

# THE ROLE OF RATIONALE™ APPLICATION ON STUDENTS' CRITICAL THINKING SKILL IN ARGUMENTATIVE WRITING

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## Abstract:

*Makalah ini bertujuan untuk mengevaluasi cara inovatif untuk mengajar menulis argumentatif dengan menggunakan pembelajaran elektronik. Makalah ini akan fokus pada keterampilan menulis karena melalui menulis pelajar dapat mengekspresikan ide mereka dalam bentuk tertulis. Namun, keterampilan berpikir kritis dalam proses pembelajaran terkadang membuat siswa kesulitan untuk mengekspresikan dan menghasilkan ide-ide mereka dalam menulis, sebagai akibatnya mereka terjebak dalam proses menulis tanpa menjadi kritis. Oleh karena itu, peneliti mempromosikan aplikasi "rasional" sebagai media e-learning untuk membantu siswa mempelajari konsep, memahami struktur argumen, dan mengembangkan keterampilan penalaran. Makalah ini menggunakan metode deskriptif kualitatif untuk menggambarkan bagaimana guru menerapkan aplikasi rasional dan bagaimana pemikiran kritis siswa dalam tugas menulis argumentatif mereka. Hasil penelitian menunjukkan bahwa aplikasi rasional memberikan siswa tidak hanya dengan motivasi yang lebih besar untuk menulis dan untuk melibatkan kreativitas mereka dalam menulis teks argumentatif, tetapi juga mengarahkan mereka untuk berpikir kritis dalam mengevaluasi sesuatu.*

**Kata kunci:** Aplikasi Rationale™, Berpikir kritis, Menulis argumentasi

## 1. INTRODUCTION

Thereregulation of Republic Indonesia Number 17 Year 2010 declared the goal of education is to foster students' ability to think critically and to reason effectively in making decision. They are expected to be competent, creative, innovative and critical to achieve their future success in a 21<sup>st</sup> century. It means that, thinking critically needs to be developed since it will help to shape the students' attitude and skill. Related to English Language Teaching (ELT), Indonesian EFL teachers must assist the students in acquiring critical thinking skill while learning English (Alwasilah, 2001) because critical thinking will also influence on the way they think in understanding what is relevant and what is not to be more accurate and specific (Cotrell, 2005). Among four skills in English, writing can improve critical thinking because writing process requires an individual to make their ideas explicit. Therefore, it can be said that writing needs critical thinking in order to achieve the goal.

Critical thinking in writing involves some abilities, such as finding the evidence of the subject being discussed; evaluating the evidence to support different arguments; and constructing reasoning to convince others by giving appropriate examples and evidence which can be seen through some aspects in critical thinking skills based on Facione (1998): (i) Interpretation (ii) Analysis (iii) Evaluation (iv) Inference (v) Explanation and (vi) Disposition. This writing ability can be analyzed in the form of argumentative essay. (Kuek, 2010) stated in argumentative writing, the students

will analyze, evaluate, counter argument and show a logical opinion to convince which belong to critical thinking skill.

However, the development of critical thinking skills does not appear among teachers throughout the country, it is supported by (Sadli, 2002) argues education in Indonesia does not promote critical thinking and Indonesian teachers do not encourage critical thinking skills, so the students do not feel challenged to think critically. From the preceding explanation, it is clear that critical thinking should be possessed by the students in order to write effectively, but there is a little guidance from the teacher which makes the students difficult to express and generate their ideas in writing; as a result they get stuck in the process of writing without being critical thinker. Therefore, promoting an excellent writing environment for EFL students is needed in order to allow them practicing their argumentation skills effectively.

In the 21st century, students are known as a digital natives or net-generation where this condition is really different from the past. The use of computer and internet program is familiar for them. They use their laptop to do their assignment and internet access to find further resource in enriching knowledge. This development of information technology is used by English teacher to support English learning process and to help improving the students' critical thinking skill. A recent innovation, Rationale™ application program is one of technologies that can be used in teaching learning which helps students from the basic thinking to evaluate reasoning and to construct

structured argumentative essays in the form of argument visualization software tool. By using a diagram, students are able to share and modify their reasoning (Gelder, 2007).

In teaching argumentative text, RationaleTM can be used as a tool to help students build arguments mapping properly because there is a table for the argument topic at the top level then followed by supporting claim and the objection. Furthermore, RationaleTM can help the students get better at argument analysis and evaluation. It is supported by (Gelder, 2007) claims that by practicing argument mapping through this media the students are forced to be more structured in expressing their idea critically in argumentative writing which help them to build their critical thinking skills.

Rationale application are used in many various ways in language teaching around the world, including Indonesia. First, (Davies, 2009) has investigated the use of Rationale for Economics students. He implements Rationale only for doing some assessment tasks. He reported generally that the students have better understanding of their assessment tasks and enjoy the experience using Rationale. But Rationale application was not tried as a way to improve critical thinking skills in his research.

Another researcher, (Eftekhari, 2016) investigates the impact of teaching RationalTM software versus paper and pencil for Iranian EFL's critical thinking skills. He examined the development in reading proficiency level. The results showed that RationalTM can be implemented as a teaching media which support to provide text-based presentation of arguments. In this research, he suggested to explore critical thinking development in other EFL/ESL or infusing critical thinking skill into writing or other skills.

Those previous studies as mentioned above has not been explore how the students' critical thinking competence after Rationale used in teaching argumentative writing. In response to this, research on critical thinking is important to be conducted as the first step to provide an alternative methodology in teaching and assessing critical thinking. Therefore, this paper was aimed to identify how rationale application is implemented in teaching writing argumentative text for undergraduate student. It will describe in depth the process of implementation rationale application in the classrooms and how the students' critical thinking in their argumentative writing result when it is implemented. The findings of this paper can be a good evaluation of the use of rationale application for teaching writing especially for argumentative text.

## 2. REVIEW OF LITERATURE

### *Definition of Critical Thinking*

Critical thinking becomes a concern among educators including those who are involved in EFL context. (Ennis, 1991) defines critical thinking as 'reasonable reflective thinking focused on deciding what to believe or to do which includes formulating hypotheses, possible solutions, and investigating something. Furthermore, (Facione, 1998) claims "critical thinking as a good thinking, almost the opposite of illogical, irrational, thinking. So when we test our understanding further, we run into questions." For instance, students who have the ability to think critically will always ask themselves when they face the problems to determine the best for themselves. They will be able to put those skills in aspects of their daily life. Similarly, (Washburn, 2010) stated that critical thinking is the activity when the students criticize things both in terms of the negative side and the positive side of things. In short, critical thinking is known as active thinking. It involves the ability of making decision that are logical and well-thought to reach the answer or conclusion before doing something.

### *Aspects / Components of Critical Thinking*

There are well accepted critical thinking taxonomy, first is developed by (Ennis, 1991) which comprises four clusters (1) Clarification involves identify the focus: (2) Decision involves judge the credibility of a source (3) Inference involves deduce, and judge deductions. (4) Supposition and integration like they are able to consider and reason what they disagree and integrate the other abilities in making decision.

Furthermore, the Delphi Project of the American Philosophical Association, (Facione, 1998) also defined critical thinking as having two dimensions: cognitive skills and affective dispositions. The cognitive skills and sub-skills that the group included are (i) Interpretation relates to the ability of understanding meaning from several sources (ii) Analysis is explained as the ability to identify opinion through comparing and contrasting. (iii) Evaluation defines as assessing the source credibility as they may come from opinion or perception includes assessing claims and argument. (iv) Inference consists of evidence and drawing conclusion. (v) Explanation is the cognitive skill where reasoning and evidence are used to support an argument or particular claim. (vi) Disposition is used to solve problems or making decision.

Based on the reason above, the researcher used Facione to know the students critical thinking. The choice is made because among the critical thinking skills and sub-skills of the three models, the skills which is relevant and measurable due to their similarities and immediate relevance to academic writing skill is from Facione. At this point, interpretation, analysis, evaluation,

inference, explanation, and disposition skills together with their sub-skills relevant to academic writing will be selected.

#### Critical Thinking in Academic Writing

The best way to investigate the students' critical thinking ability is through their writing. (Brown, 2004) classifies writing activities in academic range can be in the form of papers, articles, dissertations, books and also journals. Academic writing for students' university is expected to deal with advance writing performance. Academic writing is writing activity based on a critical judgment of complex ideas and information. In academic writing, students need to support their ideas and opinion with fact, statistic, quotation and similar kind of information in order not to be considered as plagiarism.

There are many kinds of academic writing, one of them is argumentative writing. Argumentative writing is one of text in academic writing which provides pro and contra of arguments. It forces the writer to be critical because they try to support the pro argument and rebut the contra argument by providing some facts or example to convince the readers. (Hyland K. , 1990) stated that argumentative essay is to convince the reader related to the rightness of core thought. In short, critical thinking in academic writing is an expression of the authors' ability to understand and analyze the ideas, evaluate and synthesize the arguments in a variety of sources before making any conclusions, and then presenting them clearly to the reader.

#### RationaleTM Application in Writing

The role of Rationale will be an effective way to improve critical thinking skills (Twardy, 2004). It is because the argument mapping helps the student to learn concepts, to understand argument structure, and to develop reasoning skills. Moreover, RationaleTM can be used by the teacher as a tool to help students build map arguments properly because there is a table for the argument topic at the top level then followed by supporting claim and the objection. Furthermore, RationaleTM can help the students get better at argument analysis and evaluation which is supported by (Gelder, 2007) claims that by practicing argument mapping through this media the students are forced to be more structured in expressing their idea critically in argumentative writing which help them to build their critical thinking skills. Thus, rationale can be used as media to develop student' critical thinking in argumentative writing.



Figure 1: Print screen of Rationale Application

### 3. RESEARCH METHODS

In carrying out this research, the writer used descriptive qualitative research because the researcher needs to describe the process of the implementation Rationale application in teaching writing argumentative text and the students' critical thinking in their writing. This research employed descriptive qualitative research was in line with (Ary, 2010) who stated that qualitative research provide rich descriptive accounts targeted to understanding a phenomenon, a process, or a particular point of view from the perspective of those involved. It means that the process was done through analysis and description without manipulating the teaching learning process.

The population of this research was undergraduate students from one of university in Surabaya who take a writing class. There were twenty students in every class then the writer took one class and described the process of the implementation of Rationale application in teaching writing and how their students' critical thinking in their writing performance.

The writer used fieldnotes to obtain the information related to the classroom condition when the implementation of rationale application is conducted. This instrument is used in the observation stage during the teaching learning process. The result of fieldnote is delivered in the form of description. (Ary, 2010) stated that qualitative research may use a variety of data collection techniques. Thus, the writer also used student writing task as the instrument to get the data. Task is an activity which was given by the teacher in teaching learning process as an exercise for the students. In this study, the researcher used an essay writing task. In analyzing the students' task, the researcher used the guideline of indicators in writing based on Facione. Here are the samples of guidelines:

**Table 1: Scoring rubric**

Labels	Emerging	Developing	Mastering
Content	20-30% of the skill	30-40% of the skill	40-50% of the skill
Organization	20-30% of the skill	30-40% of the skill	40-50% of the skill
Language Use	20-30% of the skill	30-40% of the skill	40-50% of the skill
Style	20-30% of the skill	30-40% of the skill	40-50% of the skill
Conclusion	20-30% of the skill	30-40% of the skill	40-50% of the skill
Overall	20-30% of the skill	30-40% of the skill	40-50% of the skill

After the data have been collected, the writer analyzed the data descriptively through the entire phenomenon happened. This is the qualitative study thus the data analyzed inductively, in words rather than in numbers. The data which come from students' writing task result should be transcribed before sorting into relevant data. The data will analyze based on the fact and the interpretation using scoring rubric by (Facione, 1998) consist of six criterions. Those are (i) Interpretation (ii) Analysis (iii) Evaluation (iv) Inference (v) Explanation and (vi) Disposition.

#### 4. DISCUSSIONS OF MAIN THEMES/ RESULTS AND DISCUSSIONS

##### *Result and discussion of the implementation*

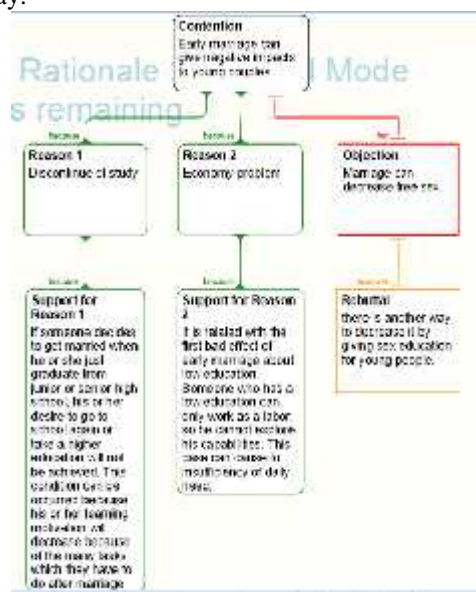
The implementation of rationale application can be figured out from the result of the fieldnotes. The researcher observe twice in the writing class. There were three stages followed in the implementation of rationale application, Pre-activity, Whilst-activity, and Post-activity.

Pre-activity, the lecture greeted the students, stimulated them the material that they would learn by giving topic of argumentative essay. She also explained about media which they would use in writing argumentative text. In the first meeting, the lecture gives topic about "joining organization" and the second meeting is about "early marriage, bad or not?". Rationale application is media which is used hereto develop students' critical thinking in students' argumentative essay. However, the implementation of rationale application has not maximum yet because the students used free trial without internet connection for only 1 month but it has been better to develop the students' critical thinking to elaborate their argumentative essay.

In the whilst-activity, the students make an outline of the topic given in the application. Here, the researcher take one of the students' outline in rationale application. At the top level of table, she wrote early marriage can give negative impacts to young couples then followed a supporting claim marriage can discontinue of study and economy problem. Then, there is an objection marriage can decrease free sex. In the rationale application, the students are forced to fill the table by analyzing the positive and negative impact of something. (Washburn, 2010) stated when the students criticize

things both in terms of the negative side and the positive side of things, they may lead to have a critical thinking.

After the student makes outline, they copy into words and elaborates their outline to be essay. When the students make an outline in the rationale application, it helps the students get better at argument analysis and evaluation. It was in line with (Gelder, 2007) claims that by practicing argument mapping through this media the students are forced to be more structured in expressing their idea critically in argumentative writing which help them to build their critical thinking skills. In the post activity, the lecture summarized what they had learnt and the students present their argumentative essay.



**Figure 2: Print screen of the students' outline in Rationale Application**

Result and discussion of the students' critical thinking in their argumentative writing

Related with the students' critical thinking writing result, the researcher will describe it generally. Almost all students were considered as the successful critical thinker because they achieved the components which adapted from (Facione, 1998). The scoring for critical thinking in argumentative writing rubric comprised (i) Interpretation (ii) Analysis (iii) Evaluation (iv) Inference (v) Explanation and (vi) Disposition.

The first was about interpretation, their interpretation aspects belong to mastering level because students are able to complete the topic and the details are related with the given topic. They are able to cite and interpret outside sources accurately. For the analysis belongs to mastering level, it showed that almost all of the students give space to counter argument which belongs as a critical thinker because they are able to see something in two sides (Washburn, 2010).

In the evaluation aspects belongs to developing level because not all the students are able to evaluate the relationship between their

argument and the source they just quoted. But, they quite understand how to elaborate the organization of the task accurately because they can explain in chronological order.

Next, inference and explanation is similar. If inference deals with the evidence and drawing conclusion. Explanation deals with the students' ability to use evidence as support an argument. Here, the students are able to use an evidence to back up their argument. They usually used an evidence after a claim. It means that their ability to justify and explain assumption and reason with evidence to convince the reader belong to mastering level. The last, disposition belong to developing level because students are able to demonstrate an understanding of some perspective but difficult to evaluate these diverse perspective. Although there is little inaccuracy in evaluating different perspective in their essay, it does not affect in meaning.

## 5. CONCLUSION

Based on the analysis of previous result, the researcher concluded that rationale application is appropriate in teaching writing argumentative text to the undergraduate student in one of university in Surabaya.

In the implementation of rationale application was done into three phases; they are pre-activity, whilst-activity and post activity. In a pre-activity, the teacher greeted the students and explained the material, media and technique which is suitable for them in learning argumentative writing. In the whilst-activity, the student makes an outline in rationale application by filling their arguments and counter arguments in the table. After that, they copy it into words and elaborate to be essay. In the last activity, the students were asked to present their result.

After analyzing the students' critical thinking in their writing, the writer found that the use of rationale application give positive effects to the six aspects of critical thinking rubric proposed by (Facione, 1998). Such as: (i) Interpretation (ii) Analysis (iii) Evaluation (iv) Inference (v) Explanation and (vi) Disposition. Most of them were categorized into developing and mastering level.

In conclusion, rationale application provides students not only with greater motivation to write and to engage their creativity in writing argumentative text, but it also leads them to think critically of evaluating something. Hopefully, this study can enrich the literature of critical thinking theory about incorporating technology into the learning environment which contributes to students' development of critical thinking proposed by De la Harpe B, Peterson F (2009) entitled the theory and practice of teaching with technology in today's colleges and universities.

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