

# Analysis of Student's Critical Writing Skills Through The Use of an Illustration Based Practical Guide

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**Abstract.** This study aims to determine students' skills in analyzing practicum by referring to the practicum guide book that has been distributed. The practical guide book is designed as well as possible so that it can be used by students so that they are able to develop writing skills which are viewed from the aspect of being able to write down the results of data analysis and evaluate data based on practicum. The indicators used in analyzing students' critical writing skills according to Richard and Linda (2012) include (1) Reflecting on what is written. (2) Monitor what is written and distinguish between what is done and not understood in the text. (3) Summarize accurately what was read in the text or heard. (4) Give examples from experience when writing examples of important ideas. (5) Connect core ideas with other core ideas explicitly when writing. (6) Write about ideas that apply to life. (7) Demonstrate the ability to write explication of a theory development or justification.. Based on the results of the study, the results of the analysis showed that the student's writing skills using an illustration-based practicum guide were very good.

**Keywords:** Critical Writing Skills, Illustration, Practical Guide.

## 1 Introduction

Optimization of the learning process really needs to be done to improve the learning process, especially during the transition from the pandemic. During the COVID-19 period, learning was fully carried out online, with many limitations in learning, educators tried to be able to maximize learning with learning tools that allowed it, even though the results were not optimal, especially in lectures that prioritized practical aspects. Effective learning, of course, must follow existing developments, even during a pandemic, learning must continue. One of the developments carried out is to use a guidebook in online learning. The basic science concept course is one of the subjects that can be implemented well if the theory learned can be applied through practice, but limitations due to the pandemic and inadequate practicum support are the inhibiting factors in carrying out the lecture process optimally. Based on a preliminary study conducted through an interview process conducted by several students who had taken basic science concepts courses, it was found that the online learning that had been attended had not been carried out optimally because the theory obtained was not accompanied by practicum. This is in line with research conducted by Suryaningsih [1] which states that practicum is the best means for developing science process skills, because in practicum students are trained to develop all their senses. In addition, research according to Agustina et

al.[2] practicum-based learning directs students to learn based on concrete experiences so they can get new ideas and concepts. For this reason, it is very necessary to do practical work.

From the initial activities that have been carried out, one of the most important activities to be able to apply practicum activities, of course, needs to be facilitated with a practicum guidebook. Practicum activities will run smoothly if there are teaching materials in the form of practicum guides. The practicum guide is one of the supports for the implementation of practicum activities [3]. Online learning for some time has caused student interest in learning to decline, of course. This is in line with Adi et al. [4] which states that online learning causes students to feel less enthusiastic, do not understand the material, have limited facilities, make it difficult and use a large and expensive internet quota. So as to attract more students' attention in learning, the design of practicum guides also needs to be designed as attractive as possible, one of which is by using an Illustration Based Practical Guide. Apart from that, through the use of Illustration Based Practical Guides it is also felt to be able to improve thinking skills. Thinking skills need to be improved so that students are able to be more creative and create new things innovatively. Vygotsky cited in Suyanto [5] states that everyone can develop their thinking skills when faced with something new. Besides that, the use of Illustration Based Practical Guide is able to improve critical writing skills. Glaser in Hidayah et al. [6] defines critical thinking skills as an attitude of wanting to think deeply about problems and things that are within the range of one's experience, knowledge of logical examination and reasoning methods, and some sort of skills to apply these methods. So that through the use of Illustration Based Practical Guide can analyze the extent to which students' critical writing skills. Based on the background described above, the authors conducted research related to the analysis of student's critical writing skills through the use of an illustration based practical guide.

## **2 Research Method**

This research is a descriptive study to analyze students' writing skills through the use of an Illustration Based Practical Guide. This research was conducted by first semester students of the PGSD Study Program who took basic science concepts courses with a sample of 40 students. Furthermore, researchers conducted research by providing an Illustration Based Practical Guide to students so they could be understood before doing practicum. Then students do practicum and make a practicum report to find out students' writing skills. In addition, through the use of this book it is based on being able to improve students' skills critically in writing practicum reports based on the Illustration Based Practical Guide that has been designed. The indicators used in analyzing students' critical writing skills according to Hidayah et al.[6] include (1) Reflecting on what is written. (2) Monitor what is written and distinguish between what is done and not understood in the text. (3) Summarize accurately what was read in the text or heard. (4) Give examples from experience when writing examples of important ideas. (5) Connect core ideas with other core ideas explicitly when writing. (6) Write about ideas that apply to life. (7) Demonstrate the ability to write explication of a theory development or justification. The following are the stages carried out in this research.

**Table 1.** Critical Writing Skills Indicator

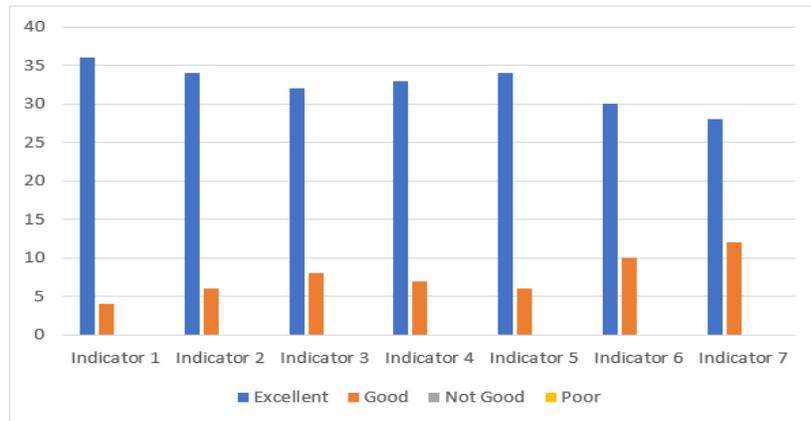
| Stages                | Activity  |
|-----------------------|---|
| 1. Initial activities | 1) Reading Illustration Based Practical Guide<br>2) understand practical procedures<br>3) prepare tools and materials                                   |
| 2. Core activities    | 1) carry out practical activities<br>2) analyze the results of observations<br>3) write down the observations<br>4) present the results of observations |
| 3. Closing activities | 1) evaluate the results of observations<br>2) provide feedback on the observations  |

Based on the indicator table above, every writing written by students in the practicum report is analyzed in depth, the suitability of the writing, the concept, and the data obtained is also considered so that the writing is always relevant to the practicum activities carried out, of course in accordance with the practicum manual that has been given to previous students so that students already understand what activities they will do during the practicum process. Students do not come with empty knowledge, but with the practicum manual, students have read it before entering the practicum.

### 3 Result and Discussion

Research related to the analysis of student's critical writing skills through the use of an illustration based practical guide was conducted by 40 PGSD study program students who took the basic concepts of physics and chemistry course. Writing skills are analyzed based on students' skills in interpreting the results of data from practicums that have been carried out into student worksheets that have been distributed by lecturers through practicum guidebooks. Students in groups carry out practicums and obtain results in the form of observational data from these activities, but independently write an analysis of the practicum results, students must be able to write down the important things they get in a practicum results report in detail and clearly. To analyze writing skills is not easy, the authors analyze based on the results of reports that have been made in depth so that the results obtained are more accurate. The steps taken in analyzing the students' writing skills include:

- a. In the early stages, students are invited to be able to read this illustration-based practical guide well, then students must be able to understand what is read so that they are able to carry out practical procedures properly. After understanding the instructions contained in the illustration based practical guide, students begin to prepare the tools and materials to be used in the practicum.
- b. The core activity is that students begin to carry out practicum based on the procedures contained in the illustration based practical guide, then students record their observations and data obtained and analyze the results of the practicum. After that, students write down the results of their observations in the practicum report. When writing practicum results, students must really write down what they understand when doing practicum properly. Based on the results of the practicum report, the following results are obtained.



**Fig. 1.** Critical Writing Skills Indicator

Based on the table above, it can be seen in indicator (1) Reflecting on what was written, as many as 36 results of student reports obtained very satisfactory results, students were able to reflect on what was written based on practicum carried out using an illustration based practical guide, then as many as 4 results of student reports obtained good results, this is because there are still reflections that have not been able to write down the results of the experiments that were carried out as a whole in depth. (2) Monitoring what is written and distinguishing between what is done and not understood in the text, as many as 34 student reports obtain satisfactory results, students are able to monitor and distinguish what is done during the practicum and are able to understand the contents of the text contained in illustration-based practical guide so that they are able to carry out practicum procedures properly, while as many as 6 student reports still get good results because there is still content in the reports written by students who have not been able to distinguish between what is done and what is not understood in the text. (3) Summarizing accurately what was read in the text or heard, as many as 32 student reports obtained satisfactory results, students were able to accurately summarize what was read and heard based on explanations by lecturers and from illustration-based practical guides, while as many as 8 results of student reports still get good results because the summary results are still classified as inaccurate but are already able to show critical language. (4) Provide examples from experience when writing examples of important ideas, as many as 33 student reports have shown very satisfactory results, students are able to provide examples from experience when writing examples of important ideas from experiments in the illustration-based practical guide that has been carried out, but there are 7 practicum report results which are still relatively good because important ideas still do not exemplify real experience, but can already provide good examples. (5) Explicitly connecting core ideas with other core ideas when writing, as many as 34 results of practicum reports have been able to relate core ideas very satisfactorily, but as many as 6 people are still unable to connect the core in an explicit way but have been able to relate ideas with other ideas so that they fall into the good category. (6) Write about ideas that apply to life, as many as 30 practicum reports belong to the very satisfying category, ideas written by students in reports can be applied in everyday

life, but 10 student reports show a good category because they are still not appropriate with everyday life but are already able to write down existing ideas. (7) Demonstrates the ability to explain writing a development or justify theory, as many as 28 practicum reports obtain satisfactory results in the ability to write explication or development, but 12 student practicum reports have not been able to justify theory so they are still in the good category.

This guide will be designed in an attractive way with illustrations that students will be able to carry out independently in their own homes. In addition, this guidebook will be designed using English, one of the underlying reasons for making guidebooks in English is due to the rapid development of technology, the global market demands that we continue to coexist with the times so we are not left behind, so skills in learning English which is combined in a practicum guidebook. A part from being equipped with illustrations and language that are in accordance with current world developments, the researcher hopes that in doing practicums, students are able to have the writing skills contained in the practicum reports to be worked on. Writing is a form of educator effort to be able to develop students' critical skills, for this reason the researcher really hopes that this research can be carried out well.

Practicum is also called laboratory activities which is meant here is a learning experience that allows students to interact with material to the observation of phenomena. Laboratory activities can be carried out by students either individually or in small groups and this definition does not include large group demonstrations, visits to museums or field activities. Practicum activities in science education are used so that students become accustomed and familiar with investigative, discovery, inquiry and problem solving activities. So that students can explore the experiments they find with these practicum activities. Students can also develop basic skills in carrying out experiments that they have, especially in practicum activities.

The role of practicum activities has long been a part of science education, its role has changed back and forth between elucidation and verification as well as investigation to find facts and arrive at principles. The role of practicum as an instrument for learning inquiry and cognitive learning is not a new role. This was introduced at the end of the 19th century when H.E Armstrong started inquiry activities in teaching chemistry and this is known as the heuristic method or an art that makes students discover something for themselves. Practicum activities must be integrated with theoretical activities and must be used to make an important contribution in finding facts through investigation so that they arrive at principles related to the facts found.

Regulation of the Minister of National Education no. 24 of 2007 regulates school facilities and infrastructure standards, especially laboratories. The biology laboratory standards set include: laboratory room design, laboratory administration, laboratory management, and storage of practicum tools and materials.

Science practicum activities in Elementary School Teacher Education are one of the practicum activities that are integrated into the basic science concepts courses and Science, Environment and Community Technology courses, which aim to improve student skills in utilizing, using, Natural Science (IPA) equipment available in the laboratory, however, the covid pandemic requires educators to be able to make an electronic manual so that they are able to facilitate students in practical learning.

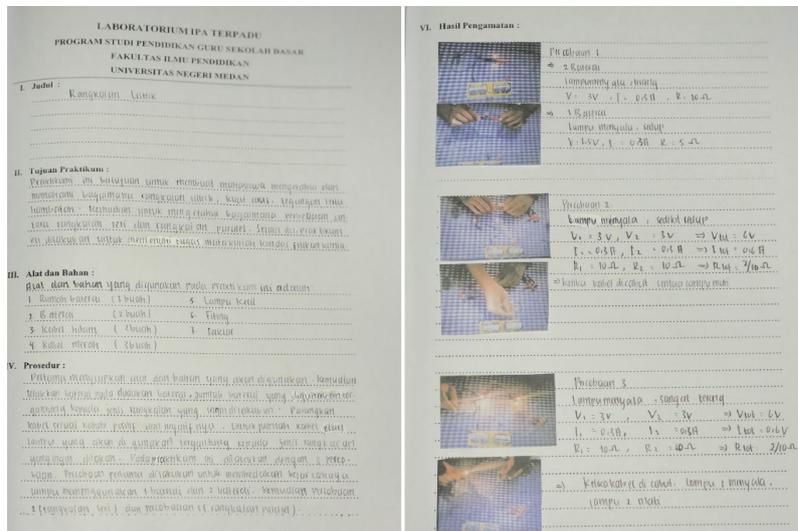


Fig. 2. Example Of Practical Report

The picture above is an example of the work from the practicum that has been carried out by students based on their observations from the handbook that has been distributed. Students are invited to be able to state the entirety of the results of observations that have been made in student worksheets. The practicum process is carried out in groups consisting of 5 people. The number of groups in the practicum room consisted of 8 groups with a total of 40 students. Through the guidebook provided, students in groups discuss and carry out practicum based on the guidebook. Collaboration is really needed in carrying out this practicum, students together in groups prepare the necessary tools and materials, check whether the tools and materials to be used are in good condition or not (calibration), then in groups design activities according to the guidebook, every thing Important things in the experiment must be recorded so that later they can be discussed later. There were several interesting things that were found during this practicum, namely when students had difficulty designing according to the guidebook, then students were not able to read carefully the instructions in the guidebook, besides that there were several groups that had difficulty formulating important things that needed to be noted. in practicum. During the activity process, the lecturer as a facilitator always guides and pays attention to students, so that if there are students who experience difficulties during the practicum, students are free to ask questions and the lecturer guides wholeheartedly. The instructions given by the lecturers and those in the guidebook are able to invite students to think more deeply related to practicum activities, student enthusiasm in learning is very high, there are no students who are less active during the learning process, being able to work together is the key to learning, good communication, as well as giving each other input between groups are also things that make this practicum activity more successful.

The results of the practicum that have been carried out by students in groups are then set forth in a practicum results report or practicum worksheet, based on observations, work results, students are able to analyze and conclude the activities in the worksheet. There are several difficulties experienced by students when they want to

analyze the results of work into reports including the time needed is quite short so students are in a hurry to write down the results of observations, besides that the data obtained from the practicum results is quite a lot, furthermore students must be able to calculate each result which is obtained. The results of the report can also be seen, the lack of neatness of students in writing. The theory obtained from learning becomes a strong guide for students to be able to write their thoughts into writing from the experimental results.

Writing skill is one type of language skill that must be mastered by students. Many experts express the notion of writing skills. Writing skills are one of the productive and expressive language skills that can be used to communicate indirectly. In line with the opinion according explains that this writing skill is a skill that expresses the thoughts and feelings that exist in the writer which is done in writing. Through writing activities, students can gather information and communicate their thoughts and can express their imaginations. Writing skills are skills using spelling, punctuation, word formation, use of sentences, selection of sentences, selection of words for the effectiveness of sentences, expressing thoughts carefully, precisely, logically, and consistently . An article is said to be effective, if the writing is prepared properly and carefully, so that the reader can easily understand the message, news, and message conveyed in the writing. What needs to be considered in writing is language, spelling, and word choice.

The results of each indicator in students' critical writing skills show that the indicators show the ability to explicate writing a development or justify theory still needs to be improved. Based on these results, it was also obtained that the average results of practicum reports were 32 students in the very satisfactory category, and as many as 8 students produced practicum reports in the good category. The results of reports made by students show the ability of students to write based on the results of practicum and observations that have been made. From the very good and good criteria, it can be seen that the ability to write based on the average indicators shows that students are able to write well.



**Fig. 3.** Average Indicators Of Critical Writing Skills

- c. The closing stage, namely evaluating the results of the practicum report that has been carried out after students make presentations based on the experimental results and reports that have been prepared by students, then based on these results feedback is carried out to improve the next practicum report. Follow-up is needed in the analysis of writing skills so that in the future it can evaluate weaknesses and deficiencies

during the activity process, what causes student writing skills to not show significant results. However, when viewed from the results of research conducted, students' writing skills are very significant due to the use of practicum manuals that make it easier for students to write any important things in practicum reports. Instructions in activities are needed so that the activities to be carried out become directed. However, based on the results of the evaluation as a follow-up material, it is possible that in carrying out practicums, one can allocate time for each activity in the guidebook, so that students know the time required for each activity, and in writing students are not in a hurry, adjusted to the data to be obtained from each activity. experiment, because for each material, of course, you will get different data and at different times. The results of this study also indicate that the use of practicum books plays an important role in the implementation of practicum activities, there is a difference when students previously did not have practicum manuals. Students are confused about what to do during the activity. Based on the satisfaction sticker given to students in using the practicum manual, 100% or as many as 40 students expressed satisfaction in using the practicum manual because it provides convenience and can be accessed easily. The success in the learning process and the satisfactory results of students' writing skills were obtained due to the practicum manual used, so based on the results of the study it can be concluded that of the seven indicators of students' writing ability they produced satisfactory results.

#### **4 Conclusion**

The conclusions obtained are based on the results of research conducted from an analysis of students' critical writing skills which include (1) Reflecting on what is written. (2) Monitor what is written and distinguish between what is done and not understood in the text. (3) Summarize accurately what was read in the text or heard. (4) Give examples from experience when writing examples of important ideas. (5) Connect core ideas with other core ideas explicitly when writing. (6) Write about ideas that apply to life. (7) Demonstrating the ability to explicate writing a development or justify the theory obtained that students' critical writing skills are very satisfying, this can be seen from the average results of practicum reports of 32 students in the very satisfying category, and as many as 8 students producing practicum reports in the category good. The results of this study also indicate that the use of practicum books plays an important role in the implementation of practicum activities, there is a difference when students previously did not have practicum manuals. Students are confused about what to do during the activity.

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