Rubrics-Based Assessment as a Teaching Strategy of Writing Journal for Novice Authors

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Abstract
Journals have proven to be useful communication tools for teachers and students. This can create a positive atmosphere for learning and encourage in-depth learning by engaging learners to connect new knowledge with the previous one (Yulia, MF., 2013). The research was conducted at STKIP Muhammadiyah Enrekang. Research subjects were 17 students as novice authors in the 4th semester of academic year 2016-2017. In collecting data, researchers used rubrics, observations, and questionnaires. The results showed that the use of rubrics can improve the ability to write journals. Their writing increases in every element of the journal such as introduction, method, result, discussion, and writing format. Their improvement can be seen by comparing the mean scores on the pre-semester questionnaire and the post-semester grades (2.57 to 4.10), and the average student outcomes in journal writing, from the total journal writing value, are high (85.12 %). In addition, novice authors who use rubrics report more confidence in journal writing skills at the end of the semester. Overall, students assess the use of assessment rubrics as the most effective way to teach scientific writing. This paper describes a simple and concrete method of incorporating journal entry into an inquiry-based writing course, and provides a clear path to improving writing skills for novice authors through the use of rubric and sample manuscripts.

Keywords: Rubric-based assessment, teaching strategies, peer-collaboration, journaling writing, novice author

1. Introduction

Nowadays, it is important for English Education students to develop basic skills in reading and writing scientific literature and have a meaningful understanding of the process in research. Writing is very important for students' success in learning (Ismail, Jabri, 2017). In college, the lecturers request students to organize the text and show it, present and extend their knowledge and understanding of their own writing. Graham & Hebert, (2011); Jenkins, Johnson, & Hileman, (2004); Reeves, (2000), states that the competence of students with writing assignments helps their performance to develop their writing skills as well as other learning domain. In addition, most colleges use writing (theses, dissertations or even scientific journals) to assess their qualifications in completing their degree.

Writing can also work in the establishment of personal electronic links such as text messages, social networking posts (WA, line, Facebook, Instagram, Twitter), blogs, and emails to reflect current events, daily social interactions, and self-articulation. Writing can also help reduce psychological and physical stress and may limit the need for healthcare connected to the disorders caused by the hardships (Harris, 2006).
This fact makes writing skills a central role for students in particular. But how important the skill is, writing requires great struggle for students and society at large. How many children and students at school even in college are unable to produce papers that meet the expectations of a school or college?

One of the reasons why many students are not skilled to achieve reference in writing is the application of rubrics in writing articles that are very limited in the classroom. Most schools according to Kiusara, Graham, & Hawken, 2009), teachers often write assignments that require little analysis, interpretation or actual writing (e.g., writing responses, completing worksheets) that use a lot of sessions. While the instructions related to the writing strategy only use less time for other perspectives of teaching.

Another reason is the problem in the preparation and development of ideas into the journaling form until the final stage of journaling writing is encountered by the novice authors in the studies in the course of Writing. In addition, the lack of active participation in the course process and the lack of conviction reveal their ideas, feelings, and thoughts in writing. In addition, the problem will be the application of learning strategies in the learning process that less activate the students in the learning process (Hmelo-Silver C.E., Eberbach C., 2012) and less curiosity to write into other factors.

The main intention of educational reform is to incorporate scientific research findings that are clear, consistent and can be convincing in their application in schools or colleges to help create a culture of writing and literacy as well as to support high-quality teaching and, as a result, improve student competence and achievement.

Because our classroom is still far from fact and still in process, so the real opportunity to teach how to write experimental research has not been able to build and run well in class. As a result, we must provide an ideal environment for teaching writing skills that can be the basis for students in writing articles or writing scientific journals that students can do for their perspective.

Increased liveliness and curiosity of learners can be done in various ways; one of them is by way of peer collaboration. Peer collaboration is requiring students to actively participate in reviewing the writing of their classmates so that they have a shared responsibility and trust in solving the problems at hand. Thus, their journaling writing skills are expected to increase as well.

The present study examines the possibility that providing students with an instructional rubric, i.e., with explicit criteria for their writing, improves writing performance (Covill, 2012). Both social cognitive theory and cognitive theory can be used to explain how the use of rubrics might enhance writing performance. In brief, according to social cognitive theory, rubrics could boost a writer's self-efficacy, thereby boosting motivation and writing performance. According to cognitive theory, use of a rubric might improve writing performance because a rubric may facilitate cognitive processing while writing, (Covill, 2012)

Generally, this research question tries to answer how to support students to become deeper writers. More specifically, how is rubrics; peer collaboration can reflect the ability of novice authors in journal writing? The research will attempt dedicated to broadening the literature on how to foster the writing journal which may, in turn, benefit for college both national and also within the atmosphere of the institution since novice authors are requested to compose an article to restore their learning and practices.
2. Literature Review

2.1. The writing skills process

The application of rubric is not a new concept, and this section has various useful functions simultaneously. First, communicate task requirements and set uniform standards for student success, while eliminating unintentional bias in the course assessment process. This is particularly useful in finding areas where students still need help and appropriate future teaching targets. Rubrics can also present as a tool to create more effective peer review processes if the lecturer chooses to apply them in this way (Geithner & Pollastro, 2016). Finally, the rubric can sharpen the lecturer’s idea of what he’s looking for before the material is taught, which tends to make the teaching more effective.

Trying to apply practice-based classes in writing courses shows that some students who have no previous active learning experience can struggle with the lack of textbooks and the response that processes can become more significant than content (Johnson, 2003). In perception to student feedback, a rubric was strengthened to provide concrete assessment methods for items such as oral presentations, and writing assignments, (Clabough & Clabough, 2016).

When presented with new material, the brain learns to search for patterns while processing information. Because the rubric gives structure and pattern to this process, it not only helps students with organizational strategies but also reflects the way the brain actually teaches (Willis, 2010). The use of carefully designed rubrics can improve the executive function of students, including skills such as organizing, prioritizing, analyzing, comparing or distinguishing, and goal setting (Carter, 2000). Requiring students to use rubrics to make informed decisions can take advantage of executive functions during the learning process (Clabough & Clabough, 2016).

2.2. Utilizing Rubrics

The rubric serves to evaluate the product of a written journal and provide feedback to students about their writing, (Troia, G., 2014). The rubric gives an overall impression of the quality of writing (Kelly, M., 2017). This rubric is oriented to provide more information about writing aspects such as content, style, and conventions. Similarly, the genre-oriented section of the image identifies how well the text is related to the genre (e.g. the grammatical element). Feedback provided through the rubric will help students improve their writing. Andrade, Du, & Wang, (2008) revealed that helping and having students develop rubrics to evaluate their own writing and other people’s ideas to fit their own writing needs is the best way to help students internalize the criteria of the letters disclosed. Students need adequate feedback on their writing to make improvements in content, organization, and form. Feedback from lecturers and other students is an important part of effective journal writing. However, it must be realized that some variables can affect undue novice authors about how they evaluate the quality of a composition. This variable includes parts of the structure designed for the purpose of writing a journal, reliability of teacher assessments. The writing mechanism is especially basic writing skill for novice writers, (Graham, Harris, & Hebert, 2011).
2.3. Peer Collaboration

Create regular writing activities that enable students to work with their peers to plan, design, revise, and edit compositions, such as writing group papers, and creating a positive writing environment. Pressley, Gaskins, Solic, & Collins, 2006; Pressley, Raphael, Gallagher, & DiBella, 2004; Pressley, Yoko, Rankin, Wharton-McDonald, & Mistretta, 1997, stated that students feel less competitive with each other and learn to seek and appreciate their classmates' input to improve their writing expression.

2.4. Journal Writing

Journal writing is an emerging activity as a way to encourage critical reflection. Journal writing engages students' thinking through different cognitive processes such as prediction, brainstorming, reflection, and questioning (Al-rawahi & Al-balushi, 2015). It encourages students to express their interests, thinking and curiosity about the world around them, and discover new ideas. This can happen because "the act of writing begins a reflective analytical process" (Bailey, et al., 2001, as quoted Gebhard & Nagamine, 2005). Journals are often used in an educational context because they facilitate authentic and meaningful communication that focuses on the message and shape that will occur. Journal is believed to be a means to engage students in the learning process. It is claimed to have the potential to increase students' interest in the material, to encourage and empower students to be more responsible for their own learning, to be reflective learners, and to provide useful feedback for their teachers (Park 2003). Looker (2005) argues that "As students are encouraged to be responsible for their own learning, they tend to develop higher-order thinking skills such as analysis, synthesis, and evaluation." Journals have many benefits, both in terms of improving learning and personal development (Hiemstra, 2001). They are described as follows (Smith, 2013).

a. The journal helps the writer remember something later because it works to record (Ishohani M., 2005). By keeping a journal, writers are helped to recapture the recorded moment so they can see it deeper.

b. The act of writing empowers the brain because it always stimulates thinking. By writing journals, engagement and reflections are promoted. Thum (2008) adds that the act of writing forces writers to think more deeply about certain topics and ultimately crystallize their thinking into a written form. Writing makes it easy for people to check for problems and therefore find a solution. Furthermore, journaling helps writers to get used to writing. Thus, their intellectual growth is promoted.

c. Journals help authors to see themselves, their feelings, and their actions differently.

d. Journals allow freedom that can bring the author in a new direction and learn something valuable from any situation.

e. Journals allow authors to clear their minds.

f. Writing journals allows authors to reflect on experiences. Such reflection can have a direct impact on writers in dealing with situations and individuals.

3. Methodology

3.1. Course Design

Students are expected to design, conduct, and analyze their own research articles in groups of 2-3 students to work as a team. This measure was chosen because it falls
within the effective group size range for collaborative learning (2, 5) and is related to the number of students in each section of the class. In order for scientific progress to be achieved, researchers should communicate their findings with their colleagues, both in spoken and written form. Writing journals is taught gradually to students based on their progress (Table 1). Each student is expected to write articles consisting of page titles, abstracts, introductions, materials and methods, results, discussions, and literature cited or references.

To maximize diversity, students are required to complete a workgroup questionnaire and be divided into groups with their diversity of majors, previously completed courses, prior research experience, and career goals. Participation levels are built in the semester class as a whole. Students are reminded throughout the semester about this class and that poor participation will have a negative impact on its value. When determining the class of participation, we decided that 17 students in semester 4 of STKIP Muhammadiyah Enrekang academic year 2016-2017 divided by 5 group members. At the end of the semester, students rated their group members about contributions to writing a group research article on a scale of 1-10, with a value of 10 indicating a significant contribution and a value of 1 indicating no contribution to the group.

Table 1. Schedule for teaching journal writing

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Journal Element</th>
<th>Rubric</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Title Page</td>
<td>Title page content (10 points)</td>
<td>Draft of Title Page</td>
</tr>
<tr>
<td>Week 2</td>
<td>Abstract</td>
<td>Abstract element (10 points)</td>
<td>Draft of Title Page and Abstract</td>
</tr>
<tr>
<td>Week 3-4</td>
<td>Introduction</td>
<td>Introduction section elements (10 points)</td>
<td>Draft of Title page, Materials &amp; Methods, &amp; Results</td>
</tr>
<tr>
<td>Week 5-6</td>
<td>Materials and Methods</td>
<td>Materials and Methods section elements (10 points)</td>
<td>Draft of Materials &amp; Methods and Results (Figures with captions only)</td>
</tr>
<tr>
<td>Week 7-9</td>
<td>Results</td>
<td>Body of results content and format (10 points)</td>
<td>Results (Statistics and Text); Discussion; References</td>
</tr>
<tr>
<td>Week 10-13</td>
<td>Discussion</td>
<td>Discussion section elements (10 points)</td>
<td>Draft of Discussion</td>
</tr>
<tr>
<td>Week 14</td>
<td>References</td>
<td>Reference section elements (10 points)</td>
<td>Draft of References</td>
</tr>
<tr>
<td>Week 15</td>
<td>Writing style and formatting</td>
<td>Overall writing style (30 points)</td>
<td>Tone and style, errors, topic sentence, transitions, past tense and overall format</td>
</tr>
</tbody>
</table>

**Rubric and Tutor**

The assessment rubric evaluates the performance of a task. This method is organized by lecturers or tutors to assess their students’ papers and learn which areas students need to develop. In this study, the rubric is designed using a scoring system for each required element of research (70% of the overall score), and 30% of the writing style of the entire article writing element. Type of assignment” refers to individual or group work. In the case of group work, all members of the group received the same grade.
Table 2. Grading of assignment

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Type of assignment</th>
<th>Total points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title Page</td>
<td>Group</td>
<td>10</td>
</tr>
<tr>
<td>Abstract</td>
<td>Group</td>
<td>10</td>
</tr>
<tr>
<td>Introduction</td>
<td>Group</td>
<td>10</td>
</tr>
<tr>
<td>Materials and Methods</td>
<td>Group</td>
<td>10</td>
</tr>
<tr>
<td>Results</td>
<td>Group</td>
<td>10</td>
</tr>
<tr>
<td>Discussion</td>
<td>Group</td>
<td>10</td>
</tr>
<tr>
<td>References</td>
<td>Group</td>
<td>10</td>
</tr>
<tr>
<td>Writing style and formatting</td>
<td>Group</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total Point</strong></td>
<td></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

3.2. **Data Analysis**

At the beginning and the end of the semester, students complete a questionnaire that explores their attitudes toward journal writing, and how relevant they feel effective writing is good science. The questionnaire also collects information on how students assess their competencies both personally and entirely, as well as in the writing of research articles, and their perceptions of the effectiveness of different ways of teaching journal writing.

The qualitative data including observation, interview, and questionnaire could be analyzed using constant comparative method. Glaser and Strauss (1967) say that a constant comparative method as a means of analyzing sociological data which is applied in the same study to any kind of qualitative information including observations, documents, interviews, books, articles, etc. They describe the stage of constant comparative method are comparing incidents applicable to each category, integrating categories and their properties, delimiting the theory, and writing the theory. In quantitative data, the researcher compared the mean score of each test to know there was improvement in students’ writing ability or not.

4. **Findings and Discussion**

4.1. **Findings**

The purpose of this activity is related to the benefits of students in understanding the process of writing research journals as well as helping students develop skills in research and communication (Girgensohn, 2016). Student learning is assessed at each stage of the project through a series of rubrics and assessments of student attitudes assessed through pre- and post-questionnaire. The analysis of student work on "Group Research Paper" and peer review of this paper express the students' benefits in the learning objectives. The success of students in completing final group research papers is revealed in the student scores as assessed by Rubric Report (Table 4). The average score on Group Research Paper is 85.12/100, or 85.12%.
Table 3. Assessments of group research reports

<table>
<thead>
<tr>
<th>Group</th>
<th>Title 10 Points</th>
<th>Abstract 10 Points</th>
<th>Introduction 10 Points</th>
<th>Methods 10 Points</th>
<th>Results 10 Points</th>
<th>Discussion 10 Points</th>
<th>References 10 Points</th>
<th>Writing style 30 Points</th>
<th>Overall 100 Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8.00</td>
<td>8.00</td>
<td>7.00</td>
<td>7.50</td>
<td>8.00</td>
<td>8.00</td>
<td>7.40</td>
<td>24.50</td>
<td>78.40</td>
</tr>
<tr>
<td>2</td>
<td>7.50</td>
<td>8.50</td>
<td>8.50</td>
<td>8.00</td>
<td>8.50</td>
<td>8.50</td>
<td>8.50</td>
<td>26.00</td>
<td>84.00</td>
</tr>
<tr>
<td>3</td>
<td>9.00</td>
<td>8.50</td>
<td>8.50</td>
<td>9.00</td>
<td>8.50</td>
<td>8.00</td>
<td>9.00</td>
<td>28.00</td>
<td>88.50</td>
</tr>
<tr>
<td>4</td>
<td>8.50</td>
<td>9.00</td>
<td>9.00</td>
<td>8.50</td>
<td>9.00</td>
<td>9.00</td>
<td>8.50</td>
<td>27.50</td>
<td>89.00</td>
</tr>
<tr>
<td>5</td>
<td>8.00</td>
<td>8.00</td>
<td>8.00</td>
<td>8.50</td>
<td>8.50</td>
<td>8.00</td>
<td>8.20</td>
<td>28.50</td>
<td>85.70</td>
</tr>
<tr>
<td>Average</td>
<td>8.20</td>
<td>8.40</td>
<td>8.20</td>
<td>8.30</td>
<td>8.50</td>
<td>8.30</td>
<td>8.32</td>
<td>26.90</td>
<td>85.12</td>
</tr>
<tr>
<td>SD</td>
<td>0.51</td>
<td>0.37</td>
<td>0.68</td>
<td>0.51</td>
<td>0.32</td>
<td>0.40</td>
<td>0.53</td>
<td>1.46</td>
<td>3.83</td>
</tr>
</tbody>
</table>

The use of rubrics works well as an assessment tool for novice authors in journal writing. The assessment takes about 15-25 minutes to assess the group paper. Based on the average result of students in journal writing, greatness, from the total value of journal writing was found to be high (85.12%). Using rubrics facilitates conversations with individual students about their papers if there is a class investigation, and eliminates the need to write a large number of comments on each paper (E. Clabough, 2016). Some students report that they use rubrics during the tutoring sessions, but they concentrate primarily on grammatical structures and paragraphs with other groups.

In addition, group research in journal writing requires students to work together in their groups to analyze and interpret information from multiple data sets, and to synthesize information into the overall presentation for the group - write the report. The student learning analysis depicted in Figure 1 does not explain the improvement in the accuracy of the learning activities from stage 1 to stage 3 and therefore, we suggest this may reflect the level of student development at least in their research experience.

![Figure 1. Comparison of students Journal writing](image-url)

Based on the students’ performance on the task of writing the rubric of stage 1: "Introduction," "Methods/Results," and "Discussion" compared to student performance in stage 3 with the same rubric. Show that the mean and standard deviation (n=17). The improvement of student performance from activities of phase 1 to stage 3 was
statistically significant for Introduction (Mean 69.67 to 82.67), Method and result (Mean: 74.50 to 84.00), Discussion (72.00 to 83.10), and writing style and formatting (77.00 to 89.67).

**Student Response to Teaching Strategies**

The questionnaire also calculated how novice authors assessed the effectiveness of teaching strategies for writing more effectively. Students agree or disagree with the effectiveness of the seven methods commonly used for teaching writing: working on the draft individually, participate in small group writing discussion, modeling my paper after a paper sample, viewing the detailed scoring rubric, listening to lecturers’ explanations, peer collaborative, suggesting a reasonable hypothesis or research question. There were significant differences found in the assessment of pre-semester and post-semester responses.

**Table 4. Students’ respond of teaching strategies**

<table>
<thead>
<tr>
<th>No</th>
<th>Students’ respond</th>
<th>Pre-semester</th>
<th>Post-semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>working on the draft individually</td>
<td>2.24</td>
<td>4.06</td>
</tr>
<tr>
<td>2</td>
<td>participate in small group writing discussion</td>
<td>3.18</td>
<td>4.18</td>
</tr>
<tr>
<td>3</td>
<td>modeling my paper after a paper sample</td>
<td>3.00</td>
<td>3.88</td>
</tr>
<tr>
<td>4</td>
<td>viewing the detailed scoring rubric</td>
<td>2.59</td>
<td>4.18</td>
</tr>
<tr>
<td>5</td>
<td>listening to lecturers’ explanations</td>
<td>2.06</td>
<td>4.06</td>
</tr>
<tr>
<td>6</td>
<td>peer collaborative</td>
<td>2.59</td>
<td>4.06</td>
</tr>
<tr>
<td>7</td>
<td>suggesting a reasonable hypothesis or research question</td>
<td>2.35</td>
<td>4.29</td>
</tr>
</tbody>
</table>

| Mean Score | 2.57 | 4.10 |

Students’ responses to semester and postnatal assessments of all classes were collected together (n=17), we found that students perceived the effectiveness of journal writing methods using very different sections (with mean values: 2.57 for pre semester and 4.08 for post-semester using scale 5) (Table 4).

**4.2. Discussion**

Requiring students to write journal-based rubrics and peer-review based on the guidelines of the journal resulting in quality articles, an understanding of the importance of journals through peer-reviewed, and an understanding of the publishing process of the article itself. By requiring novice authors to write scientific journals in accordance with their format or guidance, and provide more information to novice authors about the aims and objectives of an article, as recommended by others, (Sorrell JM and Brown HN., 1991). As a result, assessments are given far more objectively, and instructors or reviewers receive fewer complaints. Finally, students will have useful technical skills for publication. If this method is applied to a novice lecturer, it will certainly produce a manuscript of publication quality.

The use of this method has many benefits for instructors and students compared to traditional paper approaches. Students learn more in specific areas:
1) Students study the process of scientific and technical publishing until the receipt of the manuscript.
2) Students learn peer review scores (Emilee Senkevitch, Ann C. Smith, Gili Marbach-Ad, 2011). Through experience, they begin to understand why peer-reviewed journals are considered more reliable as a reference than newspapers, magazines, encyclopedias, and the internet.
3) Students learn to write in style and in accordance with the guidelines that have practical relevance to their career.

This method also has other tangible benefits for lecturers and students. As a consequence of the final draft assessment in accordance with the guidelines used for review, respond to all elements of the research and ensure that the journal will meet the criteria of good grade. The quality and grade of the final article increased sharply compared to the previous academic year.

Based on the results of student respondents also support the writing of journal-based rubric and better understanding peer review (Table 3 and Figure 1). In this case, it is a dramatic increase in the percentage of students who believe that journal-based rubrics should be an acceptable reference as a method of learning to write a journal (mean score 85.12 and SD 3.83) after review. This method suggested that the rubric and peer-review from colleagues and assignments write highly structured journals that result in improvements in the final manuscript and not the writing experience. Thus, this method supports the idea that clear written guidance for journal writing is important for student performance, (Sorrell JM and Brown HN, 1991).

The importance of manuscript examples cannot be underestimated and examples are the pieces of information most often requested by students. Now, examples of various manuscripts are readily available to novice students and writers in the library Covill, Amy E. (2012). Some students may find it difficult to be critical of their peer manuscripts while hoping to support other students.

There is nothing wrong with teaching students who have a high curiosity as they want to be taught. However, further research needs to be done to compare teaching methods. Students state that the method of "effective lectures" is to teach scientific writing, but the characteristics of this "effective speech" need to be elaborated further. Exposing groups of students to different types of college styles and then managing subsequent writing assessments will enable the evaluation of writing performance and allow students to weigh their perceptions of what makes an "effective lecture." Studies comparing the use of sample papers, specific rubrics, and effective lectures will be helpful, as well as a combination of the three elements.

**Conclusion**

Based on the rubric application in the context of journal writing, we recommend that rubric-based assessment be applicable to writing courses especially for novice authors. Writing research articles can be used to introduce the process of scientific research, writing scientific research papers, and data analysis. It is our belief that using research articles to teach journal writing allows students to link classroom experiences with educational research.
Based on the analysis of the results of student writing as a novice writer revealed that the activities of journal writing have a positive effect on themselves. Their learning is promoted because they become reflective learners, who can make sense of what they learn. They are also shaped to be more critical of their own abilities, and therefore better able to find ways to improve. As a consequence, the autonomy of their learning develops.

Although using rubrics and peer reviews or tutoring commonly used in writing journals, articles or papers, did not find that peer review improved students' perceptions of writing competence. Students prefer to hold the key to success in their hands - rubrics or manuscripts, in their eyes, more valuable than listening or talking about writing.

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