Implication of Probing and Prompting Questions for Argumentation Writing Skills

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ABSTRACT

This article provides a basis for thinking that probing and prompting in learning to write can support the ability to develop arguments. Theoretical hypotheses of this research are (1) Probing and prompting can be strategic ways or steps that teachers can take to improve reasoning and strengthening in critical thinking, (2) Argumentation is a discourse learner that needs to be trained with reasoning and strengthening critical thinking. This research has been carried out by applying inferential statistical tests to see the significance of probing-prompting questions on the ability to write arguments. Based on the results of non-parametric statistical tests with the Mann Whitney t-test technique, the results obtained sig $0.000<0.05$. Based on this description, the results of this study state that there is a significant effect of using probing-prompting questions on the argumentation writing skills of junior high school students. Probing and prompting questions have a significant impact on writing skills which are carried out with evaluations in the form of basic questions and prompting questions applied by the teacher. The implications published through the application of probing and prompting questions are an increase in the ability in causality, truth fact disclosure, and logical sentences connection and diction. This shows that probing and prompting can be recommended as an innovative step in argumentation learning.

Keywords: Argumentation, Probing and prompting questions, Writing Skills.

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I. INTRODUCTION

Probing and prompting questions are processes of interaction as an important part of knowledge acquisition (Mikkola & Lehtinen, 2019). Natural language acquisition can be done in interactions that support the process of achieving competence. Some learning activities show the important role of both or one of them. In forming critical thinking patterns, for example in argumentation, probing and prompting are very essential. Forming a critical mindset in language production is the best way in education.

This article provides a basis for thinking that probing and prompting in learning to write can support the ability to develop arguments. Some evidence as a theoretical hypothesis shows that learning that emphasizes the thinking process and reasoning is very useful in practicing argumentation writing. Argumentation is a learning activity that can be applied with specific questions on the text or other thinking questions (with hint and probing questions as needed), (King, 2007). From this opinion, the picture that we can make for the theoretical hypotheses of this research are (1) Probing and prompting can be strategic ways or steps that teachers can take to improve reasoning and strengthening in critical thinking, (2) Argumentation is a discourse learner that needs to be trained with reasoning and strengthening critical thinking. Thus, it is necessary to study whether probing and prompting can have a significant impact in learning

argumentation discourse, especially in language classes. LeCun *et al*. (2015) show that argumentation and critical thinking are part of deep learning.

Fischer *et al*. (2014) state that there are three research points of view, namely research on the development of scientific reasoning, research on scientific argumentation, and research on approaches to support scientific reasoning and argumentation. In learning to write or edit arguments, the position of the scientific reasoning element is an aspect that students must understand its meaning. In Fischer's writing, it is known as SRA or scientific research argumentation. This is the first step that needs to be given to high school students by observing the elements that become social phenomena in writing material.

Some evidence in the learning phenomenon shows that there is a gap in the learning of argumentative texts in terms of understanding the stage of children's thinking development. More specifically, Wilson (2010) says that in the period of thinking development, there are three things that can be observed from the argument phenomenon, namely, (a) Children have at least rudimentary argument skills, (b) They can benefit from social reasoning, (c) Confirmation bias is present as soon as they start arguing, and (d) Children can fall victim to the same biases that affect adults when they use reasoning in the wrong context. Therefore, the strategy of directing reasoning and arguments is appropriate if it is presented in learning through the application of excavation

and guiding mindsets.

Today, Indonesia is carrying out an independent curriculum movement. The curriculum shows efforts to educate students to think critically, creatively, collaboratively, communicatively, and with confidence. Learning with innovative models and improving thinking intelligence, such as Problem Based Learning, Inquiry, Project Based Learning, Discovery Learning is an important point in the independent curriculum movement. The space for scripting about reasoning and logic is the subject of language. Therefore, educating students with Indonesian is not only a matter of literacy, but also a matter of reasoning, how they think and understand what they think in the context of the environment.

The material for writing arguments in junior high school is contained in the competence section written in the curriculum with the activity of editing argumentative texts. For a maximum of five meetings, students will explore the ability to edit argumentative texts. In learning a language, students at school are faced with the fact that they and their language must be socially accepted with all the colors of emotions they face, between the desire to be equal to their peers and the reality that they must become accepted by adults. Observing, the fact that students' language is a matter of social function, argumentation is present as a bridge to connect between emotions and social acceptance. Reasoning and logic are ways of making room for language gaps. From argumentation students learn to understand and create themselves with reasons they must be accepted and defended.

Basically, teenagers (high school age), according to Gee (2001), use language to fashion their identity. There are two classes, first, the working-class teens use language to fashion their identities in a way that is closely attached to a world of social and dialogic interaction. Second, the upper middle-class teens use language to construct their identities in a way that detaches itself from "everyday" social interaction and orients more towards their personal biographical trajectories through an "achievement space" defined by the (deeply aligned) norms of their families, schools, and powerful institutions in our society. Gee's study leads to teaching strategies that need to understand the characteristics of students by accommodating teenagers' needs (Legutke, 2012). Probing and prompting is the first step to understanding their way of thinking and putting their powerful institutions in the ability to answer questions during the lesson.

It is the area of logic that seeks to develop standards, criteria and procedures for the interpretation, evaluation and construction of arguments and argumentation used in natural language. "Logic" is best understood as the normative study of argument (Hitchcock, 2007). Reaching knowledge and skills in argument can be done by training in critical discourse analysis as a basis for understanding strategies for presenting facts and opinions in writing (Wuryaningrum, 2020). The problem of facts and opinions and the ability to distinguish them to filter the truth of the news needs to be instilled so that students become parties who are aware of the truth of information.

One of the things that can be done to guide students to achieve argumentative writing skills is to practice reasoning. Reasoning will lead students in constructing arguments with many adjustments, including adjustments to language choice, flow of exposure, and proof. In the learning process, proper reasoning can be achieved by giving probing questions to students. Darabi *et al.* (2012) said that probing prompting is a learning strategy by presenting a series of questions that guide and explore students' ideas. It creates conditions to jump-start thinking processes that are able to link students' knowledge and experiences with the new knowledge being studied.

From this description, probing prompting can be used to explore students' thinking skills. Probing prompting is a question-based learning strategy. This question-and-answer session can be positive or negative. Operationally positive questions can be defined as questions that can help students convert temporary incorrect answers into correct final answers. Negative questions arise when students switch from the correct answer to the wrong answer after being asked the question.

Anthony *et al.* (2014) described the seven stages of probing prompting learning, seven stages of probing techniques which were then developed with prompting. In this study, these seven stages were implemented in learning to write arguments, which would be described in the initial identification stage, action activities, and clarification activities, compiling activities, evaluating activities, and compiling activities according to the evaluation results. In this case, the probing-prompting questions that can be given can be observed in the following Table I.

TABLE I: TYPES OF QUESTIONS IN ARGUMENTATION

Techer Questions	Types of Information
Fact	Time
	Ingredients
	Event logical procedure
	Color or shape
	Who (name) or what
Opinion	Situation
	Feeling
	Response
	Estimation
	Intensity

The teacher gives questions that lead students to think at a higher level, so that students can answer questions according to basic competencies or indicators, for example, in practice. The questions asked will be very good if they are given to several different students so that all students are involved in all probing prompting activities. The teacher poses a final question to different students to further emphasize that the indicator has really been understood by all students.

In various best practice observations, not all teachers carry out argumentation learning procedures by paying attention to sufficient reasoning aspects. In the case of language learning recommendations, so far, there is no fact that language education places argumentation more important than other texts. Therefore, research to see and prove the implementation of probing and prompting questions in argumentation scripting learning becomes very essential. The fact of all this is that there is evidence that there are aspects that teachers need to consider in understanding the knowledge of argumentation.

II. METHOD

A. The Conceptual Framework and Hypothesis

The conceptual framework and hypothesis of this research is to test and analyze the effect of probing prompting question learning on the ability to write arguments. Based on the literature review and the conceptual framework of the research, the following hypotheses can be presented:

1) H1: There is no significant effect between the learning process and probing-prompting question on the ability to argument writing skills.
2) H2: There is a significant effect between the learning process and probing-prompting Question on the ability to argument writing skills.

B. Data Collection

This research has been carried out by applying inferential statistical tests to see the significance of probing-prompting questions on the ability to write arguments. This study was applied to junior high school students for the material for editing arguments written by friends in class. To understand what aspects, need to be evaluated, the teacher's direction in understanding the structure and substance of the argument is a step in organizing knowledge. The teacher must be a model in evaluating an argument. The output of this learning is an argument that has been well edited according to the structure, linguistic rules, and substance that contains opinions and facts that show reasoning.

Data collection has been implemented through a questionnaire containing student responses about probing and prompting questions that are applied by the teacher in learning. This data was taken in 8th grade students at Junior High School. There are three classes studied (93 students). They fill in the practice that the teacher does in class. The questionnaire distributed consists of the questions and the ranking scores mentioned in Table II.

Class A and class B were tested with an argumentative writing test according to the results of editing done by friends in class. Probing-prompting activities are carried out during the editing process by classmates and by the teacher. The application of the evaluation is carried out with a rubric containing the accuracy of the structure, the substance of reasoning and presentation of facts, and drawing conclusions. The data shows the values in table X1 for class A and table X2 for class B. Each component has a minimum score range of 1-3 (less, enough, good), each component has 2 questions, so a minimum score of 6 and a maximum of 18.

TABLE II: APPLICATION OF PROBING AND PROMPTING QUESTIONS

Kind of Question		Score		
Probing and prompting	Question	1	2	3
Causality	General causality connection			
	Procedural causality connection			
Truth Fact	Numerical fact			
	Condition fact			
Logical Sentence connection and diction	Reasoning about conjunction			
	Reasoning about diction			

III. RESULTS AND DISCUSSION

Based on data collection, the class can be divided into two: a class with poor probing and prompting with a score of 6-12 and a class with a good category on a score of 13-18.

The two classes are grouped based on the results of the questionnaire. The second stage of data collection is carried out. Class A is a class with a score of 6-12 (41 students) and class B (52 students) with a score of 13 to 18.

The next step is to analyze the effect of probing-prompting questions on students' argumentative writing skills which can be presented in the following stages.

A. Data Normality Test

Comparative analysis of the argumentation writing ability of students from the group using low probing prompting and the group using high probing prompting used SPSS analysis with the t-test technique. The output of the analysis can be presented in the following Table III.

TABLE III: ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST

		X1	X2
N		41	51
Normal Parameters[a,b]	Mean	9.3415	15.3725
	Std. Deviation	1.60639	1.49614
Most Extreme Differences	Absolute	0.140	0.153
	Positive	0.140	0.141
	Negative	-0.122	-0.153
Test Statistic		0.140	0.153
Asymp. Sig. (2-tailed)		0.043[c]	0.005[c]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Based on the output of the normality test of data with SPSS with the Kolmogorov-Smirnov one sample technique, it was obtained that the ability to write arguments in the low probing-prompting group (X1) was 0.043<0.05, thus the data was not normally distributed. Furthermore, the sig value of the ability to write arguments in the high probing-prompting group (X2) was 0.005<0.05 with the data not normally distributed. Based on this, to test the difference in argumentation writing ability between the low probing-prompting group and the high probing-prompting group, t-test analysis was used using the Mann-Whitney U test technique.

Based on the results of non-parametric statistical tests with the Mann Whitney t-test technique, the results obtained sig 0.000<0.05. Thus, the research hypothesis H1 has a significant effect on probing-prompting questions on the ability to write arguments is accepted. While the research hypothesis H0 there is no effect of probing-prompting questions on the ability to write arguments is rejected. Based on this description, the results of this study state that there is a significant effect of using probing-prompting questions on the argumentation writing skills of junior high school students.

TABLE IV: MANN WHITNEY U. TEST RESULTS

Test Statistics[a]	
	Argumentative
Mann-Whitney U	0
Wilcoxon W	861.000
Z	-8.257
Asymp. Sig. (2-tailed)	0

a. Grouping Variable: Team.

IV. The Implications of Probing And Prompting in Argumentation Learning

Implications learning with probing and prompting questions gives students the opportunity to understand causality. Process causality and general causality are not limited to processes. Causality of the process or procedure shows the flow of logical thinking, sequence, and problem solving. In analyzing, and this is necessary in editing arguments, Henkemans (2001) mentions that analyzing argumentative discourse, the analyst attempts to get a clear overview of the relevant elements in the text and of the relations between these elements. Even in an explanation, the nature of the argument cannot be limited only to explanations that show causality. Thus, causality is part of the argument. Argumentation is greater than causality but can be trained to develop reasoning.

Argumentation is defined as language, speech that shows construction as a relation between arguments and conclusions, such that arguments have as properties polarity, force, order, linguistic marking, and logical impairment. The function of an argument is to assign an argumentative orientation to an utterance and make acceptable conclusions that would be unacceptable without the presence of an argument. How an utterance can be accepted can only be done by applying locutions and illocutions which show causality as one way. Moreover, probing-prompting is the best way to help students make a relation between arguments and conclusions. Even further, Moeschler (2003) states that argumentation is a special use of causal relations in discourse, implying causality between states belonging to two causal chains. Thus, it is not strange if there are recommendations for language education to educate rationality in argumentation through causality. In developing countries, where there is a flow of change and direction for public opinion to develop in the direction the agency needs, educating the rationality of a statement is essential.

The next discussion is the relationship of argument with Truth Fact. Fiorin (2014) states that argumentation is a fact of language and not a discursive fact, this text aims to show how discursive theories can work with the issue of argumentation. Microanalysis as adopted by integrated pragmatics does not limit argumentation, even though argumentation is used as one of the elements in critical discourse analysis. As Wagemans (2016) also says new metaphors become meaningful in the presence of truth. Truth in as fact is a necessity in analyzing argumentation. On the one hand, metaphor is part of the argument. Facts are more and more above symbolization in metaphor. However, arguing is the proof of a hypothesis. Hypothesis is developed that an argument is accepted only if the reasons it provides seem plausible, relevant, oriented in favor of the conclusion, and sufficient to support it (Apothéloz *et al.*, 1993). Fact and truth are things that will support how an argument is accepted.

Logical sentences connection and diction are the probing and prompting parts which are an important part of argumentation. Sentences in contexts in information systems, which cannot be derived from the sentences by using logical reasoning methods (Sun *et al.*, 2005). In the argument, the presence of logical sentences is essential. Arguments are logical connection sentences. Logical sentences can lead to the use of semantically appropriate word formation as well as relations between words and unity of meaning in sentences. Likewise on the problem of diction. The diction chosen in the argument certainly has the power to describe the situation. Diction can lead to understanding. Diction and language style are the most important things in rhetoric (Fahnestock, 2011). Argument is an important part of rhetoric. To produce persuasive power, diction must be chosen according to the need to support the purpose of the argument. Therefore, in probing and prompting the teacher can cut off the question, "if x is so, then what is the meaning of this sentence? Why is the word x used? To generate persuasion in argumentation, not only the language employed, but also on attributes of the source/communicator, the audience, and the appropriateness and strength of the argument's claims given the pragmatic and discourse context of the argument" (Drumus *et al.*, 2020).

V. Conclusion

From the explanation above, several conclusions can be drawn about the implications of probing and prompting on the ability to write arguments based on the elements of structure, substance of reasoning and presentation of facts, and drawing conclusions. Quantitatively it can be stated that probing and prompting as a strategy to build reasoning and direct critical thinking skills have a good impact on learning. In other words, probing and prompting questions have a significant impact on writing skills which are carried out with evaluations in the form of basic questions and prompting questions applied by the teacher. The implications published through the application of probing and prompting questions are an increase in the ability in causality, truth fact disclosure, and logical sentences connection and diction. This shows that probing and prompting can be recommended as an innovative step in argumentation learning.

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