THE EFFECTIVENESS OF TEMPLATE AND EXAMPLE PAPER IMPLEMENTATION IN DEVELOPING STUDENT WRITING SKILLS IN SCIENCE COURSES

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Abstract: The use of templates and examples of papers separately is proven to be able to develop students' writing skills. The average degree of mastery that can be achieved is already in the good category. Using various learning facilities can be a solution to improve these achievements into a very good category. This study aims to analyze the effectiveness of implementing templates and sample papers in developing students' writing skills in science courses. The pre-experimental research was conducted on elementary school teacher education study program students. Data on each student's scientific research paper writing skills were collected using the documentation method. This data was then analyzed descriptively. The descriptive analysis includes average and proportion measurements. Based on the results of data analysis, it was found that the average student's skills in writing papers were in a good category. Most students have very good (41.44%) and good (40.54%) categories of writing skills. 13 indicators have reached the very good category, one indicator is in a good category, and two indicators are in the sufficient category. The rests are one indicator still in the less category and four indicators in the less category. The conclusion that can be drawn from this research results is using examples and paper templates as effective learning facilities to improve students' writing skills.

Keywords: *Sample Papers, Writing Skills, Students, Paper Templates*

INTRODUCTION

The competencies needed to answer challenges and take advantage of opportunities in the 21st century, apart from collaboration, creative and critical thinking, are communication skills [1-3]. One form of this ability is writing skills. In almost all Study Programs at the University of Mataram, including Elementary School Teacher Education (ESTE), many courses have assignments in the form of papers. It aims to train students' writing skills. Through this exercise, students are expected to have sufficient provisions to help them complete their writing of their final project (thesis). However, due to the lack of learning facilities, the quality of papers written by students has yet to reach the good and very good categories. So it requires more training and guidance and a combination of quality learning facilities to develop students' writing skills.

The poor quality of papers has been proven empirically through research data. One shows that as many as 72% of the papers compiled by students are of poor quality; the rest are in the sufficient category (28%). It is caused by a high level of plagiarism and mistakes in writing techniques. From the measurements using a questionnaire, as many as 78% of students admitted that they had difficulty compiling papers [4]. Semester IV students have better paper writing skills. On average, the quality of their papers is in the moderate category [5]. Even so, students still need help writing several important parts. Some of them raise background issues, adapt their paper format to a standard format, use relevant and up-to-date sources, and visualize data in tables or figures. The categories of these descriptors need to be more robust.

The weakness that has been found so far is that the atmosphere on campus could be more supportive of accustoming students to develop their writing skills. It was observed that (1) the lecturers did not facilitate students, and (2) the development of students' writing skills had not been integrated with all courses. In the context of papers, the quality assessment is still not optimal because learning focuses more on mastering concepts. It has a derivative impact. Namely, students are not motivated to complete paper assignments according to their potential. Assignments in the form of papers that aim to practice writing skills are not fulfilled. Students need to be facilitated during assignments with clear formats and learn how to write papers properly and correctly. Students learn self-taught by referring to examples of papers that are spread on the internet or from papers by seniors. These examples are not necessarily of good quality and can be used as appropriate examples.

Weaknesses of conventional learning, which reduce some of the negative impacts, indicate that at least a learning process is needed that provides real experience for students to conduct research, and the results are written in the form of scientific papers. The right course in the Elementary School Study Program is Basic Natural Sciences BNS. Students in science education courses have studied almost all of the topics. Because mastery of science products has been focused on these subjects,

science process skills are fundamental competencies [6] that can be trained through BNS. Science process skills are also competencies scientists use to study various natural phenomena [7].

In addition to real experience in the field, a combination of learning facilities, namely standardized formats and examples of standardized and appropriate quality papers, is also needed. It can be a reference for students to write better. Based on the results of an assessment of the quality of student papers facilitated with a clear format in the form of paper templates, the average quality of their writing is in the good category. However, this still needs to be improved because there are still four sub-criteria with fewer and very few categories. The proportion of students whose paper quality is very poor is also still large (17.65%). Therefore, additional learning facilities are needed. Referring to the learning style of students who tend to be self-taught by imitating other papers, the appropriate learning facilities are examples of standard-quality papers. Through the implementation of these learning facilities, it is hoped that it can help students develop their writing skills more optimally.

RESEARCH METHODS
Research design
This research is a pre-experimental study with a one-shot case study design. The subjects were PGSD students at the University of Mataram who were programming BNS courses for the 2022/2023 academic year. The sample consisted of 111 students whose size was determined by purposive sampling. All students who were sampled were third-year students and were distributed to three different classes. The three classes are class 5A, 5C, and 5H. Class 5A consists of 37 students. Class 5C consists of 39 students. The 5H class consists of 35 students. During the lesson, the samples were given facilities using sample media and paper templates to help them write scientific papers.

Instrument Design and Development
The instrument used to measure the quality of papers written by students is paper documents as a qualitative data measuring tool [8]. The paper consists of six sections with a total of 21 descriptors. These sections include the beginning (Bi), Chapter I Introduction (CI), Chapter II Research Methods (CRM), Chapter III Results and Discussion (CRD), Chapter IV Conclusions and Recommendations (CCR), and Bibliography (Bb). Each section consists of several sub-sections, which are then developed into indicators. Developing the indicators themselves refers to the thesis guidelines [9], and article guidelines from SINTA 1 & Scopus indexed journals such as

Cakrawala Pendidikan and Indonesian Science Education Journal.

Data collection
The data collection process was carried out for four months. This process begins with giving assignments to students to conduct scientific research. Issues raised are free. It means that it is in accordance with students' interests but still within the scope of the science topics that have been determined. In this study, the topics to be used are "Diversity of living things" and "Ecosystems in the surrounding environment." The research data is then written in the form of individual papers. In the process, students will be facilitated with templates and examples of papers.

Paper quality data was collected using the documentation method [10]. Students are asked to submit their written work online through the learning management system the University of Mataram to obtain paper documents. The scoring rubric is used to make scoring each indicator assessed from each paper easier. The score given is 0 or 1. If a certain subsection is found or in accordance with the indicator, then the score is 1. If it does not match the indicator, the score for that subsection is 0.

Data analysis
Data were analyzed qualitatively and quantitatively—quantitative data analysis using descriptive statistics. Descriptive statistics are used to determine mastery degrees, averages, and proportions. This degree of mastery is used to describe the quality of research papers written by students. The degree of mastery is determined by converting the score of each paper into a quantitative score ranging from 0 – 100. The degree of mastery is then converted into qualitative scores in the form of A, B+, B, C+, C, D+, D, and E. These qualitative scores are then interpreted into five levels, namely very good, good, enough, less, and very less [11]. The degree of mastery of each paper is averaged to determine the quality of the paper in general/overall. The proportion analysis is carried out to see the distribution of the quality of papers based on their value and interpretation.

RESULTS AND DISCUSSION
The writing skills of students whose learning is facilitated by examples and paper templates are in a good category, where the average value of the papers they write is 73.79 (Table 1). It is better than the skills of new students whose ability to compose papers still needs to improve [4] and has increased compared to providing learning facilities only in the form of sample papers. It means that providing learning facilities in the form of examples and paper templates can also develop students' writing skills. The effectiveness of these

two learning facilities can also be seen in the Education Statistics course. Classically, the quality of student papers has also reached a good category [12].

Table 1 shows that the median of the 111 student data is 76.20. It means that at least more than half of the students have good writing skills. Specifically, at least 75% of students have good writing skills (25th percentile = 66.70). Judging from the mode value, the highest frequency is in the very good category with a qualitative value of A. The addition of learning facilities also has an impact on decreasing the average distance value of each data to the data center. This value is much smaller than the minimum value of only 28.86. It means that the data distribution is more homogeneous. It is supported by a smaller variance (150.187 < 527.89). In addition, with a range of 66.34, where the value range is 0-100, the student's writing ability has a lower variation, and there is a

smaller gap between students with the best writing skills and students with the lowest writing skills. It indicates a drastic decrease in differences in students' ability to habituate to new learning experiences.

Based on the proportion analysis, the largest percentage was students with very good writing skills (41.44%). The smallest proportion is the very less category (1.80%). The other categories have proportions ranging from 4.50% to 40.54% (Table 2). This data shows that most students respond positively to implementing additional learning facilities, namely paper templates. According to previous research results, Unram ESTE students can develop their writing skills to a good category because they are facilitated with paper templates [13]. In addition, the joint implementation of examples and paper templates has also been shown to improve the scientific writing skills of students who program Educational Statistics courses [12].

Table 1 Descriptive statistics of students' writing skills

No	Descriptive variable	Quantitative value	Qualitative value	Interpretation
1	Means	73.79	B+	Good
2	Median	76.20	B+	Good
3	mode	81.00	A	Very good
4	Standard deviation	12.26	E	Very less
5	Variance	150.187	-	-
6	Range	66.34	C	Enough
7	Min value	28.86	E	Very less
8	Maximum value	95.20	A	Very good
9	25th percentile	66.70	B	Good
10	50th percentile	76.20	B+	Good
11	75th percentile	81.00	A	Very good

Table 2 Proportion of students' writing skills

No	Range of Quantitative Value	Qualitative Value	Interpretation	Frequency	Proportion (%)
1	81.00 – 95.20	A	Very good	46	41.44
2	72.86 – 79.57	B+	Good	17	15.31
3	65.14 – 71.86	B		28	25.23
4	60.43 – 64.43	C+	Enough	6	5.41
5	56.71 – 59.71	C		7	6.31
6	53.00 – 54.71	D+	Not enough	2	1.80
7	45.29 – 47.71	D		2	2.70
8	28.86 – 32.57	E	Very less	3	1.80

Judging from the proportions, as listed in Table 2, most students have been able to use examples and paper templates as learning facilities to develop their writing skills to a very good category. Even when combined with the number of students who have improved their skills to a sufficient and good category, the proportion becomes 93.70%. It has reached over half of Unram PGSD students and is close to 100% of the sample. This fact proves that most students have good learning independence, according to findings

from previous research [14]. Even so, there is still a proportion of 6.30% whose writing ability is in the less and very less category. It indicates that they need help to maximize examples and paper templates in developing their writing skills. Some of the identified causes are the implementation of learning that is carried out online, where students tend to give non-positive responses to its implementation [15-16]. Even from the readiness aspect, they have a good category of readiness

because they can use various tools utilized in online learning [18].

Another factor that causes the proportion of students with less and very less writing skills is their weakness in writing several aspects and indicators of papers. At the beginning (Bi), there is one indicator that is still a weakness, namely abstract writing. Other weaknesses are found in the writing of methods, discussion, and bibliography

(Table 3). Students' ability on these indicators is still in the poor category (qualitative value D) and very poor (qualitative value E). Although most (13 aspects) are already in the very good category, 1 aspect has reached the good category, and 2 aspects of which are in the sufficient category, but the aspects with categories under these aspects need to be improved.

Table 3. Student writing skills aspects of papers

No	Aspects of Graded Papers	Means	Grade	Interpretation
	BEGINNING PART			
1	Bi-1: Cover or cover page	100	A	Very good
2	Bi-2: Preface	99.07	A	Very good
3	Bi-3: Table of contents	99.07	A	Very good
4	Bi-4: List of tables or list of figures	97.22	A	Very good
5	Bi-5: Abstract	63.89	C+	Enough
	CHAPTER I INTRODUCTION (CI)			
6	CI-1: Background	86.11	A	Very good
7	CI-2: Problem formulation	93.52	A	Very good
8	CI-3: Research objectives	97.22	A	Very good
9	CI-4: Benefits of research	87.04	A	Very good
	CHAPTER II RESEARCH METHOD (CRM)			
10	CRM-1: Written briefly, concisely, clearly, and sufficiently	96.29	A	Very good
11	CRM-2: Approaches, research subjects, tools & materials, instruments, and data collection and analysis (if needed).	96.29	A	Very good
12	CRM-3: Library sources that are not derived from theoretical descriptions	41.67	E	Very less
	CHAPTER III RESULTS AND DISCUSSION (CRD)			
13	CRD-1: Presented concisely, clearly, and substantially	59.26	C	Enough
14	CRD-2: Table or figure	97.22	A	Very good
15	CRD-3: Statistically processed data	97.22	A	Very good
16	CRD-4: Comprehensive discussion	28.7	E	Very less
17	CRD-5: Discussion refers to credible sources	46.29	D	Not enough
	CHAPTER IV CONCLUSION AND RECOMMENDATIONS (CCR)			
18	CCR-1: Conclusion	91.67	A	Very good
19	CCR-2: Recommendations	65.74	B	Good
	BIBLIOGRAPHY			
20	Bb-1: Compliant with APA 7 format	37.96	E	Very less
21	Bb-2: Dominance in the form of research articles in journals or seminar proceedings	45.37	E	Very less

Table 3 shows that all aspects of the BA have reached the very good category, except for BA-5: Abstract, likewise, with the core parts of the paper – BPend., BMP, BHP, and BPen., except BMP-3 and BHP-4. The increase in students' writing skills is due to the examples and paper templates having advantages/advantages of their role as learning media. Learning media alone can increase learning motivation [18-19]. It is expressed in the high active participation of students during the learning process. Another advantage of the media is that it improves the quality of the teaching and learning process [20-22] and effectively increases the learning outcomes in

the domain of knowledge, attitudes, and skills [23]. The results of other studies reveal that using instructional media has proven effective for practicing scientific writing skills [24-26]. Another advantage of the template that we use is that the language is short but relatively easy for students to understand. Several concepts are still abstract, but these concepts are made concrete by the media as examples of papers [12]. Students become more helpful, so the combination of the two media can be said to be optimal in facilitating students.

Another advantage of the sample media and paper templates we found was that students felt happy being facilitated with these two media. It was based on their response which 17.4% said they were happy, 53.3% said they were happy, 29.3% answered they were quite happy, and no one gave an unhappy or very unhappy response (Figure 1a).

In addition, students also feel that they benefit from the two media (Figure 1b), and help them when writing scientific research papers (Figure 1b). All students answered "Yes" when asked about the benefits and help or not in learning. The positive impact is that most students can write papers fluently – 84.4% answered "Yes" (Figure 1b), and the time given was sufficient – 94% answered "Yes" (Figure 1b) even though there are still four indicators whose categories are very lacking, which is a distinct weakness of implementing sample media and paper templates in facilitating students to practice their writing skills. It can be observed from their responses; most (95.2%) needed other learning facilities (Figure 1b). The goal is to improve the quality of the learning experience so that it can positively impact the development of writing skills.
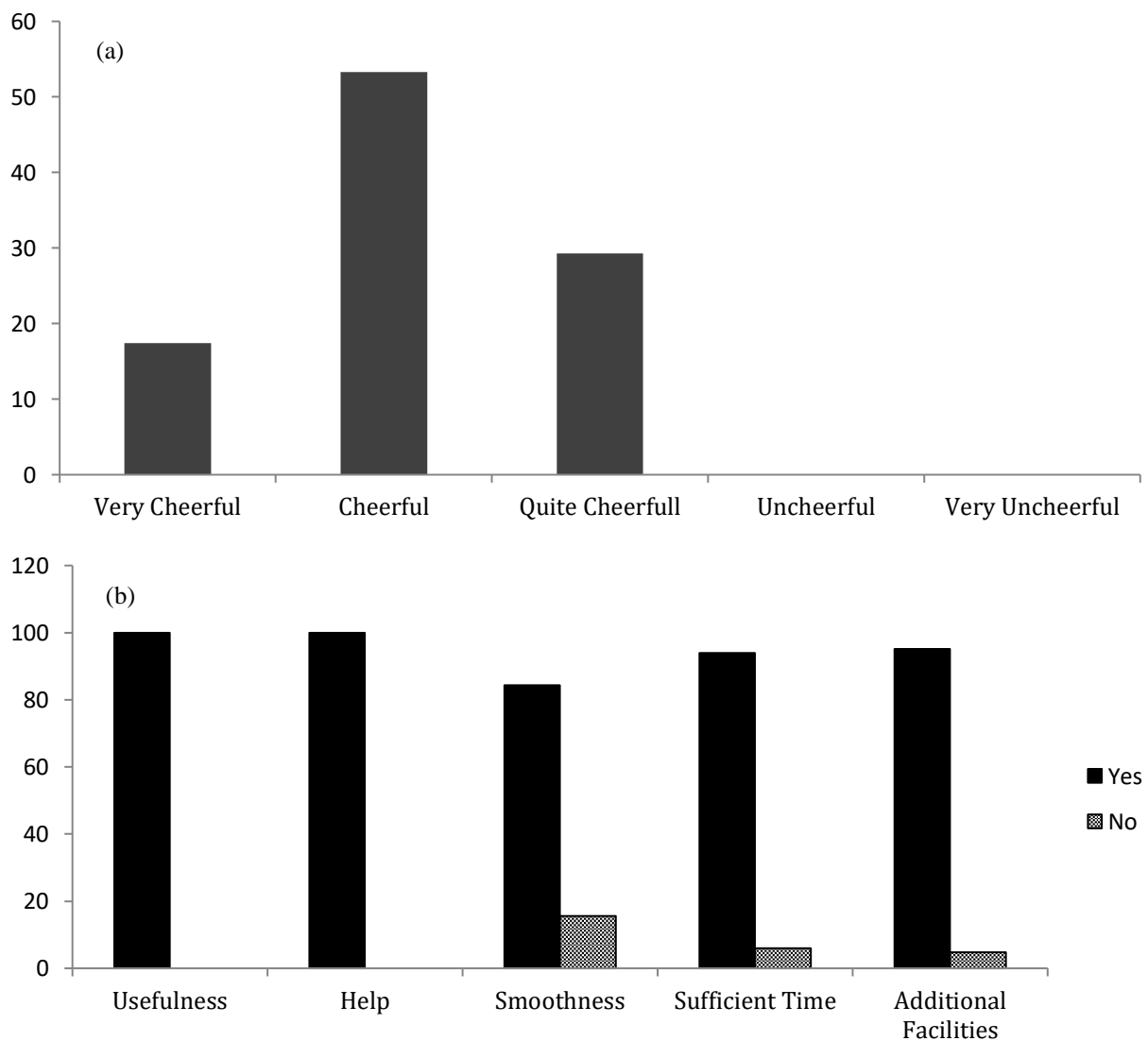

Figure 1. Student responses to the implementation of sample media and paper templates

The picture above, especially 1f, shows that students need additional learning facilities to provide a more meaningful learning experience.

With this, it is hoped that it will be more effective in improving student's writing skills and reach the very good category. Guidelines for writing

scientific papers can be the right solution for additional media, such as the final report on research results, namely undergraduate thesis, master's thesis, and doctoral dissertation, which have guidelines to help students write well. Scientific articles also have guidelines for authors publishing their research results in journals. In the case of practicing writing skills through scientific work, using facilities in the form of paper writing guidelines is a rational choice. To "wrap" the learning process, research-based learning models (PBR) can provide learning experiences that are not only meaningful but also scientific [27] because the syntax adapts the scientific method [28]. Another important fact is that empirically PBR can improve scientific writing skills [29]. It can be applied to science learning in the future. The hope is that it can help students develop writing skills and train their problem-solving abilities through scientific research.

CONCLUSION

Using sample media and paper templates together effectively develops students' writing skills. On average, it is in a good category, where the qualitative value is B+. The increase in writing skills can also be observed from the proportion of students in the very good category, reaching 41.44%. This proportion is the largest percentage compared to other categories. Even the proportion of students with poor and very poor writing skills is only a small portion. Therefore, lecturers can use sample media and paper templates to help students develop their writing skills.

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