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Logical Flaws in Indonesian Students' Argumentative Essays

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Abstract

Writing argumentative essays becomes a challenge for both teachers and students as it relates to various aspects. One of them is on the teaching and learning of critical thinking skills comprising the awareness to avoid logical flaws. The real reflection of critical thinking can be traced through students' ability to express their thought in the form of arguments which have no logical flaws. Good arguments must be supported by convincing claims and careful choice of wordings which is free from fallacious statements. This paper identifies the fallacious statements or logical flaws occurring in the argumentative writing of the students of an Islamic University in Indonesia. The findings show the faulty reasoning found in terms of the discussion on the topics, the flawed relations with the audience, and the relations with the characters involved in the arguments. The types of the logical flaws also concern the claims expressed. On claims of fact, the fallacies found include hasty generalization, irrelevancy, slippery slope, oversimplification and begging the question. Regarding pathos, the fallacy type covers ad populum, appeal to emotion premises and red herring. Meanwhile, the ethos fallacy occurs in straw man only. On claims of value, more faulty reasoning is found compared to the discussion on the topics which are considered less familiar. In the logos fallacy for instance, the whole types of fallacy are found. The pathos found involves appeal to emotion premises and red herring, while the ethos fallacy occurs in appeal to authority and ad hominem. On claims of policy, the similar tendency of ethos is also found while the pathos existing is in the form of appeal to emotion premises. Therefore, it is recommended that the students develop their critical thinking skills which involve constructing logical and flawless reasoning.

Keywords: logical flaws, critical thinking, logos, ethos, pathos

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1. Introduction

Critical thinking has been defined in various ways. It is often used to describe competence applicable to teaching–learning in context but also to learning in many workplace contexts. In [1] defines critical thinking as the skills to conduct conceptual and argument analyses, to recognize false inferences and logical fallacies, to be able to distinguish bias from fact, to differentiate between opinion and evidence, and so on. The quality of students' thinking to some extent reflects the quality of the education

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especially in the context of Islamic higher education. Thus, investigating Islamic higher education students' rhetorical pattern becomes significant to see the quality of their critical thinking.

Critical thinking is often related with the disposition such as open-mindedness, inquisitiveness, cognitive maturity, truth-seeking, analyticity, systematicity, and critical thinking self-confidence [6]. These also belong to the attainment of literacy. Referring to the international benchmark of education, the 3R basic literacy (*reading, writing, arithmetic*) seems to be insufficient today. It needs to be completed into 4R basic competences (*reading, writing, arithmetic,* and *reasoning*), so that learners are equipped with skills needed to support their current and future life economically, socially and culturally [3, 7]. The reasoning skill of students of Islamic higher education is the reflection of how the accumulative competence can bring them to academic productivity.

The academic productivity is measurable for instance by seeing the quantity as well as the quality of students' writing. In the higher education setting, writing is an investment not only for students' academic productivity but also for the academic reputation which requires a careful process. During the process, writing fluency is more broadly considered more important than accuracy, therefore being a productive writers needs more than a skill but also commitment to write continuously. In the context of academic writing for international publication, this process requires critical thinking skill in treating the information related to the issue to be developed into an essay [2].

Writing involves the process of recalling for information for the purpose of reproducing knowledge. Expressing one's thought has become a crucial start to build critical thinkers [5] which can evaluated further to see whether the thought is sound or not (Dowden, 2010). The better critical thinking will result in the more creative, innovative, independent and self-confident the students are. It is in line with the crucial outcome of higher education as stated in the Indonesian Government Regulation (*Peraturan Pemerintah Republik Indonesia/PPRI*) No. 70/2010 section 84.2 on the aims of tertiary education. Therefore, incorporating the critical pedagogy belongs to one step reaching the better quality of Islamic higher education graduates.

To incorporate the critical pedagogy is possible through argumentative writing assignment as it belongs to the writing mode that best reflects students' critical thinking skills. This type of writing requires the skill of recognizing opposing argument and making counter argument. Because arguments deal with probabilities, they must be qualified to convince readers (Hillocks, 2011). Therefore, in this study argumentative writing is chosen to assess students' critical thinking skills.

Student's argumentative writing can be used to measure the critical thinking skills covering the elements namely argument, evidence, recognition of opposition, refutation, conclusion, references, and fallacies [10]. *Argument* or writer's view point on a topic is presented in the form of claims supported by a reason. *Evidence* constitutes

statements or assertions which serve to strengthen the argument. *Recognition of opposition* refers to the identification of statements that run counter or offering alternative interpretations to those expressed in the claim. *Refutation* deals with the statement that the opposing viewpoints are inadequate in some ways. A *conclusion* is a statement or series of statements in which a writer sets out what s/he wants the reader to believe. *References* are related to the use of citation to support the claim. *Fallacies* are errors in reasoning which do not support the claim. The last element becomes the central point of this study in which its recognition reflects the students' quality of critical thinking.

In this study, the main objective is to see the quality of student's critical thinking in terms of the existing fallacious statements made on global issues. It aims at identifying the fallacious statements related with the flawed relationship existing between the statements in an argument attempt (logos), between the argument and the character of those involved in the argument (ethos), and between what is argued and the audience (pathos).

2. Method

In this study the variety of fallacies of the given three types of flawed relationship becomes the basis to uncover what is specifically happening in the process students' reflecting critical thinking. The identification is geared to understanding 'to what extent' the students shape their critical thinking into either sound or unsound argument. Employing the design of descriptive qualitative, the study can result in a more comprehensive interpretation on the phenomenon on the dynamic of students' critical thinking skills through the fallacies made. The data needed for revealing the pattern of fallacies in their critical writing are in the form of the sentences written in the students' argumentative writing. The source of the data is the essays written by English department students of UIN Maulana Malik Ibrahim Malang with the prompt on writing about global issues.

3. Findings

The students wrote on several issues, despite the instruction on the global issues. Some of the non-related global issues, such as the teenage issue like wearing uniform to campus, the importance of vocabulary lesson and others, were not analyzed in this study. Meanwhile, the global issues the students wrote cover the world environment issue, the issue on information technology and social networking, drug prohibition, prostitution, and others as summarized in the following table.

Topic	Argument	Evidence	Opposition	Refutation	Conclusion	Total
Forestation	4	3	4	4	3	18
Religious right	4	4	4	4	4	20
Information Tech	4	4	4	4	4	20
Global culture	3	4	4	4	3	18
Air pollution	4	3	4	4	3	18
Drugs	4	3	1	1	1	10
Prostitution	4	4	4	4	4	20
Pornography	4	3	4	4	3	18
Education trend	5	5	5	5	5	25
Social network	4	4	4	4	4	20
Social right	3	4	4	3	4	18
Future education	4	4	4	4	4	20

The assessment of critical thinking comprises the five aspects as shown in the above table, namely argument, evidence, opposition, refutation and conclusion. The scoring of each aspect ranges 1-5. The maximum total score is 25 gained by the argument on education trend. The second rank exists in the topics of religious right, information technology, prostitution, social network. The moderate score exist in the discussion on forestation, global culture, air pollution, pornography and social right. The lowest score is on the issue of drugs prohibition.

Based on the choice of global issue made by the students, it can be inferred that the critical thinking is related with the familiar topic. The topic on drug seemed unfamiliar therefore the critical thinking score is the lowest one. Meanwhile, the proportion of the critical thinking aspect is as shown below.

Critical Thinking Quality
- Argument - 21%
- Evidence - 20%
- Opposition -20%
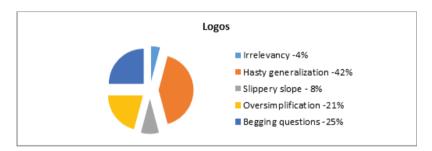- Refutation -20%
- Conclusion -19%

The balance of the aspects above is obvious, therefore to assure the quality of the critical thinking the analysis is done on the flawed reasoning. Based on the data, there are 30 fallacies found. The type of the fallacies is given below:

Topic	Logos	Ethos	Pathos	Total
Forestation	7	0	0	7
Religious right	1	0	1	2
Information Tehnology	2	0	1	3
Global culture	1	0	1	2
Air pollution	2	0	0	2
Drugs	3	0	0	3
Prostitution	2	0	0	2
Pornography	1	0	1	2
Education trend	0	0	1	1
Social network	3	0	0	3
Social right	1	0	1	2
Future education	1	0	0	1
Sum	24	0	6	30

As seen in the table, logos fallacy becomes the dominant type, followed by pathos. Flawed relationship between the argument and the character in the argument or ethos does not occur on global issues. The proportion of logos is summarized below.

Meanwhile on pathos, the proportion is 50% on emotional appeals and 50% ad populum.

4. Discussion

Based on the analysis, the logos dominate the flawed reasoning especially on *hasty generalization.* As the example is *Nowadays we always watch television to know the information about the world.* The quality of critical thinking is flawed here as the conclusion is jumping to generalization. In this case the writer believes that the general fact will be exactly the same as what s/he has assumed through his/her claims.

As shown in the analysis more faulty reasoning is found in the issues which are not new or those considered more familiar to the students. Thus, there is tendency of leaping the premises to come to the direct conclusion. This finding is in line with the way Japanese students made flawed reasoning in their argumentative essays as found by [10]. In addition, the more familiar the students with the topic, the more number of fallacies found [8].

Regarding pathos, flawed relationships can also exist between what is argued and the audience. These flawed arguments, called fallacies of pathos in the data include, appealing to stirring symbols (such as nationalistic values), provincialism and appealing to emotional premises. Pathos is found on the issue of religious right, IT, education and social issues where the tendency to influence the audience becomes apparent. This is as a result of the inability to explore more on a more logical reasoning so that to complete the ideas the students include their overestimating on their own claim. As the argument is written on a piece of paper, students believe that the result of their critical thinking only reached limited audience. Accordingly they want to affect the readers through exaggerating argument which then becomes fallacious. In this case, the more awareness of the larger audience will improve the students' carefulness to avoid more pathos fallacy.

5. Conclusions and Suggestions

Understanding the phenomenon on the types of fallacies in students' claim of value brings some pedagogical implications. Since the result shows the various types of logos fallacy found, writing teachers should model how to make inference based on logical reasoning. Influencing readers to believe the same value justification should not be made merely by involving emotion and adding irrelevant details. This is because these two types of pathos fallacy is also proven to be dominant in the students' argument. In addition, it is recommended for syllabus developer to enrich the students' knowledge with the type of fallacies to avoid in argumentative writing as a way to assure the quality of students' critical thinking.

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