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Conference Paper

Misleading Reasoning in Teachers' Speech in the Learning Context

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Abstract

The purpose of this research was (1) to describe the various forms of misleading reasoning and (2) to explain the factors causing misleading reasoning in teachers' speech in the learning at SMP in Malang. The approach used was qualitative phenomenology. The research data were in the form of sentences, fragments, and oral discourses of teachers in the context of Indonesian language learning, science, social studies, and mathematics in two junior high schools and two private junior high schools in Malang, recorded in the form of video. The results of this study indicated that: (1) misleading reasoning in teachers' speech in the learning at junior high schools occurred at the level of sentences and fragments. The fallacies were in the form of generalizations, analogies, and inappropriate syllogisms; (2) the factors causing misleading reasoning in the teachers' speech were the absence of supporting fact propositions, the relationship between supporting premises and incoherent propositions, and the withdrawal of inappropriate conclusions.

Keywords: learning, misleading reasoning, teachers' speech

1. Introduction

The latest learning paradigm focuses on the importance of reasoning abilities developed in students. Accordingly, in the curriculum of 2013, it is suggested that a scientific learning approach based on constructivism philosophy should be applied [1–3]. The scientific learning components include: observing, asking, reasoning, trying, and communicating. Thus, in implementing learning with a scientific approach, teachers are required to reason logically so as to create student learning conditions in which they can reason logically as well.

The approach is applied to all subjects for all types and levels of education. The scientific approach in learning is based on the implementation of scientific methods in the discovery of science. Based on the scientific method, the scientific approach puts

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forward inductive rather than deductive reasoning. Inductive reasoning is a thought process that departs from one or more individual phenomena to lead to a conclusion [4]. Thus, teachers are required to reason themselves and condition students to be willing and able to do the same.

From the results of the research, it can be seen that the learning-based scientific approach is more effective than traditional learning. In traditional learning, teachers' retention of information is 10 percent after 15 minutes and contextual comprehension is 25 percent. In a scientific-based learning approach, teachers' retention of information is more than 90 percent after two days and the acquisition of contextual understanding is 50–70 percent [5].

Starting from the importance of reasoning in learning, it is necessary to do more in-depth research on the misleading reasoning in teachers' speech in learning. This is in accordance with the nature of learning as a process of interaction between students, teachers, and other learning resources in order to achieve goals. In accordance with the nature of learning, the use of language is very important in learning, especially the use of spoken language.

Research on the use of the language of teachers in learning has already been done, but focused on verbal violence, ideological constructions, rhetorical questioning in teachers' speech in learning, and reasoning in teachers' speech in the learning context with the use of critical discourse analysis [6–9]. This research was conducted to complete the results of those studies so it is expected to obtain a more complete and in-depth understanding of teachers' speech in learning.

Choosing the appropriate language is a key requirement for speakers to communicate effectively. Another thing that must be fulfilled in communicating is the domain of ethics and logic. Thus, in communicating, communicators not only pay attention to the problem of delivering the message with good language, but that delivered must be accountable morally and logically [4].

Based on these characteristics, it is known that reasoning and language selection are key elements in communicating [10]. Brooks and Warren explain that reasoning is a mental activity that makes one move from one place, called the starting point, can be data, premises, and evidence, to a more definite direction, followed by a conclusion [11]. Based on this thinking, this paper aims to investigate (1) forms of misleading reasoning in teachers' speech, and (2) factors causing misleading reasoning in the oral language of teachers in learning at junior high schools in Malang.

2. Methods

This research used a qualitative approach with a phenomenology perspective. Understanding the reasoning in teachers' speech is seen in terms of meaning and the natural use of language in schools [12]. Efforts to construct the forms of misleading reasoning in teachers' speech in learning are made by understanding the meaning of the use of language at the level of sentences, fragments, and discourses in the context integrity. Therefore, researchers act as a key instrument in the collection and analysis of research data.

This research data was the oral speech used by teachers and its context, either at the level of sentences, fragments, or discourses, that represents the forms of misleading reasoning and its cause. The data source of this research was teachers' speech in the learning of the Indonesian language, natural sciences, social sciences, civics and mathematics lessons in the two state and private junior high schools in Malang City, obtained through observation with a video recorder. The collected data were qualitatively analyzed by using the theory of rhetoric, pragmatics, and discourse analysis. It is based on the opinion of Poespoprodjo and Spradley [10, 13].

Data analysis was performed during and after data collection through the stages of transcribing learning video recording data into writing, identifying and interpreting misleading reasoning and its causes, classifying misleading reasoning data and its causes, presenting the results of classification in narrative form with speech quotations, formulating temporary concepts based on preliminary data that had regularity while continuing to recheck the supporting data before drawing conclusions based on the results of previous data analysis [14].

3. Results

Misleading reasoning in teachers' speech in junior high school and its causes are described as follows.

3.1. The form of misleading reasoning in teachers' speech in teaching and learning and its cause

The form of misleading reasoning referred to in this study is the occurrence of errors of reasoning represented in teachers' speech in the context of learning. From the results of data analysis, it is found that misleading reasoning that is represented in

teachers' speech in the context of learning is categorized at the level of sentences and fragments.

3.2. Misleading reasoning in sentences and the cause

At the level of a sentence, misleading reasoning is found in the form of (a) truth in a general statement and unacceptable, (b) fallacy of generalization, and (c) conflicting statements. First, the misleading reasoning in the form of truth in the general statement that is unacceptable to reason represented in the teachers' speech (1) "Poetry that wants us to pay attention to ...". Poetry never asks to be noticed. Likewise with utterance (2), "Before we begin the test, we will be absent first," the word "absent" has the meaning of absence. The absentee will not be able to perform the test.

From the data showing the misleading reasoning, it is concluded that the factor causing it in the teachers' speech is the teacher's inadequacy in choosing the diction used in communicating. In utterance (1) the choice of the word "want" is inappropriate in that context. Likewise in the utterance (2), the use of the word "absent" means "not to attend." The meaning is not appropriate when used in the context of the sentence in speech (2). In addition, misleading reasoning in the teacher's speech is caused by the use of the word formation, which has an improper meaning in the context of the sentence used.

Second, misleading reasoning in the form of a weak sense of generalization is found in the following speech (3): "Notice, indeed the poetry departs from a talent." Utterance (3) represents a generalization that the teacher makes a fallacy because it is not supported by strong data or arguments. The teacher's claim that *the poem departs from the talent* is not supported by the proven argument. The same occurs with utterance (6): "The poem is indeed hard to make." The teacher's statement is not supported by strong arguments. It is not even accompanied by arguments that support the statement.

The misleading reasoning that the teacher expresses is caused by the subjective element factor of the speaker. This happens because speakers are not used to being scientific so the statements are likely to be based on the speaker's subjective opinion.

Thirdly, misleading reasoning in the opposite form of argument is represented in the following utterance (7): "Those who have no talent can have their talent sharpened. Well anyway, starting from exercises." The teacher's statement in the utterance (7) that *those who have no talent can have their talent sharpened* is an opposite statement between what has been stated and the next statement. The statement first refers to

those who have no talent, but then states that *those who have no talent can have their talent sharpened.*

The fallacy in the teacher's speech is in the opposite form due to the inadequacy of the teacher's thinking in communicating. Speakers are unaware that they have previously stated something contrary to what they subsequently say.

3.3. Fallacy in the teacher's speech fragment and its cause

At the level of the fragment, forms of fallacy are found in the teacher's speech in the context of learning, which includes (a) a false syllogism, (b) a weak analogy, and (c) conflicting statements. First, the fallacy of the wrong form of a syllogism. In the teacher's speech in learning, the fallacy is found in the use of syllogism. At the beginning of the fragment, there is a premise that states "Moreover, the taste of Indonesian people." The second premise states "Because I am Indonesian." It is further concluded that the Indonesian people are like that, want free, want cheap, want delicious. The conclusions are based solely on the subjective experience of the speaker. Therefore, the conclusion drawn is wrong. The speaker's subjective judgment arises from his lack of scientific attitude so that the conclusions he makes are based only on what the speaker is experiencing.

Second, misleading reasoning is a weak analogy. A weak analogy-shaped logic occurs when two or more things are compared and the relationship equations used as the basis of reasoning are influenced by other variables that distinguish them. In this study, fallacy shapes of weak analogy are found in the teacher's speech as the comparison of developing the ability to write poetry with the development of the ability of a small child to be self-feeding is not entirely true. Developing the ability to write poetry only through practice is not enough as there are other influencing factors, such as the ability to contemplate, the ability to choose and use words, and the ability to think, but learning to eat is more determined by physical skills.

Third, misleading reasoning is a contradictory statement. It was found that the teacher's speech is marked by an early assertion that the nature of Indonesian people, especially of women, is impractical. However, at the end of the fragment, it is argued that Indonesian people do not want to be complicated, it is instant. This is a form of contradiction. The opposition is caused by the speaker's lack of care in making the statement.

The results of this study indicate that in the teacher's speech in learning fallacy is found at the level of sentences and fragments in the form of (a) truth in the general

statement that is unacceptable to reason, (b) weak generalization, and (c) conflicting statements. The main cause is the selection of less precise words and the dominant element of the speakers. The results of this study are different from Noor's research conducted on the rubric "Surat Pembaca" [15]. The object of this research is the use of spoken language while Noor's research was on written language [15]. One of the characteristics of spoken language is that it is produced by spontaneous speakers with very quick preparation, whereas written language tends to be prepared over a sufficiently long time so that it can be corrected immediately if there is an error. In the rubric "Surat Pembaca" each opinion comes with an argument.

The results of this study contradict the opinion of Keraf and Brooks and Warren, who argue that reasoning must be based on principles of logic [11, 16]. Therefore, if you want good reasoning to express ideas in communicating, speakers must be able to apply the principles of logic in their presentation. The task of logic is to illuminate how people should think. Keraf also explains that good reasoning must meet the components of the statement, reason, and justification [16].

At the level of the fragment, forms of fallacy are found in the teacher's speech in the context of learning, including (a) false syllogisms, (b) weak analogies, and (c) conflicting statements. This is in line with Rapar's opinion that fallacy can occur due to an invalid conclusion caused by a violation of the rules of logic [17]. In a syllogism, there are three propositions, namely the major premise, the minor premise and the conclusion. The three propositions in a good syllogism are true.

The fallacy in the fragment of the teacher's speeches in the form of a weak analogy is also inconsistent with the analogy principle proposed by Syafi'ie that in analogies the essential features between something comparable and the basic features of the comparer must have something in common [4].

4. Conclusion

Reasoning in educational communication is very important. Good reasoning is necessary to clarify the delivery of messages. Accordingly, the new paradigm of learning suggests that reasoning skills should be developed among students through the application of a scientific approach. Teachers as a model for students are required to be able to reason well in communicative education. The reality, however, is that in teachers' speeches there are some fallacies, in terms of both sentences and fragments. The fallacies occur due to the teacher's lack of accuracy in choosing words and the as yet unformed scientific attitudes of the teacher. Thus, it is advisable for teachers to be

more careful in choosing and using words while continuing to strive for and getting used to being scientific.

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Conflict of Interest

Authors declare that there is no conflict of interest in this research.

References

[1] Kementrian Pendidikan dan Kebudayaan: Regulation of the Minister of Education and National Culture Statutes. Jakarta: Kemendikbud. 2016.

[2] Kementrian Pendidikan dan Kebudayaan Nasional: Regulation of the Minister of Education and National Culture Statutes. Jakarta: Kemendikbud. 2014.

[3] Kementrian Pendidikan Nasional: Modul Pelatihan Implementasi Kurikulum. Jakarta: Kemendiknas. 2013.

[4] Syafi'ie I: Retorika dalam Menulis. Malang: Fakultas Pascasarjana IKIP Malang. 1988.

[5] Kementrian Pendidikan dan Kebudayaan Nasional: Regulation of the Minister of Education and National Culture Statutes. Jakarta: Kemendikbud. 2013.

[6] Eriyanti RW: Kekerasan Verbal dalam Tuturan Guru pada Konteks Pembelajaran di SMP (Laporan Hasil Penelitian Dikti tidak Dipublikasikan). Malang: Universitas Negeri Malang. 2010.

[7] Eriyanti RW: Konstruksi Ideologi dalam Tuturan Guru pada Konteks Pembelajaran. Litera: Jurnal Bahasa, Sastra, dan Pembelajarannya. 2014; 13(1): 53-66.

[8] Eriyanti RW: Koherensi Pertanyaan Guru pada Pembelajaran. Kembara: Jurnal Ilmu Bahasa, Sastra, dan Pengajannya. 2016; 2(1): 77-89.

[9] Eriyanti RW: Penalaran dalam Tuturan Guru pada Konteks Pembelajaran. Dimuat dalam Litera: Jurnal Bahasa, Sastra, dan Pembelajarannya. 2017; 16(1): 78-95.

[10] Poespoprodjo W, Gilarso T: Logika Ilmu Menalar. Bandung: Penerbit Remaja Karya. 1987.

[11] Brooks C, Warren RP: Modern Rhetoric. New York: Harcourt, Brace & World. 1970.

[12] Lincoln YS, Guba EG: Naturalistic Inquiry. Beverly Hill: Sage Publications. 1985.

[13] Spradley JP: Metode Etnografi. Yogyakarta: Tiara Wacana. 1997.

[14] Miles M.B, Huberman AM: Analisis Data Kualitatif. Terjemahan T.R. Rohidi. Jakarta: Penerbit Universitas Indonesia. 1992.

[15] Noor S: Analisis Struktur Wacana Argumentasi Rubrik Surat Pembaca di Harian Kompas. Jurnal Bahasa, Sastra, dan Pembelajarannya. 2011; 1(2): 147-154.

[16] Keraf G: Argumentasi dan Narasi. Jakarta: PT Gramedia. 2007.

[17] Rapar JH: Pengantar Logika: Asas-asas Penalaran Sistematis. Yogyakarta: Kanisius. 1996.