

# FLIPPED CLASSROOM LEARNING INNOVATION AND CRITICAL THINKING ABILITY OF STUDENTS ON ARGUMENTATION WRITING SKILLS

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**Abstract:** *Flipped classroom Learning Innovation and Critical Thinking Ability of Students on Argumentation Writing Skills.*

The purpose of this study is to explain and determine the effect of the Classroom flipped model and the ability of students to think critically. This research is a type of quantitative research using an ex post facto approach with a descriptive correlation design. The research population is fifth-grade students with a total of 25 students. Sampling is done by the saturated sample technique, which uses all members of the population as a sample. Data collection uses the questionnaire and documentation method. In analyzing the data using statistical methods with the product-moment correlation formula and two predictor regression. The results of the study provide information 1) There is an influence of the *flipped classroom* learning model on the ability to write arguments ( $r_{count} = 0.745 > r_{table} = 0.396$ ). 2) There is an influence of critical thinking ability on the ability to write arguments ( $r_{count} = 0.608 > r_{table} = 0.396$ ). 3) There is a simultaneous influence between the Classroom flipped learning the model and the ability to think critically and the ability to write arguments ( $F_{reg} = 26.4 > F_{table} = 3.44$ ).

**Keywords:** *Flipped classroom* learning model, critical thinking skills, writing arguments.

**Abstrak:** *Inovasi Pembelajaran Flipped classroom dan Kemampuan Berpikir Kritis Siswa terhadap Keterampilan Menulis Argumentasi.* Tujuan penelitian ini adalah menjelaskan dan mengetahui pengaruh model *flipped classroom* dan kemampuan berpikir kritis siswa terhadap keterampilan menulis argumentasi. Penelitian ini adalah jenis penelitian kuantitatif menggunakan pendekatan *ex post facto* dengan desain deskriptif korelasi. Populasi penelitian yaitu siswa kelas lima dengan jumlah 25 siswa. Pengambilan sampel dilakukan dengan teknik sampel

jenuh, yaitu menggunakan seluruh anggota populasi sebagai sampel. Pengumpulan data menggunakan metode angket dan dokumentasi. Dalam menganalisa data digunakan metode statistik dengan rumus korelasi *product moment* dan regresi dua prediktor. Hasil penelitian memberikan informasi 1) Ada pengaruh model pembelajaran *flipped classroom* terhadap kemampuan menulis argumentasi ( $t_{hitung} = 0,745 > t_{tabel} = 0,396$ ). 2) Ada pengaruh kemampuan berpikir kritis terhadap kemampuan menulis argumentasi ( $t_{hitung} = 0,608 > t_{tabel} = 0,396$ ). 3) Ada pengaruh secara simultan antara model pembelajaran *flipped classroom* dan kemampuan berpikir kritis dan kemampuan menulis argumentasi ( $F_{reg} = 26,4 > F_{tabel} = 3,44$ ).

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**Kata kunci:** Model Pembelajaran *flipped classroom*, kemampuan berpikir kritis, menulis argumentasi

## INTRODUCTION

In the 21st century, all teachers and students in Indonesia are required to have good learning skills and teaching methods. The demand is caused by the influence of human lifestyles, the development of science and technology, and communication, one of which is in the field of education. The interrelations between science, space and time factors are increasingly narrow, resulting in success in the fields of science and technology in the world of education (Tim BNSP, 2010).

Independent learning is the 21st-century demand for students. Students not only gain knowledge from the teacher but are also encouraged to find out for themselves from other relevant reference sources. With the development of very sophisticated technology, students can certainly find all the information from the internet easily. In addition to solving problems, students are also required to be able to identify to solve problems in learning. Creative, innovative, and critical thinking are things that students need to provide to teachers (Boa, Wattanatom, & Tagong, 2018). Critical thinking is the ability of students who must be developed because critical thinking is a way to find and solve a problem that is based on scientific thought (Ismail, Harun, Zakaria, & Salleh, 2018).

The ability to think critically exists in every human being, one of them is elementary school students. Humans from the age of seven years to twelve years have the function to imagine, think and remember. These three functions will develop so that children begin to think critically (Djaali, 2008). Piaget (1932)

explains that the stage of concrete operations is characterized by the development of logical systems of thought. So, students starting in first grade can develop logical systems of thought and practice on learning problems in class.

Indonesia has problems in the ability to think critically in the field of education. Data from (Kemendikbud, 2016) shows that the achievement of the Program for International Student Assessment (PISA) scores increased in scientific, mathematical, and reading competencies in 2015. However, reading competency has not shown significant improvement, only up by two points (2012 get 396 points to 397 in 2015. From PISA data in 2015, Indonesia is still ranked 67th out of 72 countries around the world Based on these data, students' reading ability is still relatively low.

Reading and writing skills are language skills that are closely related to the thought process. Before students practice writing, students are told to read texts. Writing is a complex activity because one must master languages, such as structure, grammar, and spelling. One of the fifth-grade students' writing skills in writing arguments. In writing argumentation, students can express ideas through data in the form of facts so that students can convince readers. Also, students can express their ideas and ideas critically. Through critical thinking, students can evaluate their own opinions.

Critical thinking is one aspect that must be emphasized because according to (Boa et al., 2018) critical thinking becomes the highest priority and becomes the demands of the world of work. This demand is a concern for schools in

Indonesia. Ismail et al. (2018) also explained that students are required to have critical thinking skills because they can solve problems effectively and can compete with developments and changes in the industrial era 4.0.

One problem in the ability to think critically in elementary school students is the ability to argue as outlined in writing. Writing argumentation is the ability to sequence between words to be coherent and logical sentences so that it can be understood by the reader. In addition to being coherent and logical, expressing opinions based on facts and evidence can also convince readers (Saputra, 2016).

The basis of argumentative writing is critical and logical thinking. Therefore, the writer must prove with the facts so that he can produce the argument correctly or not (Keraf, 2010). Through whether or not the argumentation writing, the reader can be influenced, able to accept attitudes and take action according to the wishes of the author (Dhiksy, 2010). Thus, writing argumentation skills are very necessary for Indonesian language lessons in primary schools because argumentation is the basis of thinking activities.

Education is said to be successful if learning in the classroom can be carried out well and the teacher can master the learning process well. Teachers become the foundation of the learning process so that an appropriate learning model is needed so that students' thinking processes can develop. Thus, teachers are expected to be able to apply effective and fun learning models for students.

The results of the study Maolidah, Toto Ruhimat, & Dewi (2017) explained that the *Flipped classroom* was effectively used to improve students' critical thinking skills. Through the *Flipped classroom* model, teachers can become more interactive and can create a learning atmosphere at home or in the classroom. The purpose of the *flipped classroom* is to produce changes in attitudes, learning outcomes, and good thinking skills. Research Faqih (2017) produces data analysis that *flipped classroom* can influence critical thinking skills and learning outcomes. Murillo-Zamorano, López Sánchez, & Godoy-Caballero (2019) research also confirms that *flipped classrooms* have a positive effect on students' knowledge, skills and involvement so that *flipped*

*classrooms* are recommended and useful for academics.

Based on the research results above, the *flipped classroom* is highly recommended to overcome the problem of critical thinking in the 21st century, namely the ability to write arguments. The concept of the *flipped classroom* is that students learn and understand the material from the teacher at home, just like students when studying at school and students work on and complete assignments at school that is usually done at home (Bergman J., 2012). Lai & Hwang (2016) added that a *flipped classroom* is the right way to reduce learning time in class by maximizing communicating with several parties, such as teachers, students, and people around the environment.

This *flipped classroom* uses learning media that can be accessed directly by students. This model not only learns from video, but also emphasizes how to use time in class to improve students' knowledge and critical thinking skills (Nerguizian, Mhiri, Mounier, Lemieux, & Dahmane, 2014).

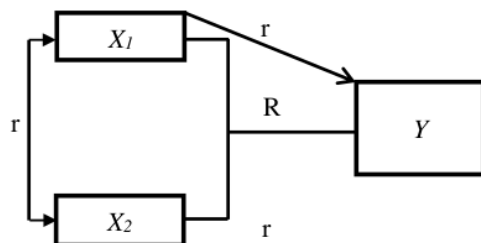
The learning media that is often used in the *flipped classroom* model is video. Through video media, students can learn freely in understanding the material wherever and whenever so that students are interested and enthusiastic. That is because the video is flexible, can be played back, stopped, or pushed back as desired by the user. Thus, based on the theories and facts that have been explained, researchers are interested in researching the effect of the Classroom flipped model and the ability of students to think critically on writing argumentation skills.

## METHOD

This study uses an ex post facto correlation design. Data collection does not require experimentation, but data exists on the subject of research, namely oneself. Siregar, (2014) adds that ex post facto does not require direct control of the independent variables because the phenomenon is difficult to manipulate. Thus, this research is called descriptive correlational.

In this study, there are three research variables. The first independent variable ( $X_1$ ) is the *flipped classroom* model and the second variable ( $X_2$ ) is the ability to think critically,

while the argument writing skills are the dependent variable (Y). For more details, here is the pattern of relationships between variables.



**Picture 1. Ex Post Facto Correlational Descriptive Research Design (Sugiyono, 2015)**

#### Information:

$X_1$  : *flipped classroom* model  
 $X_2$  : The ability to think critically  
 $Y$  : argumentation writing skills

The research sample is class 5A at SDN Sumoroto 02, Ponorogo with 25 students, while the population is the whole class of five consisting of two classes, namely classes 5A and 5B with 52 students. The instrument used was data about the *flipped classroom* learning model and questionnaire. The questionnaire to measure the ability to think critically is a direct questionnaire, while a closed questionnaire is for calculating a Likert scale. Likert scale is used to measure a person's opinion about social phenomena. This study uses statements with five choice answers (strongly agree, agree, doubt, disagree, and strongly disagree (Sugiyono, 2015)).

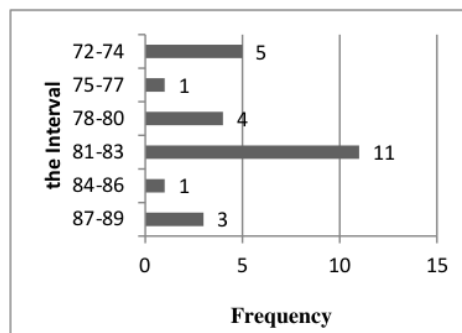
The collection technique uses three data collection instruments, namely (1) the *flipped classroom* learning model instrument by providing a questionnaire of 20 items; (2) instruments of critical thinking; (3) and tests writing arguments. *Flipped classroom* model instruments and thinking are given to students, while the measurement of the ability to write arguments is done by written tests. The number of questionnaires for the *flipped classroom* learning model provided 20 statement items and 20 critical thinking statements items so that the total questionnaire items were 40 items.

## Result and Discussion

### RESULT

#### Description of *flipped classroom* learning model data

Based on the results of data analysis, it can be described that with N as many as 25, a range of 20-100 obtained calculations: mean (M) = 80.32, median (Me) = 81.18, mode (Mo) = 82.9, standard deviation (SD) = 4.58, a maximum score of 88 and a minimum score of 72.



**Picture 2. *Flipped classroom* Learning Model**

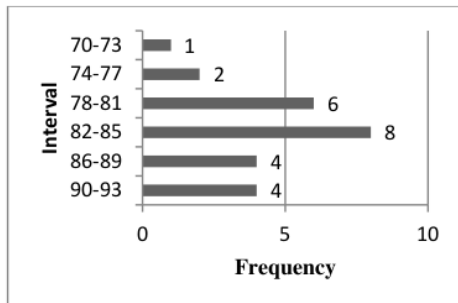
From picture 2 it can be explained that the range of class 87-89 has a frequency of 3, the range of class 84-86 has a frequency of 1, the range of class 81-83 has a frequency of 11, the range of class 78-80 has a frequency of 4, the range of class 75-77 has a frequency of 1, and the class range 72-74 has a frequency of 5.

The results of data analysis about the *flipped classroom* learning model on the ability to write arguments are ( $r_{\text{count}} = 0.745$  and ( $r_{\text{table}} = 0.396$ , the significance level is 5% and the number = 25. To see significant or not, the price of  $r_{\text{count}} = 0.745 > r_{\text{table}} = 0.396$ . This explains that  $H_0$  was rejected and  $H_a$  was accepted. So, it can be concluded that there is an influence of the *flipped classroom* learning model on the ability to write fifth grade arguments at SDN Sumoroto 02.



### Data Description Critical Thinking Ability

Based on the results of data analysis, it can be described that with N as many as 25, a range of 20-100 obtained calculations: mean (M) = 83.34 median (Me) = 83.25, mode (Mo) = 83.07, standard deviation (SD) = 5.24, a maximum score of 92 and a minimum score of 71.



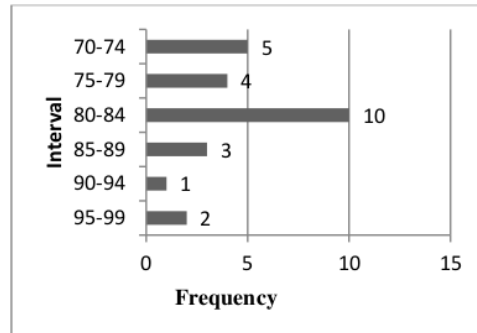
Picture 3. Critical Thinking Ability

From picture 3 it can be explained that the range of class 90-93 has frequency 4, range of class 86-89 has frequency 4, range of class 82-85 has frequency 8, range of class 78-81 has frequency 6, range of class 74-77 has frequency 2, and the class range 70-73 has a frequency of 1.

The results of data analysis about the ability to think critically about writing argumentation skills are ( $r_{\text{count}}$ ) = 0.608 and ( $r_{\text{table}}$ ) = 0.396, the significance level is 5% and the amount of N is 25 after consultation with ( $r_{\text{table}}$ ). To see significant or not, the price  $r_{\text{count}} = 0.608 > r_{\text{table}} = 0.396$ . This shows that  $H_0$  was rejected and  $H_a$ . Thus, there is an influence of the ability to think critically on the ability to write fifth grade arguments at SDN 02 Sumoroto.

### Description of Writing Argumentation Capabilities

Berdasarkan hasil analisis data, maka dapat dideskripsikan bahwa dengan N sebanyak 25, rentang 70-100 diperoleh penghitungan: mean (M) = 81.4, median (Me) = 83.25, modus (Mo) = 86.95, standar deviasi (SD) = 6.97, skor maksimal 97 dan skor minimal 70.



Picture 4. Argument Writing Skills

From picture 4 it can be explained that the range of class 95-99 has frequency 2, range of class 90-94 has frequency 1, range of class 85-89 has frequency 3, range of class 80-84 has frequency 10, range of class 75-79 has frequency 4, and the class range 70-74 has a frequency of 5.

The results of data analysis about the effect of the *flipped classroom* learning model and the ability to think critically on writing argumentation skills, obtained criterion coefficient Y with predictors  $X_1$  and  $X_2$  shows  $r_{\text{count}} = 0.838$  consulted with  $r_{\text{table}}$  with a significant level of 5% knowing  $r_{\text{count}} = 0.838 > r_{\text{table}} = 0.396$ . From the results of calculations using the F regression formula obtained  $F_{\text{reg}} = 26.4$  then consulted with  $F_{\text{table}} = 3.44$  with a significant level of 5% so  $F_{\text{reg}} = 26.4 > F_{\text{table}} = 3.44$ . So  $F_{\text{reg}}$  is greater than  $F_{\text{table}}$ ,  $H_0$  is rejected, while  $H_a$  is accepted. So, the hypothesis that there is an influence of the *flipped classroom* learning model and the ability to think critically on the ability to write a fifth grade argumentation at SDN 02 Sumoroto.

### Discussion

Discussion of the results of this study is divided into three parts, namely (1) the meaning of the influence of the *flipped classroom* learning model on the ability to write arguments, (2) the meaning of the influence of critical thinking skills on the ability to write arguments, and (3) the meaning of the influence of the *flipped classroom* learning model and the ability to think critically about the ability to write arguments. Before explaining the elaboration of the results of the study, the limitation of this study is the focus on learning to write arguments related to critical thinking skills

and their application using the *flipped classroom* model.

First, the meaning of the effect of the *flipped classroom* learning model on the ability to write arguments. Through the application of *flipped classrooms* to the learning of argumentation writing skills, an effect is produced on learning outcomes. The results of students' argument writing are better than the previous grades because *flipped classroom* learning helps students have many activities outside the classroom. This was confirmed by Bergman J., (2012) explaining that many *flipped classrooms* have time outside of class, they will not experience difficulties in understanding the material. Students can learn in advance through instructional videos that have been given by the teacher about the ways or steps in writing paragraphs of argument. From the results of the analysis of student data in the form of the results of writing an argument, the average student score is 81.4.

The implications of *flipped classroom* on argumentation writing skills are (1) before learning to write argumentation begins, the teacher has prepared a learning video in the form of news in one of the television stations and argument writing material; (2) the teacher provides videos and music for students to study at home; (3) when students come to school, teachers only ask for material that is not yet understood and then discuss it by completing assignments in class. When learning, students have studied at home. Student activities are only discussing and completing assignments at school. From the implementation of the *flipped classroom*, the model has a positive effect on the school because it can overcome student learning difficulties and the rest can graduate in learning material (Reidsema, Carl, 2017).

Second, the meaning of the influence of critical thinking skills on the ability to write arguments. To get the results of the ability to write good arguments, students need a means of developing reasoning and criticism. If critical thinking skills are instilled and developed in students, intelligent human resources in thinking will be created; wise in deciding a problem; and critical in solving problems (Pujiono, 2012).

The implication of the ability to think critically in writing argumentation consists of five stages, namely the ability to remember, discuss, analyze problems, reconstruct, and

assess. In the practice of writing arguments, the teacher has applied the five stages of critical thinking to students (Vong & Kaewurai, 2017). The remembering activity is students remembering the material from the learning video prepared by the teacher. The ability to discuss is done through a process of discussion about news that has been seen from the learning video. Students can discuss how to respond to news about 5W + 1H on events in the news. The ability to analyze the problem is done to achieve a rut in writing arguments. The teacher's command in reconstructing activities is to develop ideas and ideas so that the writing of an argument seems clear and easy to understand. Knowledge consists of the flow of writing (content organization), grammatical structure, conjunctions, punctuation, and correct or good spelling. The ability to judge is that students are given the opportunity for the teacher to correct the work of their friends. If there are punctuation or spelling errors, students can correct them.

Third, the meaning of the influence of the *flipped classroom* learning model and the ability to think critically on the ability to write arguments. The implementation of the *flipped classroom* is a strategy to replace conventional learning patterns. The teacher does not play an active role because learning is student-centered. Student-centered means that students are more active and think critically to produce paragraphs of argument. Critical thinking activities begin with language stimulation and the results of thinking will be meaningful if they are written in written language symbols (Vong & Kaewurai, 2017).

This *flipped classroom* strategy is closely related to the use of technology (in the form of video) for learning materials to write arguments through critical thinking activities. By utilizing critical thinking skills, students can write paragraphs of argument creatively and logically to produce the right writing (Irwansyah & Munasiah, 2018). There are five steps students make in writing paragraphs of argument, namely determining the topic and theme, developing a paragraph outline, gathering data or facts, and developing a paragraph outline. Thus, the benefits of writing an argumentation are students being able to understand the characteristics and steps of writing an argumentation, skilled at expressing ideas and ideas logically, skilled at

solving problems, and skilled at using the good and correct language.

The application of the *flipped classroom* model is still not widely applied in Indonesia. However, some research results that use *flipped classroom* show positive and useful results. Saputra's (2016) research results explain the positive response is an increase in learning outcomes, learning becomes more effective, and learning motivation increases. This is also the use with the results of this study, with the influence of the *flipped classroom* learning model and critical thinking skills on the ability to write fifth grade argument at SDN 02 Sumoroto, showing that *flipped classroom* shows the results of learning to write argumentation increases to make students learn more effectively.

The use of the *flipped classroom* model as a teaching strategy indirectly monitoring students when writing arguments in elementary school is a renewal in this study. That is because *flipped classrooms* are still minimal in Indonesia, especially at the elementary school level. There is also no application of a *flipped classroom* that connects with writing argumentation skills. The recommendation for teachers is that teachers can apply *flipped classrooms* to all material in Indonesian language lessons. That is because the 2013 curriculum is centered on students so they can learn independently by providing learning videos at home or outside the classroom.

## CONCLUSION

Based on the results of data analysis from the research conducted, it can be concluded (1) there is an influence of students' ability to write arguments using the fifth grade *flipped classroom* model at SDN 02 Sumoroto; (2) there is an influence of critical thinking ability on the ability to write fifth-grade arguments at SDN 02 Sumoroto; and (3) there is an influence of the *flipped classroom* learning model and the ability to think critically on the ability to write arguments in the fifth grade of SDN 02 Sumoroto.

Based on the conclusions of the results of the research conducted, recommendations for future studies are (1) the *flipped classroom* model can be added with the help of other media, such as Edmodo, google classroom, or video; (2) the *flipped classroom*

model can be used as research at all levels of education and applied to other lessons.

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