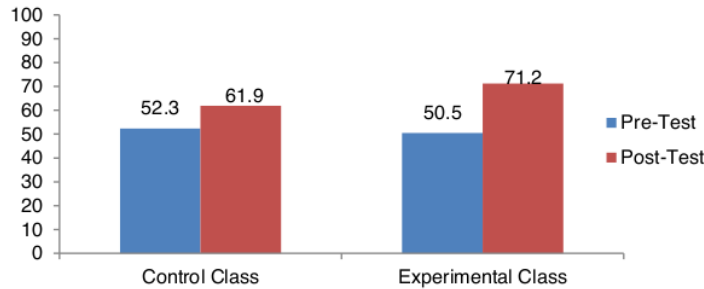
Figure 1. Comparison of Student Learning Outcomes

Table 4. Percentage Completeness of Student Learning Outcomes Data

Class	Pre-test		Post-test		Total Students
	Complate (%)	Not Complate (%)	Complate (%)	Not Complate (%)	
Control	0 (0%)	26 (100%)	6 (23%)	20 (77%)	26
Experiment	1 (5%)	25 (95%)	13 (50%)	13 (50%)	

Completeness of student learning outcomes based on the pre-test in the control class by 0% or none of the students had complete learning. Whereas in the experimental class the completeness of student learning outcomes was 5% or there was only 1 child who experienced complete learning. Both of these data indicate that, the learning outcomes obtained before the learning is carried out, experience very low completeness or have not met the KKM standard, namely 75. The data on the completeness of learning outcomes based on post-test in the control class is 23% or as many as 6 students who have completed study. Whereas in the experimental class, the completeness of student learning outcomes was 50% or as many as 13 students who had completed learning. Both of these data indicate that there is an increase in the amount of completeness in the two classes and the number of student learning outcomes in the experimental class is higher than the control class. Based on the results of hypothesis testing using one way ANCOVA, it shows that the group's significant value is smaller than the significant level of 0.004 < 0.05, then H_0 is rejected so H_1 is accepted. This means that there is an effect of implementing learning journals through the OIDDE learning model on improving student learning outcomes as shown in Table 5.

Tabel 5. The Results of the Ancova Test

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1300.270[a]	2	650.135	4.957	.011
Intercept	8735.522	1	8735.522	66.604	.000
nilai_pretest	192.578	1	192.578	1.468	.231
Kelompok	1173.544	1	1173.544	8.948	.004
Error	6426.653	49	131.156		
Total	237950.000	52			
Corrected Total	7726.923	51			

Based on the hypothesis test using the ANCOVA test, it shows a significant effect on improving learning outcomes. So here it is necessary to carry out further tests to find out which treatment has the most effect on improving learning outcomes. The further test used the LSD test with the test criteria that the significant value was less than the significant level (0.05), then H_0 was rejected and H_1 was accepted. The highest learning outcomes are in the post-test experimental class and are significantly different from others. The data on the results of metacognitive skills based on learning journals in the experimental class can be seen in Table 6.

Table 6. The Results of the Metacognitive Skills Based on the Learning Journal in the Experimental Class

Data	Scale	Category
The highest score	83,3	*OK*
Lowest value	25,0	*At Risk*
Average	51,3	*Developing*

Table 6. shows that the average metacognitive skill scale is 51.3 (developing) with the highest score of 83.3 and the lowest score of 25.0. The developing category shows that metacognitive skills can help lead to self-awareness if encouraged and supported. The data for assessing students' metacognitive skills consists of 3 sub-indicators, namely (1) planning skills, (2) monitoring skills, and (3) evaluation skills which can be seen in Table 7.

Table 7. The Percentage of Metacognitive Skills Results Based on Learning Journals in the Experimental Class

Category	Total Student	Score		
		Planning	*Monitoring*	*Evaluation*
OK	3	6	12	10
Developing	6	12	18	17
Not really	12	20	23	23
At risk	5	6	5	8
Total	26	44	58	58
Percentage		**42%**	**56%**	**56%**

Table 7. shows the results of metacognitive skills seen based on the results of writing learning journals in the experimental class showing planning skills by 42%, monitoring skills by 56%, and evaluation skills by 56%. The syntax implementation data based on the observation sheet filled out by the science subject teacher on the observation of the online learning process. The overall performance was good with a percentage of 72%. While the level of student activity in the learning process in the experimental class includes the criteria for active students with a percentage of 64%. In the control class, the teacher only gives certain learning modules and assignments to students through students' WhatsApp groups. This shows that in the control class there is no deeper explanation process regarding the subject matter taught by the teacher to his students. It's just that the teacher provides opportunities for students to ask questions about material that has not been understood through the modules provided. The level of student activity can be seen from their initiative to ask questions and respond by saying thank you in class groups.

Discussion

The application of learning journals in the OIDDE learning model that has been described in the research results shows a significant effect. Research findings indicate that the application of learning journals can provide a deep understanding of the material that has been taught, because students are able to rewrite the material according to the understanding that has been achieved. This understanding is obtained by students through repetition and expansion of material explanations and exploration of personal experiences written in study journals. Writing a learning journal allows students to repeat the material they have learned, expand ideas or relate ideas to prior knowledge, and explore their internal experiences (Guo & Huang, 2018; Hidayati et al., 2018). With learning journals, students become independent learners who can find effective learning strategies to improve achievement (Munawaroh et al., 2016; Wahdah et al., 2016). So that the findings in this study are evidence of learning using learning journals can be an alternative to improve students' understanding of material concepts.

In addition, the OIDDE learning model that is applied is thought to be able to increase students' understanding through strengthening the ethical considerations they get in learning (Hudha et al., 2018).

The students' understanding ability gained can help them in choosing the most appropriate answer (Husamah et al., 2018). This ethical emphasis on the OIDDE learning model can give students the opportunity to explore and evaluate the opinions of others which they then compare with their own (Hudha & Husamah, 2019; Husamah et al., 2018b). The selection of the right learning model can train students in logical, analytical, evaluative and creative thinking (Amrulloh & Ardhi, 2017). This encourages students' metacognitive abilities to develop by themselves and makes it easier for them to complete tasks or problems.

Apart from the data on student learning outcomes that have increased, it can be seen in the number of complete student learning outcomes in each class that also increases. Although it is not 100% complete, it has shown that there are differences between the two classes. In the control class the number of student learning outcomes obtained is lower than the experimental class. This happens because in the experimental class the OIDDE learning model is applied which can improve student learning outcomes. Through the OIDDE learning model students are directed to be problem-oriented, identify problems, conduct group discussions to solve problems, take ethical decisions regarding ethical matters on the issues discussed, and behave ethically. on the ethical decisions that have been made (Hudha et al., 2016; Husamah et al., 2018a). These findings prove that the OIDDE learning model is able to improve learning outcomes, especially cognitive and metacognitive, because the application of this learning model can create deep meaning in learning by increasing understanding abilities and developing problem solving skills, argumentation skills in improving students' metacognitive skills.

Based on the findings of the research, it shows that students in learning proses are not accustomed to reasoning and managing information systematically, but students are able to consciously respond to answers in the form of concepts from everyday experience. This can be happens because students are able to recall authentic learning experiences and evaluation by self. So that there is metacognitive potential for students to develop in line with their learning experiences. The ability to plan, self-regulate and evaluate the learning process can make students have deep meaning for what is learned, so that they can complete tasks well (Sangsawang, 2020; Wahdah et al., 2016). In addition, through the syntax stages of the OIDDE learning model, it is suspected that it can encourage students' metacognitive skills. This syntax encourages students to learn integrated to increase knowledge and be able to apply knowledge according to their experiences in everyday life. Thus, it is necessary to always be empowered so that metacognitive skills develop properly. Based on the category of metacognitive skills, the results of students' metacognitive skills are interpreted in the developing category (Amrulloh & Ardhi, 2017). This shows that students' metacognitive skills can help towards self-awareness if they are encouraged and supported. The more often students are aware of their thinking processes while studying, the more they will be able to control their goals, personality, and attention (Ardila et al., 2013).

The carrying capacity of students' metacognitive skills appears in learning in the form of factual thinking (Fasha et al., 2018; Panadero, 2017; Sukowati & Rusilowati, 2016). This arises when students are able to rewrite various important concepts written in their study journals. That is, when students are given the opportunity to write or rearrange systematic thinking based on information obtained during the learning process, it can activate awareness of thinking in depth on the various knowledge they have obtained. Recasting the systematics think based on information obtained during the learning process in the Learning Journal provides the opportunity for students to think of factual, this is facilitated in each stages of OIDDE. At the Discussion stage, students directly use their experience and knowledge to find alternative solutions and actions for themselves and others (Lailiyah & Wulansari, 2017; Tambak et al., 2020; Wuarlela, 2020). At the Decision stage, students are conditioned to make problem-solving decisions. Furthermore, at the Engage in behavior stage, it requires students to behave as verbally determined decisions. These five stages make the metacognitive skill increase significantly. Metacognitive skills require students to understand problems, plan settlement strategies, make decisions about what to do and to implement decisions (Adiansyah et al., 2021; Mas'ud et al., 2018; Popandopulo et al., 2021). This requires students to evaluate every possible error, solve learning problems independently and divert efforts to achieve success.

Based on the findings, there are several factors that can cause the results of students' metacognitive skills in learning journals to be not optimal. The problem arises due to; first, students are not used to writing learning journals. According to states that students' habits in writing study journals can cause differences in students' metacognitive abilities. Second, lack of understanding of self-reflection in study journals. Third, learning journals have not fully facilitated the improvement of metacognitive skills. Fourth, the delivery of information about learning journals that have not been optimal by the teacher so that students experience this In line, the effect of increasing the ability to write learning journals can be influenced by three things, namely the law of readiness, the law of consequence and the law of practice (Wahdah et al., 2016). Not giving students the opportunity to reflect on their own learning experience can result in students being insensitive to what their strengths and weaknesses are, especially the learning process (Kristiani et al.,

2015; Setiawan & Susilo, 2015). Through this deep way of thinking, it can help students to understand the material further (Kavousi et al., 2019; Siregar et al., 2017). Why do learning journals sometimes still don't meet students' metacognitive skills?, because the instruments/components in the learning journals developed are not in accordance with the students' thinking level (Nurajizah et al., 2018; Setiawan & Susilo, 2015) So that it appears that students have not carried out the self-reflection that is requested according to the learning journal, so that the answers written by students are still few that lead to indicators of metacognitive skills. However, by looking at the effectiveness of the application of learning journals, learning journals are still feasible to be used as tools to empower and improve students' metacognitive skills.

The metacognitive skills provide opportunities for students to consciously thought and their appearance requires the initiative of learning independence. Metacognitive skills are able to lead to higher-order thinking skills that can control their own learning (Mas'ud et al., 2018; Panggayuh, 2017). This encourages students to be able to plan how to complete the given task, monitor understanding, and evaluate their cognitive development. Students who have high metacognitive skills are better able to show achievement than students with low metacognitive skills (Ardila et al., 2013; Kristiani et al., 2015). Therefore, it is important that all students have and develop metacognitive skills that can be used in their daily lives. Learning through classroom subjects can be improved through the application of the OIDDE learning model (Husamah et al., 2018b). It is undeniable that this research still has limitations, this is due to the number of learning activities that still need to be added. Based on the findings, students are not used to making and working on learning journals after learning activities. The author believes, if there is more retention, students will be more accustomed to using learning journals as the learning experience increases. Meanwhile, in implementing the OIDDE learning model, especially for the "Engage in behavior" syntax, additional instruments are needed to monitor students' ethical activities in real life in everyday life. This research can be used as a learning alternative to improve students' metacognitive skills because of the students' independent activities in developing learning journals, especially in planning, monitoring, and evaluation activities.

4. CONCLUSION

There is an effect of the application of learning journals on the OIDDE learning model on student learning outcomes. Learning journals provide opportunities for students to manage the understanding as outlined in writing and do self-reflection for planned follow-up plans to improve learning independently. Therefore, it is necessary to familiarize students with increasing the number of meetings or cycles using learning journals and the OIDDE Learning model, so that students gain more experience and are able to organize thinking processes, realize various types of thinking possibilities, and reflect on their ability to think in their own learning.

5. ACKNOWLEDGEMENTS

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