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The Effect of a Workshop Change on Skills Writing Scientific Articles and Information Literations

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Abstract: 21st century craftsmanship is an era full of competition and global environmental issues. Students must be equipped with information literacy and writing skills to be able to face 21st century competition. The general objective of this research is to determine the skills of writing popular scientific articles and information literacy of students through online workshops. This research is a descriptive study, with a weak experiment method, the number of respondents was 30 high school class X students. To determine the increase in students' ability to write scientific articles before and after the workshop was held pretest and posttest by giving portfolio assignments. Based on the results of the research, online workshops on writing scientific articles had an influence on the writing of scientific articles of students seen from the average pretest results of 5.4 while the average posttest results were 8.3. This shows a significant difference in the writing of students' scientific articles. Students' understanding of information literacy is in good category. This is indicated by the average percentage of the achievement indicators of 73,3%. Thus, online workshops can be used as a means for teachers to improve scientific article writing skills and student information literacy.

Keywords: *Workshop, Writing Skills, Information Literacy.*

Introduction

The craft of the 21st century is an era full of competition and global environmental problems. Students must be equipped with information literacy and writing skills to be able to face competition in the 21st century 21st century skills are essential skills that everyone must master in order to successfully face the challenges, problems, life and careers of the 21st century (Redhana, 2012).

The Covid 19 pandemic has an impact on all students in the world, especially in Indonesia. Online learning is an alternative for students to take part in learning. Online learning is inseparable from 21st century skills that are very important to students. Students are required to remain active in learning during a pandemic and teachers must find solutions in increasing student motivation so that students remain active in participating in online learning. One of the lessons that makes students not bored during online learning is holding online workshops. By bringing in expert resource persons will make students more enthusiastic in participating in learning.

Literature Review

Factual knowledge and daily experiences will motivate students to start writing. In addition, writing scientific articles on topics that are of interest to students can increase interest

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in science learning (Simon, 2016). In the industrial revolution 4.0, students have been exposed to a lot of digital media which makes students more interested in reading on social media, and it is difficult to read scientific articles. The low reading ability makes it difficult for students to write, especially writing scientific articles.

According to Revolta, (2006) popular scientific articles are essays that contain scientific elements, are based on facts, and are written to explain something to the general public. The use of language in popular scientific articles tends to be light language, is often found in articles on social networks, and is commonly used by the public. Popular scientific articles are most suitable for training in students who are still not used to writing scientific articles as a first step to improve writing power. In Simon (2016) it is explained that to train students' ability to write scientific articles, teachers can train students to make popular scientific articles by holding popular scientific article writing workshops. The popular scientific article writing workshop is a writing teaching workshop approach to practice the ability to write scientific articles by emphasizing direct writing actions (Whitaker, 1998; Peha, 2003).

Talking about scientific writing, it is closely related to information literacy. Where students must be literate in finding information, reading information, and drawing conclusions from the information obtained, because this is as a support in writing scientific papers.

The concept of information literacy put forward by the Association of Higher Education Libraries and Research (ACRL) includes a number of components that are directly relevant to undergraduate study programs. These components include defining information needs, identifying potential sources, building search strategies, retrieving information, extracting information, and synthesizing concepts from information. The application of these skills often requires special use of scientific concepts and vocabulary. Thus several studies have emphasized the benefits for educational majors who practice accessing and interpreting scientific literature through assignments and embedded instruction in their main courses. So information literacy learning is very important to do both in the curriculum and in learning (Rachel, 2016).

To achieve information literacy skills, students are required to be as follows: able to obtain, evaluate, and use information well. However, students often get bad information, even at the university level they still have weaknesses in information literacy because it is not explicitly taught in schools (Purwanti, 2018). Uçar, & Yazıcı (2016) revealed in their research on The Impact of Portfolios on Enhancing Writing Skills in ESP Classes that students in the experimental class who were trained to write using portfolio assessment had significantly higher writing skills than the control class. Another research that has been conducted by Septyanti et al., (2014) with the title Contribution of Student Information Literacy to the Writing Process of Scientific Works states that information literacy contributes to writing scientific papers at moderate levels.

Made Treyani (2017) with the title Measuring Information Literacy Ability of Students at SMAN 2 South Tangerang Using Empowering 8 in the Acceleration Class Program. The results showed that students' information literacy skills were good in completing paper assignments. Writing around writing skills and information literacy has been widely researched by several previous researchers, here student researchers will work in writing by writing scientific article workshops that are directly trained by expert sources

Research Methods

This research uses quantitative and qualitative research approaches using the weak experiment method because it does not have a control group. The research design used was The One-Shot Case Study Design, where only one group was given treatment and the dependent variable was directly observed to assess the effectiveness of the treatment (Fraenkel et al., 2012).

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Respondents of this study consisted of 30 high school students in Banten. The sample of this research is all indicators of information literacy and students' scientific article writing skills. Researchers provide a pretest and posttest in the form of portfolio assignments before and after the online workshop. The pretest is given to see the students' initial ability in writing and the extent to which students are literate, regarding the information provided. And posttest to see the effect of the workshop on students' writing skills and information literacy. Online workshops are held when students have not studied environmental change material. With the guidance of expert sources, students get intensive learning about scientific article writing and look for good sources for scientific article writing literature. The scientific article writing skills used in this study are the skills to write popular scientific articles with indicators developed by Nwogu (1991), Polman et al., (2014), (Hidayat (2019, unpublished paper) and the researchers' information literacy indicators use standards empowering big 6.

Researchers used a Likert scale for data analysis on students' information literacy abilities. The data obtained by researchers from filling in the google form provided by the researcher and filled in by the respondent. For the assessment of writing scientific articles, researchers collected data from the results of the pretest and posttest which were given in the form of portfolio assignments that had become products in the form of student scientific articles.

Findings & Discussion

The results of the analysis of activities in the form of data about the results of writing student scientific articles and student information literacy.

a. The results of scientific article writing

Table 1. The results of scientific article writing

Pretest	Treatment	Posttest
5,4	Workshop online the writing of popular scientific articles	8,3

Table 1 shows that there is a significant difference between the pretest and posttest scores before and after being given the popular scientific article workshop training. Online workshop training that is carried out can help students improve their writing skills.

Writing skills that are guided directly by expert sources have a good effect on improving students' writing skills. This is also supported by research that has been conducted by Uçar, & Yazıcı (2016) revealed in their research on The Impact of Portfolios on Enhancing Writing Skills in ESP Classes that students in the experimental class who were trained to write using portfolio assessment had higher writing skills simultaneously. significant compared to the control class.

b. Analysis Information Literation

Table 2. The results of Information literation

No	SUB VARIABEL	Average value		Category	
		Before	After	Before	After
1	Task defenition	46,7 %	80%	Enough	Very Good
2	Information retrieval strategis	40 %	80%	Enough	Very Good

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3	Location and access	42,5 %	80%	Enough	Very Good
4	Use of information	40%	66,7%	Enough	Good
5	Synthesis	40%	65,4%	Enough	Good
6	Evaluation	40%	66,7%	Enough	Good
Average		41,53%	73,3%	Enough	Good

Table 2 shows that the average information literacy indicator is in the good category. and in the table it can be seen that there is a clear difference between information literacy before and after being given treatment. Student information literacy is very good for training so that students are accustomed to accurate information and are familiar with reading scientific articles and are able to filter information that will be used by students in learning and in everyday life.

Indicators of information literacy provided after receiving scientific article writing workshop training were Task Definition, strategic information search, Location and access by 80%. this is a very good improvement for the information literacy level of students. and for the indicators of synthesizing student information, it is still in quite good condition at 65.4%, however, in synthesizing information, students have also experienced an increase after getting learning in the form of workshops.

Information literacy will provide a good contribution to the writing of scientific articles for students. This statement is supported by previous research conducted by Septyanti et al., (2014) with the title Contribution of Student Information Literacy to the Writing Process of Scientific Work that information literacy contributes to writing scientific papers at a moderate level.

Santi (2018) with the title The Relationship Between Information Literacy Competence and Writing Ability and Learning Achievement of AIRLANGGA University Students. The results showed that there was a positive relationship with moderate strength of relationship between information literacy and writing ability with a correlation coefficient value of 0.521> r table 0.197, which means that the higher the information literacy competence, the higher the writing ability of Airlangga University students. In addition, there is a positive relationship with the strength of a strong relationship between information literacy and learning achievement with a correlation coefficient value of 0.787> r table 0.197, meaning that the higher the information literacy competency, the higher the level of student achievement of Airlangga.

My field notes during data collection by capturing student data via google form and working on portfolio assignments by producing scientific papers of students stated that;

> *Based on the results of the research, online workshops on writing scientific articles had an influence on the writing of scientific articles of students seen from the average pretest results of 5.4 while the average posttest results were 8.3. This shows a significant difference in the writing of students' scientific articles. Students' understanding of information literacy is in good category. This is indicated by the average percentage of the achievement indicators of 73.3%.*
>
> *So the existence of online workshop training really helps students in writing scientific articles and improves students' information literacy skills. The results of data analysis showed a positive relationship between information literacy and students' ability to write popular scientific articles with a significance rcount 0.553> 0.230 rtable.* (Field Notes, may 2020)

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