

Enhancing Information Literacy Skills through Think Talk Write Online Learning Model

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Abstract: Enhancing Information Literacy Skills through Think Talk Write Online Learning Model. Objectives: This study aims to analyze the effectiveness of the Think Talk Write (TTW) learning model which is carried out online on students' information literacy skills at the tertiary level. **Method:** This study used a quasi-experimental method with a pretest-posttest non-equivalent control group design. The research was conducted on students of Indonesia University of Education social studies program with a total of 250 people consisting of 125 people in the experimental group and 125 people in the control group. **Findings:** The results showed that Think, talk, and write activities have an impact on providing students with opportunities to read, process, and utilize various information. **Conclusion:** The conclusion is that the application of the TTW learning model has a higher effectiveness than the application of conventional learning models in terms of achieving student information literacy.

Keywords: information literacy, Think Talk Write, online learning.

Abstrak: Meningkatkan Keterampilan Literasi Informasi melalui Model Pembelajaran Online Think Talk Write. Tujuan: Penelitian ini bertujuan untuk menganalisis keefektifan model pembelajaran Think Talk Write (TTW) yang dilakukan secara online terhadap kemampuan literasi informasi siswa di tingkat perguruan tinggi. **Metode:** Penelitian ini menggunakan metode eksperimen semu dengan desain pretest-posttest non-equivalent control group design. Penelitian dilakukan pada mahasiswa program studi Sosial di Universitas Pendidikan Indonesia dengan jumlah 250 orang yang terdiri dari 125 orang pada kelompok eksperimen dan 125 orang pada kelompok kontrol. **Temuan:** Hasil penelitian menunjukkan bahwa kelas yang menerapkan pembelajaran TTW memiliki rata-rata nilai posttest literasi informasi yang lebih tinggi dibandingkan kelas konvensional. Kegiatan berpikir, berbicara, dan menulis berdampak pada pemberian kesempatan kepada siswa untuk membaca, mengolah, dan memanfaatkan berbagai informasi. **Kesimpulan:** Kesimpulannya adalah penerapan model pembelajaran TTW memiliki efektivitas yang lebih tinggi dibandingkan penerapan model pembelajaran konvensional dalam hal pencapaian literasi informasi siswa.

Kata kunci: literasi informasi, Think Talk Write, pembelajaran online.

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■ INTRODUCTION

The application of learning during the Coronavirus Disease 2019 (Covid-19) pandemic had a significant impact on the model of implementing learning in schools. During the Covid-19 emergency, learning is carried out online and blended to reduce the potential for crowds to appear in institutions so as to reduce the rate of spread of the corona virus. Online learning allows teachers to share teaching materials in the form of power point slides, learning videos and others so that they can still facilitate students' learning. The application of online learning allows students to follow the learning process from their respective homes, although this learning is often constrained by the lack of availability of internet services in addition to cost constraints (Bundy, 2002; Cruickshank, 2019). Online or online learning is a change from conventional learning towards digital forms so that there are opportunities as well as challenges to efforts to improve student literacy (Deyrup, 2009; Daris Hadianto et al., 2022). Entering the XXI century, students are faced with demands to have basic literacy, especially information literacy. According to Bruce et al., (2006), information literacy is an ability that must be possessed by everyone, especially students because in teaching and learning activities students are exposed to a lot of information from various sources of information so that they must be able to select the correct information. Students need information to adjust their academic environment which is different from other circles (Bundy, 2002).

The amount of information available on various media today does not guarantee that someone is able to find, use, evaluate and utilize the information effectively (Fitzpatrick & Meulemans, 2011; D. Hadianto et al., 2021). Having a lot of information does not mean that all information needs are met. This is because the information obtained is not necessarily in

accordance with what is needed because many of them cannot be justified. Thus, it is very important to improve students' information literacy skills. Improving information literacy plays a role in building students' abilities in finding, analysing and utilizing information to complete assignments at school. Observations that have been made at universities in the odd semester of the 2020/2021 academic year of the science study program show that student learning outcomes are still low. The results of the observation on the results of the formative test indicate that students' information literacy during the application of conventional methods while studying from home during the Covid-19 pandemic is still lacking. This is because the level of student information literacy can be reflected in the magnitude of student achievement.

Information literacy contributes to learning achievement by 61.9%. Information literacy causes students to be able to choose and use information for appropriate problem solving and success in learning (Lecea & Perez-Stable, 2019; O'Brien & Russell, 2012). Based on the problems encountered in the secondary school, it is necessary to improve and select learning models to improve students' information literacy. The chosen learning model seeks to cause students to remain active in learning by looking for information related to learning materials even though learning is carried out online from home. Learning by encouraging massive information seeking will foster knowledge that can have an effect on improving student learning outcomes. One of the learning models that causes students to be active in finding and disseminating information related to learning is the Think Talk Write (TTW) learning model. The application of the TTW learning model encourages students to communicate their learning outcomes (Cruickshank, 2019; Marfleet et al., 2005). A similar opinion was expressed by (Erjavec &

Volèiè, 2010) that the TTW learning model is learning that implements thinking, speaking, and writing processes.

Giving students the opportunity to think, speak and write related to the material being studied will affect students' information literacy. According to Mubarok et al. (2018), information literacy is the basis of thinking and doing things in life, so information literacy is very important for everyone. Thus, the formulation of the problem proposed in this study is How effective is the TTW learning model that is applied online on student information literacy at the tertiary level? Good information literacy skills will have an impact on student learning abilities which in turn can contribute to improving student learning achievement.

■ METHODS

Participant

The sample in this study were students from the Indonesia University of Education from the social and science study program which consisted of 250 people who were distributed to 125 students for the experimental class and 125 students for the control class. The population in this study were all students at the Indonesian Education University, while the sample in this study were students from several social and science study programs as many as 250 students. The students sampled in this study came from several social and language study programs, including the Indonesian language education study program, library and information, Citizenship Education, and Sociology who are in the second to fifth semester of the 2021/2022 academic year. Research data in the form of pretest and posttest scores of information literacy. The rationale for selecting the sample for students is that the level of information literacy is sufficient so that the measurement of information literacy can be carried out objectively and accurately. In

addition, the level of information literacy needs at the student level is very necessary, especially in supporting the creation of scientific papers in fulfilling academic tasks at universities.

Research Design and Procedure

This study used a quasi-experimental method with a non-equivalent control group pretest-posttest design. In accordance with the research design chosen by the researcher, namely the One-Group Pretest-Posttest Design, the first researcher conducted a pretest on students to determine information literacy skills in supporting scientific publications. After getting a profile of students' information literacy skills, the researchers analyzed what aspects they lacked. Then the intervention was carried out using the Think Talk Write (TTW) learning model. At the time of the intervention, the teacher gave an explanation of the TTW model (thinking, speaking, and writing). At the beginning of the lecture process, the teacher provides topics as study material for lecture material. In the thinking phase, students are invited to think together by looking for some cases that exist in social life or previous studies on lecture material as material to deepen the material, then students are given the opportunity to speak and express their opinions according to their findings with each other. After that, it ends by giving students the opportunity to write down their findings using their own language which has been equipped with the findings of their friends. This intervention was carried out in groups and individually. The intervention process ends with an evaluation at the end of the learning process. After a few weeks, a posttest was conducted to determine information literacy skills after the intervention using the TTW model. The time interval between the pretest and the intervention was one week, the intervention was carried out 3 times on lecture material which took 3 weeks. From the

intervention to the posttest the distance is 2 weeks to avoid remembering the answers at the time of the intervention, so this study takes less than 10 weeks or half a semester.

Instrument

The instruments used include evaluation questions to measure information literacy skills at the pretest and posttest, as well as explanatory material about information literacy. Instruments to measure students' information literacy skills, namely a matter of descriptions of information literacy related to lecture material. The information literacy framework according to the standards of the Association of College and Research Libraries (ACRL) consists of five standard indicators as follows (Eynon, 2013) 1) Determining the Nature and Scope of Information, This indicator is used to determine student skills in terms of: (a) formulating information that required, (b) identify the type and variety of information formats, and (c) the ability to re-evaluate the nature and scope of the information obtained. 2) Accessing Information Effectively and Efficiently. This indicator is used to determine students' skills in terms of: (a) choosing a search method; (b) using search strategies such as boolean operators, truncations, URLs, and document types; and (c) citing, recording, and managing information sources. 3) Evaluating Information Based on Sources, this indicator is used to determine students' skills in terms of: (a) summarizing the main ideas quoted; (b) use the main idea from the information

obtained to construct a new concept; and (c) compare and analyze the information obtained with existing knowledge. 4) Using Information for Specific Purposes, this indicator is used to determine student skills in terms of: (a) using new information and previous knowledge to produce work; (b) communicating the results of the work with appropriate media; and (c) using a bibliography in making works. 5) Using Information Ethically, this indicator is used to determine students' skills in (a) using copyrighted information; and (b) identify information that needs to be accessed with special permission. Each indicator is represented by 5 questions. The final answer from the search and use of information carried out by students is in the form of articles both conceptually and reinforced with research evidence that they have found. The test given is in the form of a description test (short report) and multiple choice. In addition to test questions, researchers also use . Questionnaire instrument. The information literacy statement in the questionnaire was prepared by adopting the information literacy rules of Suryadi (2019). The type of questionnaire that is applied is a closed questionnaire in the form of positive statements with answer choices in the form of a Likert scale 1-4 (Table 1). The questionnaire was distributed on the google form link, then students were asked to choose one of the answer options that matched what the students experienced and felt. Hypothesis testing was carried out with Ananova and data processing was carried out with the help of the SPSS 17.0 data processing package

Table 1. Statements on the information literacy questionnaire

Information Literacy Model	Statement	Strongly Disagree	Don't agree	Agree	Strongly agree
Identification					
<i>Empowering</i> 8	I can easily explain the topic myself without the help of the teacher to explain	1	2	3	4

I can determine the target of the paper that I make	1	2	3	4
I understand the correct format for writing a paper	1	2	3	4
I can identify keywords to make it easier to find information according to the topic of the paper	1	2	3	4
I use books and the internet to search for information	1	2	3	4
Besides books and the internet, I use dictionaries, magazines, newspapers, and the surrounding environment as sources of information	1	2	3	4
Organization				
I can choose the information that suits my needs	1	2	3	4
I can identify information in the form of facts, opinions, and fantasies	1	2	3	4
I can identify accurate information	1	2	3	4
I can make a logical order of information	1	2	3	4
I understand information in the form of images (diagrams, structures, illustrations) and can sort out information that is more relevant to use.	1	2	3	4
Create				
I write my own opinion in the paper	1	2	3	4
I revise and edit papers myself or ask friends for help	1	2	3	4
I compiled a list of references based on the sources of information I used	1	2	3	4

Data Analysis

The data obtained related to information literacy skills at the time of pretest and posttest were processed using ANOVA with the help of

SPSS. Normality and homogeneity tests were carried out before the Anacova test was performed. The data normality test was based on the results of the Kolmogorov-Smirnov test,

both pretest and posttest data on information literacy in the experimental class and control class with the criteria of sig value. or $p > 0.05$ if normally distributed. The homogeneity test was carried out based on Levene's test on the pretest and posttest information literacy data with the criteria for significance value or $p > 0.05$ if homogeneous. Hypothesis testing was carried out through analysis of covariance (anakova). Researchers used the SPSS 17.0 application to test the hypothesis. In addition to being presented in the form of inferential statistics, the researchers presented the data in the form of narratives and diagrams with the aim of clarifying the data displayed. The data obtained are confirmed by

theory or previous studies to strengthen the research findings.

RESULTS AND DISCUSSION

The results of this study were explained from the pretest and posttest data on student information literacy. The information literacy data shows that the average pretest score of the experimental class students is 61.50 while the average score of the control class is 51.45. The average posttest score of the experimental class students' information literacy was 85.5 while the control class had a lower posttest average of 75.67. The summary of the results of the pretest and posttest is shown in Figure 1 below.

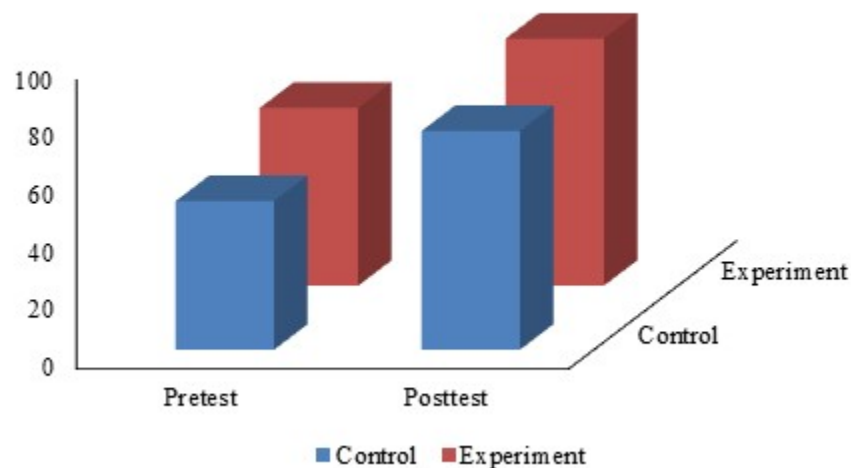


Figure 1. Average information literacy score of experimental and control class students.

The results of the normality test of data based on the results of the Kolmogorov-Smirnov test showed that both the pretest and posttest data on information literacy in the experimental

class and control class were normally distributed which was indicated by the sig value. or $p > 0.05$. The summary of the results of the normality test is shown in Table 2.

Table 2. Normality test results

Aspect	Class	Statistics	df	Kolmogorov-Smirnova		
				Sig. (p)	Alpha	description
Information Literacy	Pretest	.130	125	.200	0,05	Normal
	Experiment					
	Posttest	.143	125	.250	0,05	Normal
	Experiment					

Pretest Control	.167	125	.122	0,05	Normal
Posttest Control	.170	125	.260	0,05	Normal

Meanwhile, the results of the homogeneity test based on Levene's test indicate that the pretest and posttest data on information literacy have a homogeneous variance. The

homogeneity of the data is indicated by the significance value or $p > 0.05$. The results of the data homogeneity test are shown in Table 3.

Table 3. Summary of information literacy homogeneity test results

	Group	F	df1	df2	Sig. (p)	Alpha	Description
Information Literacy	Pre-test	.010	1	123	.932	0,05	Homogen
	Post-test	.261	1	123	.724	0,05	Homogen

Hypothesis testing was carried out through analysis of covariance (anakova). Based on the analysis of covariance using the SPSS 17.0 application, it was obtained that the average

posttest corrected pretest (Estimated Marginal Mean) information literacy data was obtained. The results of the Ananova test are shown in Table 4.

Table 4. Average posttest corrected pretest

	Group	Pretest	Posttest	Average Corrected	Notation
Information Literacy	Experiment	2.8546	3.5654	3.463	a
	Control	2.7431	2.9745	2.894	b

The average posttest score of information literacy in the experimental class was 3.46 (notation a) which was higher than the average in the control class with a score of 2.90 (notation b). Based on the analysis of covariance at an alpha

of 0.05, it showed a significant difference in the average corrected posttest score between the experimental class and the control class. Ananova test results are presented in Tables 4 and 5.

Table 5. Results of covariance analysis

	Source	Type III Sum of Squares	df	Mean Square	F	Sig. (p)	Partial Eta Squared
Information Literacy	Corrected Model	88.945	2	52.821	5.36	.035	.345
	Intercept	380.235	1	423.312	48.8	.002	.623
	Pre-test	.180	1	.179	.018	.895	.001

Group (Treatment)	82.832	1	83.781	8.20	.006	.185
Error	356.423	245	12.153			
Total	3756.03	250				
Corrected Total	424.312	249				

Based on the analysis of covariance, the pretest obtained a value of $F = 0.018$ and a significant value (p) = 0.895, meaning that the value is greater than alpha 0.05, so the test results indicate that the pretest score has no significant effect, meaning that there is no linear relationship with the posttest score. student information literacy. Meanwhile, the results of the analysis of group differences (treatments) showed a value of $F = 8.15$, with a p value = 0.007 or a p value < 0.05, meaning that the treatment had a significant effect on the information literacy score. In other words, the application of the TTW learning model is more effective than the application of the conventional learning model to students' information literacy which is reflected in the information literacy score of the class that applies TTW learning which is significantly higher than the conventional class score. These findings indicate that the implementation of the TTW learning model has a positive impact on increasing students' information literacy.

The findings of this study are in line with the research findings of (O'Brien & Russell, 2012) that the application of the TTW learning model contributes to improving students' information literacy skills. The findings of this study are also in line with the opinion of (Khan & Idris, 2019; Sturtevant & Kim, 2010) that the use of the TTW model in literacy learning will contribute to improving students' ability to have good literacy. The students' information literacy ability which increased significantly in the experimental class was the contribution of the application of the TTW model which gave students the opportunity to obtain relevant, reliable, and valid information

through efforts to search various sources of information either through the internet, textbooks, and other learning resources. In TTW learning, students are encouraged to continue to seek and use information to complete the task of preparing papers which are the main activities of implementing the TTW learning model. A person's ability to identify, find, evaluate, use information for problem solving and communicate information to others well can be said that someone has good information literacy (Al-Aufi et al., 2017; Špiranec & Pejova, 2010).

The increase in information literacy of experimental class students can be related to the impact of each stage of the TTW learning model activity. The TTW learning model is implemented in three stages, namely Think, Talk and Write. Think activities have an impact on providing students with opportunities to read, process, and utilize various information. Giving students the opportunity to find many reading sources and think about their usefulness will be able to improve students' abilities, skills, and insights about the information they choose (Griffin & Ramachandran, 2010; Marfleet et al., 2005). Furthermore, the ability to find and use this information is a provision for self-development in learning and working activities. The second activity of implementing the TTW model is talk. This second activity is in the form of student discussions in groups so that they can contribute to improving students' ability to exchange information (Lantz & Brage, 2006; McClaren, 2019). Activities to exchange information can facilitate students to practice good communication skills. According to (Lupton, 2008) learning by

conducting group investigations causes students' interest in learning to be higher, learning more meaningful, and improving students' communication skills.

Having the ability to communicate effectively indicates a person has good information literacy. The third activity in implementing the TTW model is writing. This activity provides support for the ability to write students' information literacy results. The TTW learning model can significantly improve writing skills. Writing is the estuary of reading, evaluating and utilizing information, thus, learning activities that facilitate students to write a lot can have an impact on the development of their information literacy (Schlesselman-Tarango, 2014; Shane & Shane, 2005). Writing ability is strongly correlated with information literacy, because someone who is literate in writing will have the ability to recognize information needs, evaluate information well, and create new knowledge with the information he has. Furthermore, efforts to improve information literacy were carried out by exploring and compiling information in written works (Swanson, 2005; Whitehurst, 2010).

The application of the TTW model in this study was carried out through online learning, thus providing a different and higher challenge than TTW learning which is usually done offline. The application of the online TTW model allows students to carry out asynchronous activities so that they are more flexible in finding and sorting useful information. Distance learning carried out online can develop independent learning and increase the challenge of finding information so as to increase students' information literacy. This is in accordance with the opinion of (Schlesselman-Tarango, 2014; Whitworth, 2006), learning more independently or without direct guidance from the teacher will spur students to seek various information relevant to learning materials and homework assignments that

students must do. Giving students the opportunity to seek information independently will have a positive impact on the development of information literacy and students become critical and logical thinking and do not easily believe the information obtained (McClaren, 2019; Neely-Sardon & Tignor, 2018; Swanson, 2005)

■ CONCLUSIONS

The conclusion of this study is that there is a difference in effectiveness between the online TTW learning model and the conventional learning model on students' information literacy. The TTW learning model has a higher effectiveness than conventional learning. Thinking, speaking, and writing activities have an impact on providing opportunities for students to read, process, and utilize various information. Providing opportunities for students to find many reading sources and think about their uses will be able to improve students' abilities, skills, and insights about the information they choose. Based on the conclusions of the study, teachers are advised to integrate the TTW learning model with topics that discuss material related to students' daily life problems. Learning topics related to students' daily lives generally attract students to think, talk, and write even though learning is done from home online. Students need to continuously strive to improve information literacy through reading, discussing and writing activities.

The implication of the research is the importance of integrating life problems faced by students into the learning process. This can make students enthusiastic in participating in the learning process, so this TTW model can be used in various learning materials. In the process of discussing the material in depth, the teacher can use TTW to be more effective in understanding the lecture material. This study has several limitations, namely the sample comes from a group of social studies programs, the topics are limited

to social topics, and only taken from one university and only done online. For further research, the researcher recommends testing this TTW model by involving students from several universities, various study programs, and being tested directly or offline.

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