The Place of Argumentation in Academic Paper through the Application of the Macro-Toulmin

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Abstract

Recognizing argumentation in academic papers is an obstacle to students of academic writing especially once assigned to read a piece of research article prior to their writing assignment. The aim of this study is to uncover the existence of argumentation in the article with the application of the Macro-Toulmin model. Classification of different parts that fit the required elements of the model is to recognize the argumentation overall structures macroscopic way top-down. The findings show that the different Objectives indicate the existence of argumentation in the article. In a macroscopic way, each of which not only represents its own argument structure at attempt to succeed through the divisions of prior and after the author conducts the real research but also shows the fitting function of the article’s overall components to the overall structure of the model and its elements. The study brings to light the applicability of the model in recognizing argumentation in academic papers. The model finds its place to help students to encounter argumentation recognizing in the paper and be guidelines to prevent teachers from giving vague comments of the students’ paper-in-progress.

Keywords: Toulmin Model, Macro-Toulmin, Argumentation, Academic Reading

Introduction

Students’ difficulties of recognizing argument or argumentation (Toulmin et al., 2002, Andrews, 1995: p. 3) in a research article entitled “‘Argument!’ helping students
understand what essay writing is about” written by Ursula Wingate, Journal of English for Academic Purposes (2012, pp. 145-154) they assigned to read concerned our interest of drawing out how argumentation exists in the article. The problem, typically known among researchers of the field, is due to: (1) no explicit teaching about argumentation (Mitchell & Riddle, 2000), (2) the deference between the concept of argumentation given in secondary school with that is required during university (Andrews (1995), (3) the students’ inability to apply general writing guidelines to writing contexts (Lea and Street (1998), (4) the students’ lack of awareness about the genre (Bacha, 2010 & Davies, 2008), as well as (5) vague comments as feedback given by teachers when the students have breached the writing conventions expected in the discipline (Mitchell & Riddle, (2000: p. 17).

Argumentation development, an element of rhetorical feature of the value of successful academic writing by academic across disciplines (Wingate, 2012), is not to deal with that of linguistic (Crusius & Channell, 2016, p.p. 17-19), but reasoning, development of a position, presentation of the position, analyzing and evaluating content knowledge (Groom, 2000; Wingate, U. 2012) instead. This, considered by several researchers of the field, seems hardest to such a group of unexperienced writers (Groom, 2000; Ka-kan-dee & Kaur, 2015; Andrews, 1995; & Wood, 2018). An emphasis on such difficulties sets up a remark that there is a distinction between non-critical readers and critical readers as their purpose of reading is different. To overcome the difficulties, as a character of critical readers, Kurland, (2000) proposes three ways of reading and discussing texts: restatement, description, and interpretation. In addition, Crusius & Channell, (2016) suggest paraphrasing or restating more complex ideas of a passage into readers own words, as a critical-analysis method for reading argumentative text (p.p. 15-20).

Macro-Toulmin and argumentation in writing academic paper

Toulmin’s model, a key tool for ‘teaching argument in various disciplines’ (Mitchell & Riddle, 2000), is adapted as ‘Macro-Toulmin’, the model version with ‘macroscopic way’ of use for academic writing and tackling difficulties of academic papers’ overall purpose, structure and components, and the way these components function to the overall structure as a whole technically a “top-down” way and helps writers assess, as a criterion, drafting paper-in-progress in such a way whether the paper
being written contains six parts according to the model’s elements: claim, data, warrant, backing, rebuttal, and qualification (Hegelund & Kock, 2003).

Claim is a statement that presents writer’s opinions on a particular issue, not “just [to] reiterate or summarize statements” made by other scholars, usually located in many parts like Introduction, Problem Statements, Hypothesis, and/or Discussion section, not necessary only in Conclusion (Hegelund & Kock, 2003). Such a claim which is located in Conclusion is referred to the claim after the author’s conducting the ‘real’ research/ completing data analysis given from the field, already qualified, based on some “field” evidence. Another is the claim which is anticipated by the author himself. Paving the way what the research is objected to be about, the anticipated claim is like ‘intuitive hypothesis’ (Aguado, 2009), that is proposed by students (researchers/writers) as what they expect to know prior to their generating the questions of ‘why?’ which would later direct them to give the answer to the question by writing a literature review (whatever data derived from literature review is later a set of data). In many academic papers, claim is unstated explicitly as “implicit warrant” (Lowder, C., 2013), as the author needs their readers fill in the blank themselves what the claim is. Though, it is “there” in the paper (Hegelund & Kock, 2003).

Data represents all relevant information, based on which the author’s claim is proposed. The three main kinds of data like 1) theoretical data, concepts, or definitions drawn by experts in a particular field, 2) specific data drawn from studies (conducted) by others, and 3) specific data drawn from studies (conducted) by the writer’s own research (Hegelund & Kock, 2003) can be narrowed down into two categories, emerged before and after conducting the ‘real’ research. Data prior real research, used to support the author’s anticipated claim, is available already prior to conducting the real research. Both data of this kind are general and specific. The data which is considered general is that of theoretical data drawn from experts of the filed. In contrary, the specific data is a category of those which are concerned about available studies conducted by others or the author himself previously to proposing the anticipated claim, which would be later on applied for the author’s methodology of research. Data after real research is such a group of data derived just after the author conducts the research regarding the issue under the proposed claim at the beginning (hypothesis), including the researchers’ own empirical/experimental data, with high intention to support the reclaim / qualification. In
different words, the first category of data should be in support of the anticipated claim, while the second the claim after the real research is conducted. The data of this kind can possibly be called findings.

According to Hegelund & Kock (2003), unlike that in practical argument, warrant is considered as a “constitutive feature” in academic writing, or a “field-dependent method” of a piece of research paper. Variety of method (or warrant) depends on different academic fields in nature and is possibly “drawn or inspired by studies in a neighboring field, combined of traditional features, borrowed or adapted features, and new features”. All methods are to clearly mention the researcher’s careful discussion and prescription of collecting, selecting, and interpreting “certain types” of data. Macro-Toulmin suggests “a well-completed-discussion” of method of any research is presented through the three elements: warrant, backing, and rebuttal. In another word, any research paper lacking one of these three elements has not yet completed discussion of method. However, in Humanities’ literacy criticism, warrant is “usually implicit rather than explicit”, dependent on “how known and accepted that method is by intended audience”. For instance, in science and technology and social science, it is possibly presented in a form of ‘material’ while in Humanities and Literacy Criticism ‘literally’.

Backing is a statement presented to show why warrant (or method) is generally accepted, giving the authority or justification not only to the way the data is interpreted, but also the way it is collected and selected as offered. According to Hegelund & Kock, (2003) having authority as mentioned by Toulmin (2008: 103) can refer either “authority figure” (for instance ‘theories’ according to such and such experts) or “a current paradigm or parallel studies” that sanction such an interpretation or in which similar or related methods can be applied to reveal reliable results. Our consideration of backing is that shares similarities with specific data where the details of method, concerning a particular objective of studies (anticipated claim) conducted by any other researchers previously, are cited and applicable to back up the method of current research. Therefore, the places to look for, where backing statements are mentioned, are considered to be in Review Literature, Method, or Introduction parts in the paper being analyzed.
Rebuttal is an important “value criterion” holding a connection with the warrant category and shows the writer’s awareness and responses to a possibility that will be accused by the experts/scholars of a particular field about the warrant offered (Hegelund & Kock, 2003). In another word, like counter-argument, rebuttal is about the author’s presentation of anticipated doubts given by expert readers and offering the solutions to the doubts, which may be appeared in many forms commonly known to different fields depending on their “fundamental problems of theory or paradigm”. For instance, in a research of humanities and social science, most doubts occur due to the method of observation, introspection (self-analysis), theory, practice, including ethics as well as warrant of the data. Rebuttal in this sense is a presentation of the writer’s method of interpretation. However, backing and rebuttal may not have to be presented in a form of literal discussion but materially. Suppose that such a paper, in any particular field, requires its author to show its backing and rebuttal in a form of material production. The author’s (researcher) ability to produce such material then will be an indication of the paper’s backing and rebuttal (i.e. in the field of science and technology). That warrant of this type of paper (research) “may be taken for granted”, while in a field like literacy criticism, it shall be represented exactly not necessary be in a form of material production but interpretation of the texts. In this case, the experts reading the paper will be looking for the author’s method of interpretation including the use of biological data to indicate the paper’s quality (Hegelund & Kock, 2003).

Qualifier refers to a statement which indicates the degree of strength and weakness, conferred by the warrant, on the conclusion, the claim the author has already made. As a signal by which the author can advance his claim (Hegelund & Kock, 2003), qualifier label would come before and after the real research is conducted.

Research Methodology

First, we applied critical reading techniques with consideration of: (1) Restatement (what does the text say?), (2) Description (what does the text do?), and (3) Interpretation (what does the text mean?) (Kurland, 2000).

Second, we paraphrased or restated grammatical difficulties such as metaphor, uncommon sentence structure, fragments, modifiers, changed places of word orders, missing words to be filled in, quotations, and hints into our own shorter syntax and
words with an attempt to preserve as much the author’s original context as possible and increase reading comprehension and confidence (Crusius & Channell, 2016).

Third, to uncover argumentation in the article, we applied techniques of understanding the article’s whole structure, comprised by different parts within the article, and later classified into their own fair positions that fit (as the result of analysis) with accordance to “macroscopic way” of the Macro-Toulmin model (Hegelund & Kock, 2003). In another sense, we read and analyzed an already-written-academic article with the application of Macro-Toulmin’s layout in such a way that how its overall structures “top-down” and argumentation are functioned. Quoting and marking of “Parts” and “Lines” in parenthesis are to make contextual reference for the locations of the author’s original statements/sentences, which are in this study mostly paraphrased.

Results

The article, written by Ursula Wingate (a professor in Education and Professional Studies at King’s College London), contains 10 pages with a division of 10 main parts. Each part is comprised by different numbers of lines and paragraphs which can be summarized as (1) Introduction: (24 lines: 3 paragraphs); (2) Concept of argument: (48: 4); (3) Learning argumentation: (31: 3); (4) Teaching argumentation: (34: 5); (5) Methods: (23: 4); (6) Findings and discussion: (147: 30); (7) Limitations in teaching argumentation: (34:6); (8) Improving the teaching of argumentation: (43: 8); and (9) Conclusion: (11: 2). The analysis of the article’s argumentation with the Macro-Toulmin is resulted as follows.

**Figure 1** Argumentation of the article macroscopic way

Data (prior to the real research)

- a. General data
- b. Specific data

Data (after the real research):

- Findings for Objective 1
- Findings for Objective 2
- Findings for Objective 3

Warrant:

- (1) Collection
- (2) Selection
- (3) Interpretation

Back ing (specific data)

Anticipated claims

- Objective 1
- Objective 2
- Objective 3

Qualified Claims:

- Qualified claim 1
- Qualified claim 2
- Qualified claim 3

Rebuttals:

- Rebuttal 1
- Rebuttal 2
- Rebuttal 3

Findings for Objective 1

Findings for Objective 2

Findings for Objective 3
Discussion

Prior the conduct of real research

Like ‘intuitive hypothesis’ stated in Objective part of the paper ‘anticipating’ what the author (the researcher) expected to know, Anticipated Claims is simply a paraphrased version of the statement appeared in Objective 1, the second in Objective 2, and the third in Objective 3. For instance: “To identify the concepts of ‘argument’ students have when arriving at university” (P.1: Line 25) can be paraphrased for anticipated claim as “Students’ concepts of argument can be identified”. However, the Objective 3 can possibly be divided into that of the third and fourth anticipated claims: “The current instructions have limitations and that can be discussed” and “What is recommended (which is the writing framework) can help improve students’ difficulty of academic writing (or can solve the existing problems”). All the anticipated claims should be reasoned by the data the author has in hands before taking leaps for conducting real research (or going to the filed).

Data (prior), a group of data to direct authors to give reasons to the anticipated claims, is formed by generating questions of ‘why’ and consisted in Review Literature part among the “three main kinds of data” (Hegelund & Kock, 2003). For this article, data is categorized into two: the data available prior conducting the real research which is general (theoretical, concept, etc.) and specific (method).

For Objective 1, General data is to show what the author (Ursula Wingate) has already known before her taking leaps for the field research (Part1: Lines 1-21; Part 5: Line 2; and Part 2: Lines 1-15).

On the other hand, Specific data of the first anticipated claim appears in Part 5: Lines 2-3. To the author (Ursula Wingate), students’ understanding about argumentation in academic paper can be identified by having them present/share their own understanding via the distributed questionnaires. Such a method used is likely applied from the expert who explores first year students’ concepts of argument by interviewing students from three different disciplines (Part 2: Line 31).

In Objective 2, General data appear in Part 3: Lines 1-9 and 14-31 and Specific data in Part 4: Lines 20, 27&28. The first tool (lecturers’ feedback) is backed up with that of an expert’s authority (2003) (Part 4: Line 30), whilst the second (students’ diaries) is not provided.
In Objective 3, General data can be classified into two: (1) that revealed from the author’s own research, after the analysis of teachers’ comments and that of students’ diaries (Part 6: Lines 95-100; Lines 143-147); and Lines 30-31, 93, 134) and (2) the theoretical data drawn from experts of the field (Part 1: Lines 7, 9, 12-18, & 20; Part 2: Lines 22, 27, 32-33, 36, 38-40; Part 3: Lines 13&29; Part 4: Lines 3, 20-33).

In the fourth anticipated claim, General data are resulted from the author’s own research on the previous objective (the third): the current teaching instruction about academic writing is problematic (no focus on argumentation). The finding is backed up by theoretical data derived from the experts (Part 8: Lines 1-6). The author designed a new teaching instruction, which emphasizes on developing argument is the overarching requirement, contrary to the teaching framework, with accordance to the theoretical data drawn from experts of the field, in order to solve the problems (Part 8: Lines 2-5). Of both the third and fourth anticipated claims, no Specific data is mentioned.

After the real research was conducted

Data (after): is a group of data found as a result after the conduct of real research on a particular anticipated claim at the beginning as testing of hypothesis in a form of empirical/experimental data (Hegelund & Kock, (2003). Every Objective (anticipated claim), therefore, has this kind of data as findings. According to the author, the findings as a result of the Objective 1 are revealed after the analysis of the questionnaires: (1) Very few mentions about key aspects of argumentation: (2) Less than fifty students’ mentions on the need for evidence and eight on the need for analysis: (3) Thirty-four students’ disclosed schemata conflict with the target genre: (4) Many responses on argument’ meaning at persuasion: (5) Thirty-nine students’ understanding of argument two sides of meaning: (6) Few students understanding of argument multiple views involvement: (7) Ten students’ understanding of argument proper conclusion needs: and (8) Seven students’ understanding of argument involvement of structure of whole essay (Part 6: Lines 1-26).

The findings for Objective 2 as a result of the application of two different tools e.g. the analysis of students’ diaries and the analysis of tutors’ comments, shown in Table3 (Part 6: Page 150) bring about such data concerning the difficulties that of lower graded and higher graded students, shown in Table 2 (Part 6: Lines 46-47, 74, 84&94, 123&137, 125, 130&136, 59-60, 77-78, 101-102, 108, 112 & 115, 140; Categories 2-5; and
Theme 4: Table 3). The findings for Objective 3, revealed due to teacher’s comments and current writing guidelines, are concerned with (1) vague labelling in teachers’ comments (Part 7: Lines 17-18 & 27) and the guidelines (Part 7: Line 13) and (2) and no emphasis of argumentation in teacher’s comments (Part 7: Line 24) and in writing guidelines (Part 7: Lines 16, 20&28). In Objective 4, findings are not explicitly mentioned unlike that of the previous objectives. Assumingly, as the current teaching framework/instruction is problematic e.g. no emphasis on argumentation aim overarching, there is a need to have a new writing framework. The main data to this objective is fruitful of the author’s designed framework, which to her matches the requirement such as argumentation development and components (Part 8: Lines 7-9 & 11-12), structure and the presentation of the position (Part 8: Line 19) and addressing argumentation at the macro level (Part 8: Line 28).

Warrant: The Finding 1 warrant for data collection is having respondents answer the distributed close and open questionnaires developed based on the notions of the concept (definitions) and components of argument (Part 5: Line 2-3) whilst that of selecting the collected data by grouping the answers of the opened questions into 8 categories, mentioned as the key aspects (P.6: Lines 5-7). The interpretation of the selected data is of a conditional criterion that the frequency of matched technical terms concerning concepts and components of argument mentioned by the respondents to the conditions of each category can indicate their awareness and understanding of argument (Part 6: Lines 6-10, 16&21-23). For Finding 2, unlike that of Finding 1, warrant has two different tools for data collection: analysis of tutor comments and analysis of students’ diaries (Part 5: Lines 7-8).

(1) Analysis of tutor comments as a tool for data collection is purposive for capturing how tutors’ assessment of forty lower-graded and twenty high-graded students’ written academic essays is taken place. The collected data is selected dependent on the author’s points of consideration of: 1) repetitions of comments and their concerns: negative (represents students’ difficulties) or positive; and 2) quantity of the comments that belonged to two different groups of students: lower graded essay writers and higher graded essay writers (Part 5: Lines 7-14&Part 6: Table 2: Page 149). Warrant part of interpretation to the analysis of tutors’ comments is detailed with following three criteria inferencing for student’s ability in: (1) Analyzing and evaluating
content knowledge: (2) Developing a position of argument: and (3) Presenting argument with logical propositions (See the findings of Objective 2 aforementioned).

(2) Analysis of eight student’s diaries, as a data collection tool, is to dig out students’ personal notes about their process of writing assignment. Volunteered eight students participated in writing diary as soon as the first writing assignment was assigned (Part 5: Lines 14-21). A further analysis process, data selection, is done with an order of the frequency of mentions in the diaries as shown in Table3 (Part 6: P.150), discussed according to the three components of argumentation: (a.) The development of a position or the development of an argument, (b.) The presentation of the position with logical propositions, and (c.) Analysis and evaluation of content knowledge: selection of relevant information from sources and its use in the development (Part 6: Lines 37-39). The criteria, based on which the author infers the results of interpretation are the same as that of the first tool (analysis of tutor comments), with dependency to the matter of its frequency of repetitions of negative comments which represents difficulty.


In Objective 3, pinpointing out limitations of current instructions, the author provides reasons to the claim anticipated, criterion-based examining the results found with expert’s theoretical data. At first glance, warrant’s tools for data collection are (1) the analysis of tutor’s comments, (2) of students’ diaries and (3) reviewing available expert’s literature. The first two tools are applied for the previous Objective, which is distinguishing to addressing limitations of the current teaching framework, which is accomplished only after result analysis. Therefore, in our view, the authentic tool for this warrant part is analytical reading of Objective 2’s already-obtained-data. Data interpretation to this Objective is done by a matter of criterion-based “examination” (Part 7: Line 3) of the data resulted from the author’s own research with consideration if it is “in line with” the theoretical data drawn from the field experts (Part 7: Lines 19& 32).
In Objective 4, warrant is a method to prove true the author’s anticipated claim. Not explicitly mentioned, the tool for data collection is analytical reading of the designed framework (Part 8: Line 6) and likely that of data collection is connecting the framework’s structure presented in Figure 1 with three main emphasized elements of argumentation development: (1) establishing individual’s position, (2) presenting the position in a coherent manner and (3) selecting and using relevant information from sources (Part 8: Lines 7-12). Data interpretation lies with an assumption that if the framework shows the illustration of the requirement to students, the students as novice writers will understand the requirement, and that the framework is considered helpful to improve their writing (Part 8: Lines 6, 10, 34).

Qualified claim: represents the author’s own opinion signaled with a degree of trust on particular issue, as a field-evident result of data interpretation completion, of real research. Qualified claim depends on findings depends on objectives. Followings are possible paraphrased version of each qualified claims with their origin mentioned in the context: Qualified claim 1: (Thus), many students who just arrived at university have got narrow and inappropriate concepts of arguments (Part 6: Line 24); Qualified claim 2: (Therefore), the first year students have difficulties on argumentation in academic writing (Part 6: Lines 143, 52, 101-102, 108, 129, and 138-139); Qualified claim 3: (Thus), the current instructions (teachers’ comments and writing guidelines) are consisted of two main limitations: vague labelling and no argumentation addressed (Part 7: Lines 3-4); and Qualified claim 4: “(So,) The writing framework she proposes is probably able to “improve students’ understanding of the concept and their writing of the essays” (Part 9: Line 11), or “to organize writing instruction in a way that enables students to fully understand the requirements of the genre”, and “would ensure (tutors) a commonly understood terminology” with precision of the three components and (would) “highlight how particular deficiencies in students’ essays hinder the development of argument”, addressing “the macro level” (Part 8: Lines 25, 28&35).

Backing: Backing for warrant of Objective 1 is mainly divided into two: one is for collecting data the other selecting, which is implicitly mentioned. There is no backing for data interpretation, though it is understandable that she interpreted the selected data of the eight categories according the frequency of mentions. The author backs up her method of collecting data by having students answer questionnaires with accordance to
the expert (Part 2: Line 32). Not taken directly from the source as she might have done interviews, her method of collecting data through questionnaires is considered applied. That of data selection is done by a combination of both definition of argument and its core components with authoritative references of experts in the field (Part 2: Lines 2-3-8-16). Backing for Objective 2’s warrant: only the backing for the lecturers’ feedback as a method of data collection (and not that of selection and interpretation) for students’ difficulty is mentioned. It is an implication to that of such a method used by an expert (Part4: Line 30). None information is provided to back up the author’s method of data collection from students’ diaries and the way which are selected and interpreted. Both backings of Objectives 3 and 4’s warrant are not mentioned by the author. Perhaps this is such a case that the method she applied is “known and accepted” by the intended readers so “literal discussion” does not have to be presented, but “material” instead (Hegelund & Kock, 2003).

There is only one among four Objectives which shows the author’s rebuttal: that of Objective 4’s qualified claim (Part 9: Lines 10-11). A possible main reason is that rebuttal depends on different methods of research, technically literal and materially (Hegelund & Kock, 2003).

**Qualifier**, a word or phrase labelling a degree of force partial to claim advancement resulted after the real research is conducted and indeed the claim is qualified, of each qualified claims is with following details: Of qualified claim 1 is such a term as many, narrow, and inappropriate. The qualifier for the second qualified claim is that to show that not the students feel difficult about argumentation as a whole, only parts of which. The qualifiers of qualified claims 3 & 4 are advanced, indicating what make students unable to perform academic writing very well and what can help them perform better. However, these are implicitly formed up with probability (Part: 8: Line 34).

**Conclusion**

The discussion of the four objectives above indicates that the application of Macro-Toulmin model in analyzing a piece of research article and careful reading with such a technique like paraphrasing is able to figure out the existence of argumentation in the article macroscopic way. It is the way which shows the fitting function of the article’s
overall components to overall structure of the model and its elements. As revealed, the applicability of the model into overall structure of the article provides conceivable understanding to recognize that there are more than a single argumentation existed in the article and that depends on a number of objectives. Needless to say, different objectives (after paraphrasing) are different anticipated claims, which later on are to draw function of each element of the model. Including that, total elements of the entire model are with two main divisions: before and after the researcher (here means the author) conducts the real research. In accord to these results, though it is not fitted exactly into each element, Macro-Toulmin model is able to show to the students (or any novice readers) the place where argumentation exists in a piece of research article as expected, in order to encounter the difficulties in recognizing argumentation macroscopic way. Users of the model should be with awareness whenever their reading to uncover the argumentation takes place. The application, furthermore, is possible to provide more comprehensible view regarding in the concept of argumentation in academic paper to us as teachers, as well as awareness on giving vague comments when we find their papers are not academically appropriate.

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