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Improving Students' Ability in Writing Scientific Papers Through Process Approach

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Abstract*. One of the writing skills that must be mastered by intellectuals is writing scientific papers. The Indonesian curriculum covers all language skills, including writing. The curriculum is described in the Competency Standards and Basic Competencies (SK and KD) from elementary to high school levels. This study aims to determine the ability of students in class XII MIA 4 SMA Panca Budi in writing scientific papers that will be useful for continuing their education to the university level. This research was conducted as a solution offer that would guide these students to write using an approach, namely "Process Approach". The results showed a significant increase in the ability to write scientific papers. This is proven by the movement of students' average writing scores from 63.10 during the pre-test, to 73.13 during the test in cycle 1 and increased again to 88.82 in the test in cycle 2. In other words, the process approach has been proven to be able to improve the ability to write scientific papers of students, especially students of grade XII MIA 4 SMA Panca Budi.*

Keywords*: Process Approach, Students of SMA Panca Budi, Writing Scientific Papers*

INTRODUCTION

Writing skill is one of the language skills besides reading, speaking, and listening. As a skill, writing cannot be obtained naturally but must go through a process of learning and practice. Writing activities are not just writing, but an activity that combines intellectual knowledge and logical thinking which is then followed by the selection of effective and communicative language to be expressed in written form. Doyin and Wagiran (2009: 12) stated that in writing activities, writers must be skilled in utilizing graphology, vocabulary, sentence structure, paragraph development, and language logic. For this reason, writing is often considered more difficult than other language skills.

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Nowadays writing has not become the interest and favorite of Indonesian children. Though writing skills are very important to master, especially for intellectuals. Gie (2002: 21) states that someone who does not have writing skills is like a bird whose wings lack one so that it cannot fly far and high to achieve the widest success in life. Writing skills are a very useful intelligence for everyone. By having that intelligence, a person can express his various ideas to be read by a wide audience.

One of the writing skills that must be mastered by intellectuals is writing scientific papers. The Indonesian curriculum covers all language skills, including writing. The curriculum is described in the Competency Standards and Basic Competencies (SK and KD) from elementary to high school levels. One of the basic competencies in the Indonesian curriculum is writing scientific papers given at the high school level.

This is the finding of the problem when observations and interviews were carried out on Indonesian subjects (sub-topic: writing scientific papers) for grade XII students of SMA Panca Budi Medan for the 2022/2023 academic year. It was found that their scores were very low at the beginning of learning as can be seen in the following table:

Table 1. List of Percentages between Plagiarism Checking on Class XII MIA 4 Scientific Paper Writing Assignments

No	Name	Value	Plagiarism Percentage
1.	Annisa Putri Aprilia	60	67%
2.	Ata Ul Hakim Damanik	70	24%
3.	Afarin Ramadhan	60	30%
4.	Adinda Annisa	60	33%
5.	Azzahra Tri Sedayu	50	50%
6.	Diva Salsabila	50	50%
7.	Kayla Putri Adnin	75	9%
8.	Kesya Launa	70	18%
9.	Khayila Nazwa Fierce	50	80%
10.	Marsya Aulia Efendi	60	50%
11.	Muhammad Faiz Azzam	50	50%
12.	Muhammad Al Jihad Fadillah	90	-
13.	Muthia Khairunnisa	40	100%
14.	Nazwa Athaya Aldi	0	0
15.	Najwa Aulya	85	-
16.	Nasywa Putri Adella	70	-
17.	Nabila Windi Sari	90	-
18.	Najwa Chairina	70	-
19.	Putri Berliana	50	25%
20.	Rafa Dwi Athaya	90	-

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21.	Rizky Abdiansyah	60	25%
22.	Rara Nadia	50	50%
23.	Sadewo Bagus Satrio	60	-
24.	Salsabila Diva	70	30%
25.	Shaqila Diva Rasyah	65	50%
26.	Sinchia Toevani	70	50%
27.	Tegar Abrar Prasetya	75	25%
28.	Triamanda Salsabila	60	-
29.	Wan Habibi Rabbani	70	-

From the evaluation of the assignment above, it was found that most students did not know what to write because they did not outline first, their essays did not focus on the given title, and there was no coherence between the paragraphs written.

These conditions are caused by several factors behind them. Low interest in reading textbooks, journals, and scientific papers is one of the factors causing the inability of students to write. Furthermore, they claim not to know how to write a scientific paper and where to start so they often write without direction and revolve around there. On the other hand, they are also chased by deadlines so it is not uncommon to find plagiarism as their choice. Moreover, with easy access to information and technology that exists today. So they just "copy-paste" (copy and paste) other people's writings on their essays without seeing and re-reading whether the explanations between sentences and between paragraphs are coherent or not.

LITERATURE REVIEW

Writing

According to Tarigan (1982: 21) writing is deriving or painting a graphic symbol that describes a language understood by someone so that others can read graphic symbols. Another definition of writing was put forward by Lado (in Suriamiharja, et al. 1997: 1) saying "To write is to put down the graphic symbols that represent a language one understands so that other can read these grapich representation. The quote can be interpreted that writing as placing graphic symbols that describe a language that is understood by someone, then can be read by others who understand the language and its graphic symbols.

In writing, there is a need for the complexity of activities to compile essays properly because it involves an orderly way of thinking and various requirements related to writing

techniques. These requirements are (1) the existence of unity of ideas; (2) the use of clear sentences; (3) paragraphs are well structured; (4) the application of correct spelling rules; (5) mastery of adequate vocabulary. Based on the description above, it can be defined that writing is a series of complex activity processes that require stages and pouring them into written form so that readers can understand the content of the ideas conveyed.

Scientific Work

Sudjana (2001: 21) states that scientific work is essentially a human product based on scientific knowledge, attitudes, and ways of thinking. This opinion is to the statement of Dewanto, et al (2007) which revealed that scientific work is an essay that contains scientific science and truth that presents facts and is arranged systematically according to writing methods using scientific variety language. This statement is reinforced by the opinion of Doyin and Wagiran (2009) that scientific essays are scientific essays that present general facts that can be proven true, presented according to good and correct writing methodologies, and use scientific variety language.

Imnis (2008) conveyed "scientific papers containing scientific reviews or reviews". The paper was compiled by someone who discussed 27 subjects as a result of the research. The preparation of written works is always equipped with reference materials that must be written according to the rules of writing. To add clarity, the author provides an overview in the form of a table as follows:

Table 2. Characteristics of Scientific Papers

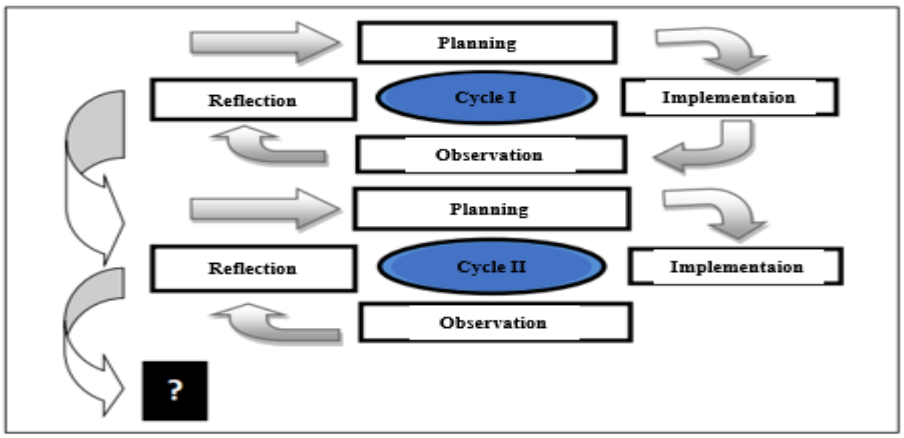
ASPECT	***ACADEMIC***	***NON - ACADEMIC***
Reader	*academics*	*Family and friends*
Content	*Serious thought*	*conversational*
Style	*Complex sentences showing considerable variation in construction*	*Mostly simple and compound sentences joined by a conjunctionsuch as and or but*
Organization	*Clear and well planned*	*Less likely to be as clear and as organized*
Grammar	*Likely to be error-free*	*May not always use complete sentences*
Vocabulary	*The technical and academic language used accurately*	*Use of short form, idioms, and slang*

Thus, scientific work can be concluded as an essay whose writing is bound by scientific rules, and systematic, and reveals a research result to answer problems that occur in society.

The stages in the process approach are proposed by Tomkins and Hoskisson. According to Tomkins & Hoskisson (2010: 52-65), the process approach is a writing learning with a series of five stages that describe what students think and do as they write; the five stages are prewriting, drafting, revising, editing, and publishing.

RESEARCH METHOD(S)

This research procedure is a Classroom Action Research (PTK) procedure that will be carried out by the research procedure designed by Khemmis and Mc. Taggart. The design is in the form of a cycle that does not only last once but can be up to several times until the learning objectives can be achieved. But the plan, this research will be carried out through two to three cycles. There are four stages that researchers will do in one cycle, namely: planning, action, observation, and reflection. The description of the cycle procedure is as follows:



Source: Kajianpustaka.com

Figure 1. Research Concept Framework

FINDINGS AND DUSCUSSION

This research was conducted at SMA Panca Budi Medan which is an educational partner of UNPAB. SMA Panca Budi is located at Jalan Gatot Subroto Km 4.5 Medan. The time in this study starts from October 2022 to January 2023. Within 2 months, the study was conducted through 2 cycles.

The overall results of student achievement from pre-test, cycle 1 to cycle 2 are as follows:

Table 3. Student Achievement Results from Pre-Test, Cycle 1 and Cycle 2

No	Name	Pre Test Scores	Post Test Value in Cycle 1	Post Test Value in Cycle 2
1.	Annisa Putri Aprilia	60	70	85
2.	Ata Ul Hakim Damanik	70	72	90
3.	Afarin Ramadhan	60	70	80
4.	Adinda Annisa	60	69	85
5.	Azzahra Tri Sedayu	50	70	85
6.	Diva Salsabila	50	65	90
7.	Kayla Putri Adnin	75	78	95
8.	Kesya Luana	70	75	95
9.	Khayila Nazwa Fierce	50	65	90
10.	Marsya Aulia Efendi	60	70	85
11.	Muhammad Faiz Azzam	50	70	95
12.	Muhammad Al Jihad Fadillah	90	92	98
13.	Muthia Khairunnisa	40	50	75
14.	Nazwa Athaya Aldi	0	50	75
15.	Najwa Aulya	85	90	95
16.	Nasywa Putri Adella	70	80	90
17.	Nabila Windi Sari	90	95	97
18.	Najwa Chairina	70	75	88
19.	Putri Berliana	50	60	87
20.	Rafa Dwi Athaya	90	90	98
21.	Rizky Abdiansyah	60	70	87
22.	Rara Nadia	50	60	90
23.	Sadewo Bagus Satrio	60	75	85
24.	Salsabila Diva	70	85	95
25.	Shaqila Diva Rasyah	65	75	80
26.	Sinchia Toevani	70	75	85
27.	Tegar Abrar Prasetya	75	85	96
28.	Triamanda Salsabila	60	75	90
29.	Wan Habibi Rabbani	70	75	90
	Total	**1.830**	**2.121**	**2.576**
	Average	**63,10**	**73,13**	**88,82**

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From the table above, it is known that there is an increase in student's ability to write scientific papers using a process approach compared to conventional previous teaching. This can be seen from the average score of students which is gradually increasing. In the orientation test or known as the pre-test, students only get a score of 63.10. Furthermore, there was an increase in writing ability by 10.03 points after using the process approach so the average score in cycle 1 became 73.13. Then, there was another increase of 15.69 points in cycle 2 until the average score of students was 88.82.

An increase in student scores indicates an improvement in the achievement of students' writing skills. This also means that the process approach is proven to be able to improve the ability to write scientific papers of students, especially grade XII MIA 4 students of SMA Panca Budi Medan.

On the other hand, the results of observations made at the beginning of the study found that the students were not so interested in scientific work especially if asked to focus on being able to write a scientific paper. They think that scientific work is difficult and only very smart people seem "cupu" (nerds) who are only able and willing to make it. They do not realize that as an upper secondary student, the ability to write scientific papers is an important thing to master. This makes them not enthusiastic at all so they don't want to continue writing further. Not curious and involved. This is evidenced by the observation sheet notes at the time before the process approach attached to them.

Further observations were made when the application of the "process approach" cycle 1 was carried out. Although they look confused, the students are starting to be interested in knowing more about scientific work. This can be seen from their enthusiasm to ask questions, especially after being explained what are the benefits of writing scientific papers.

Furthermore, the students of class XII MIA 4 are also increasingly challenged when the "process approach" enters the stage of finding gaps or problems as the basis for raising research. They also seem to be trying to think hard to see what is not right and this becomes a problem that can be raised in their writing. After that, they try to find information on topics that they find interesting. They also share information with their friends to establish the topics they plan to take.

Although they look enthusiastic, it must be admitted that the students' writing has not been very good. This is because students are not used to writing let alone writing a

scientific paper. But at least there has been a positive change from themselves to being enthusiastic about writing. This is the basis for why this research was continued in cycle 2. All these observation notes are also attached to the appendix page of the cycle 1 observation sheet.

In cycle 2, students of class XII MIA 4 SMA Panca Budi seemed to be better prepared to write scientific papers. It didn't take long for them to determine the topic of discussion and the title of scientific papers because previously they had discussed sharing. They have also read and collected information about the things they will discuss in their writing. Students have found it easier to determine titles, and build essay outlines to write down their ideas into scientific papers. The writing of these students is already much better. The idea of writing has also begun to be written coherently and systematically. The results of these observations are seen in the cycle 2 observation sheet which is also attached to the appendix page of this study.

CONCLUSION AND RECOMMENDATION

In cycle 2, students of class XII MIA 4 SMA Panca Budi seemed to be better prepared to write scientific papers. It didn't take long for them to determine the topic of discussion and the title of scientific papers because previously they had discussed sharing. They have also read and collected information about the things they will discuss in their writing. Students have found it easier to determine titles, and build essay outlines to write down their ideas into scientific papers. The writing of these students is already much better. The idea of writing has also begun to be written coherently and systematically.

Related to the results of the conclusion above, the things that become suggestions are a) Teachers, especially language teachers, are advised to use the process approach as one of the approaches used in class when teaching writing skills, b) Students can use this process approach in their independent learning so that the mastery of learning material in themselves becomes better.

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SEKOLAHKU: Peningkatan Kemampuan Menulis Paragraf melalui Metode Reflection Siswa Kelas Vdari laman (faridaoumie.blogspot.com) diakses pada 10 November 2022.