Critical Thinking in an EFL Research Writing Subject: An Analysis of Students' Experience

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Abstract: This research aims to find out EFL research writing students' perception and challenges in implementing critical thinking activities. The subject English for Research Writing (ERW) in an an Foreign Language (EFL) subject aims to train students to conduct a small research and write the research report based on the United Nations' Sustainable Development Goals (SDGs). This qualitative research underlies the concept based on the model of critical thinking from Bloom's taxonomy and Paul and Elder Wheels of Reasons. Surveys to 97 respondents from three classes were conducted to collect the data. The results found that 79.4% respondents help them specify problems and solutions and 70% thought they could practice how to think critically. The challenges they faced (53%) was on the lack of English vocabulary, 38% found it hard to get ideas and 57% respondents found it hard to explain their opinion. The findings contribute to a clearer understanding on what aspects need to prepare and reflect on.
Keywords: Critical Thinking, Research Writing, Project-based learning

INTRODUCTION

Education system evolves and teachers adjust approaches and techniques based on the changes (Harizaj and Hajrulla, 2017). Students are encouraged to study and participate in group or team projects on a regular basis in this way. The capacity of the learner to behave and think critically is one of the elements that influences their communication in the collaboration. Through critical thinking, students improve their English communication skills. Therefore, encouraging critical thinking promotes independent learning. Although the term critical thinking skills has several definitions, the capacity to reason logically and in an inquiring manner is the fundamental idea behind them all. The ability to govern one's own thought processes and establish suitable benchmarks and criteria for self-analysis is referred to as critical thinking.

Tasks and assignments utilized in class have an impact on students' perceptions of the language. The students apply their critical thinking abilities to read, evaluate, and comprehend a passage. They occasionally employ these abilities unconsciously. In a language lesson, the teacher's role is crucial. It is the responsibility of educators to impart critical thinking abilities in addition to language proficiency (Paul and Elder, 2014). Teaching English is not merely to explain the lesson, explain vocabulary, read aloud, give homework and that is done. An effective teacher should give instructions on how to learn this vocabulary, how to write an essay, how to write a composition, and so on. A well-prepared teacher uses different skills in pedagogy in student-centered classes where the language context should be meaningful. The teacher assists and monitors the students while working on course assignments where the language is spoken and understood. While thinking critically, students try to relate the known information with the unknown, draw schemes, and relate thoughts with meanings. It is the teacher's task to show them how to do this, to resolve and draw conclusions. Through critical thinking, students develop creativity and enlarge their vocabulary, language knowledge, and cultural knowledge as well.

Harizaj and Hajrulla (2017) state that a teacher modifies methods and strategies in accordance with a student's preferred learning style. In this approach, students are motivated to study more and to regularly take part in group or team projects. One of the things that affects a learner's communication is their ability to act and think critically. Students' critical thinking abilities help them communicate more effectively in English. When it comes to language learning, particularly learning English as a second or foreign language, where a combination of historical, social, cultural, and political issues is involved, the necessity of working on critical thinking among ESL/EFL Learners is more severely felt, and needs to be equally highlighted by lesson planners, materials developers, teacher educators, and teachers. It is unfortunate that only a few studies had been conducted so far to throw some light on the importance of critical thinking in English language classes (Birjandi and Bagherkazemi, 2010; Fahim, Bagherkazemi and Alemi, 2010). Birjandi and Bagherkazemi (2010) for example, examined the relationship between the critical thinking ability of English language teachers and their success in teaching as measured by the Successful Iranian EFL Teacher Questionnaire (SIETQ). They found out that three subscales of the Watson-Glaser Critical Thinking Appraisal, i.e. drawing inferences, interpreting evidence, and evaluating arguments were predictive of about 50% of higher teacher success. Taking a more holistic view of critical thinking, Ku (2009) maintains the maturation of the conceptualization of critical thinking from a preoccupation with cognition to one which has both a cognitive and a dispositional aspect to it.

In the context of Indonesian education, critical thinking has just been introduced in the national *Kurikulum Merdeka* and has become the continuing focus of education through Outcome-Based Education (OBE). Therefore, its practice is

still lack of attention and studies. There is a need for more studies on the topic of critical thinking, especially due the new implementation, on the problems and challenges that both students are teachers encounter. Therefore, this study aims at exploring the implementation of critical thinking in an English for Research Writing subject whose objective is to write a research-based article according in relation to issues as stated in the UN's 17 Sustainable Development Goals (SDGs). More importantly, this study focuses on how the students perceive their learning experience with critical thinking questions and goal in their subjects. What is critical thinking according to the students? How is the students experience in implementing critical thinking activities? What are the challenges that students have in the implementation of critical thinking activities in their learning? These are some research questions that this paper brings in focus, from theory to practice. The findings are beneficial to the implementation of outcome-based learning for both students and educators.

THEORETICAL FRAMEWORK

Bloom's taxonomy (Ormell, 1974) explains the process of thinking from the lower level that is 'remembering' concepts until the most critical one that is to create. In language learning, the product to create is language related product and those of the most common output or critical thinking are academic writings such as research report, journal article, thesis, dissertation, and many more. Therefore, the result of critical thinking as an outcome are usually in forms of academic writings that require students to create.

Bloom's Taxonomy another characteristic of critical thinking is on the way its learning in the classroom can correlate to the real-life problems. In relation to this, The United Nation since 2016 has published 17 Sustainable Development Goals (*United Nations Department of Economic and Social Affairs Sustainable Development*, no date) for the world that comprehend what problems the world has been experiencing and establishing the solutions to the problems. The 17 SDGs have been brought to the classrooms to relate what students learn in theory to the real application in the real word to provide the solutions. Some of the issues that can be discussed in students' papers such as poverty, hunger, equality, education, justice, peace and energy consumption. Other than Bloom's taxonomy, a critical thinking model is also proposed by Paul and Elder (2014).

Critical thinking is defined as the process of thinking and in Paul's model there are eight elements in the process of thinking. The first is 'question of issue' which means the students should recognize and be aware of the problems in the real life. This can be helped by the UN's 17 Sustainable Development Goals (SDGs). The second element is to decide the objective or the purpose of thinking. Then, the third element is to establish 'point of view' which means understanding the perspective towards the issue. The fourth element is setting up the theoretical framework which includes theories, definitions, principles, or models. The fifth is

to gather information such as data, facts, observation, and experiences. The next element is to make assumptions and presuppositions from the data. After that, implication and consequences are created, here is to make the conclusion and recommendation from all the other elements. These elements in Paul's wheel of reasons are like the process of writing a research-based articles that can be adopted to the English classrooms such as the classes as the objects in this study.

METHOD
Research Design

This research is descriptive qualitative using observation and questionnaire. The data is analysed with tabulation to summarise the close-ended questionnaire, and thematic analysis (Braun and Clarke, 2012) is applied to analyze the open-ended questions. Creswell (2012, 2014) suggests surveys to elicit opinions, attitudes, emotions, beliefs, perception, and behaviour from the respondents. However, since surveys may suffer from potential self-reporting issues, the analysis is complemented with open-ended questions which were part of the survey. Those questions were analyzed using thematic analysis (Braun and Clarke, 2012). As a research flow, several steps will be carried out. First, the researcher will create a research instrument in the form of a questionnaire and determine the points according to the research questions.

Participants

Participants of this research are 97 students taking an English subject focusing on a research report project in the same university. 100 % of them were in semester one. 90% are aged 18-20 years old with 53% are female and 47% are male students.

In table 1. students' experience and background are shown. More than half of them (58%) had never had any experience in having classes focusing on critical thinking materials and examination. From these results, the participants are freshers who are mostly new to the experience of university learning. Therefore, questions about what they perceive on their perception on what critical thinking means and how they have their learning experience are important to discuss.

Table 1. Students' demographic information

Semester		Ages		Experience with critical thinking lesson		Experience with critical thinking exam	
1	2 and above	18-20 y.o.	others	yes	no	yes	no
78 (81%)	19 (19%)	88 (90%)	9 (10%)	57 (58 %)	40 (42%)	57 (58 %)	40 (42%)
Total				*97 (100%)*			

Data Collection

The questionnaire used in this study consisted of 2 parts. The first part is about information on the demographic characteristics of the respondents such as age, gender, level of education, type of work, type of education, length of study abroad, and several other questions. The second part is questions about the critical thinking

The questionnaire as the main instrument in this study has many advantages in the efficiency factor, especially if it is done electronically so that it excels in cost benefits. To get many respondents effectively and efficiently, an electronic questionnaire via google form is used in this research. The second step tests the validation and reliability of the questions in the questionnaire, especially in terms of the suitability of the questions to the objectives and questions of this research. This step is carried out by filling in a check list sheet for each question in the questionnaire with the aim of the research. This was carried out by two other research colleagues who have research experience in the field of applied linguistics using questionnaires. Then, the next step is distributing questionnaires to the respondents. After the questionnaire has been filled by the respondents, the results of the questionnaire will be tabulated to obtain a summary. Respondents who were asked to fill out the questionnaire were those participants who are taking the subject English for Academic Writing and those who have passed the subject. Then, the results of this summary are analyzed to get several points that will be used as points in the interview. The results of the tabulated questionnaire will be analyzed so that significant and important points will be asked at the interview stage.

Data Analysis

Results from the multiple choice questions in the survey is analysed using categorization and tabulation. First, the percentages of responses from each question is tabulated to see the structure of the responses from the respondents. While for the open-ended questions, the data were analyzed thematically using an inductive approach, allowing categories and patterns to emerge directly from the data (Braun & Clarke, 2006). Finally, the data from tabulation and thematic analysis are interpreted to answer the questions of this research.

RESULTS AND DISCUSSION

The results are divided into two parts: tabulation from the multiple-choice questions and thematic analysis from the open-ended questions. Perception on critical thinking in university lessons are described and discussed.

Understanding of critical thinking

In table 2. participants' perception on the characteristics of critical lessons comprises the dominant answers of 'opinion' (66%) and 'evidence' (74%).

Discussion of problems (54%) and solutions (51%) are also the important aspects that students perceived about critical thinking.

Table 2. In your opinion, what are the characteristics of critical thinking lesson?

Statements	Responses
There should bea n opinion	64 (66%)
Opinion should be supported by evidence	72 (74.2%)
There should be a solution	49 (50.5%)
Discussion of a problem	53 (54.6%)
We can give our assumption	39 (40.2%)
We can be emotional	8 (8.2%)
There should be arguments	41 (42.3%)
Objective point of view	43 (44.3%)
Subjective point of view	23 (23.7%)

In table 2. the participants responses on what they think about the purpose of critical thinking lesson. 80% participants responded that critical thinking leads to problem solving and 64% thought that the purpose of critical thinking is to increase creativity. These dominant answers reflect the participants positive attitude towards their learning. Their understanding on the aims of critical thinking lesson helps them project the outcome of the study.

Table 3. In your opinion, what is the purpose of critical thinking learning?

Statements	Responses
To increase curiosity	36 (37.1%)
To increase confidence	35 (36.1%)
To increase creativity	62 (63.9%)
To be a problem solver	78 (80.4%)
As a foundation to other learning	34 (35.1%)
To encourage participation in learning	29 (29.9%)
To established student-centered learning	18 (18.6%)
To be communicative	44 (45.4%)
To be part of the solution	42 (43.3%)

These answers in table 2 is related to table 3. In the table, critical thinking lessons in university contributes to other aspects in life. This is because critical thinking lessons help them understand problems and make the solutions. Critical thinking lessons also make them active and creative.

Table 4. How do you think critical thinking can help you in learning?

Statements	Responses
I can understand problems and the solutions	77 (79.4%)
I can be more active in thinking	68 (70.1%)
I can be more creative	62 (56.7%)

I can be more active in action	28 (28.9%)
I can find solutions faster than before	1 (1%)

In table 4. responses from students to the questions about critical thinking and theoretical lessons in university show that most of them agree that there should be both critical thinking and theoretical aspects in their lessons. Firstly, they (77%) thought that critical thinking lessons help them in their study.

Table 5. Critical thinking and theoretical lessons

Statements	Responses
Does critical thinking practice help you in your study as a unversity student?	yes (79.4%) Sometimes (23%)
I think there should be more critical thinking questions than the theoretical questions.	Balanced (74%) More critical thinking (26%)
I think both critical thinking and theoretical lessons are important.	Agree (70%) Neutral (30%)
Is answering critical thinking questions more difficult than answering theoretical questions?	Sometimes (67%) Yes (22%) No (11%)

Table 5 showcases the participants opinion on the comparisons between critical thinking and theoretical lessons in university. 70% of them responded that both theoretical and critical thinking are important.

Challenges in implementing critical thinking activities

In the second part of this chapter, as shown in the figure 4 and 5 below, the challenges that the participants have with their critical thinking questions are discussed. In figure 3, the participants answered that answering critical thinking questions is sometimes difficult (61%) and in figure 5 shows the reasons why they are difficult. Limitation on vocabulary knowledge becomes the main reasons why critical thinking questions are hard (54%) and this problem makes them harder to explain their opinions in English. This result also indicates that finding ideas are possible for the students but describing them in English becomes the challenge for 56% of the participants.

Table 6. Is answering critical thinking questions in English difficult?

Statements	Responses
Yes	28(27.8%)
No.	8(10.3%)
Sometimes	61 (61.9%)

The data from the semi-structured interview were analyzed thematically using an inductive approach, allowing patterns and themes to emerge directly from the data (Braun & Clarke, 2006). Six major themes were identified from the

teacher's responses: understanding of formative assessment, classroom integration, feedback strategies, challenges, observed impact, and student reactions.

Table 7. What makes critical thinking in English difficult?

Statements	Responses
Lack of vocabulary knowledge	52 (53,6%)
Lack of idea	37 (38,1%)
Lack of opinion	23 (23,7%)
Lack of confidence	60 (61,5%)
Lack of ability to form sentences	13 (13,4%)
Lack of comprehension	9 (9,3%)

This study found that that critical thinking lessons are positively perceived by the students. The lesson is not only making students to practice being creative but also leading them to productive learning and becoming problem solvers. This type of learning is relevant with the current design of education in for the twenty first century. Therefore, the participants perceive the learning as important not only for the subject they are taking but also for all aspects in their university journey. However, the participants also faced some challenges in working with critical thinking activities. Some of the most difficult challenge they faced was the lack of vocabulary knowledge and the lack of ability to elaborate ideas. These two factors are important in research writing which became the participant's final project. Inability to elaborate ideas could hinder the clarity and understanding of the paper. Table 5 showcases the participants opinion on the comparisons between critical thinking and theoretical lessons in university. 70% of them responded that both theoretical and critical thinking are important. This can be perceived that the participants understand that to think critically and creatively, they need theoretical knowledge as the basis.

Critical thinking questions help 80% respondents to specify problems and solutions. 70% thought they could practice how to think critically. 38% found it hard to get ideas. This data shows that critical thinking is challenging especially when it comes to getting ideas, yet the respondents find it important to learn. By answering critical thinking questions, they can develop abilities to identify problems and find the solutions. However, the challenges they faced (53%) was on the lack of English vocabulary. 57% respondents found it hard to explain their opinion. The respondents have difficulties in stating their opinion and describing the arguments due to the limited vocabulary knowledge. This can hinder the process of critical thinking. vocabulary knowledge and skills to elaborate opinion and arguments are essentials in the process of critical thinking. It is recommended that project-based learning or Outcome-based Education (OBE) in academic writing becomes prerequisite to the basic English and Basic Writing subjects. That means students who are taking the research writing class should have learned about general English to broaden their vocabulary knowledge and have passed the paragraph and essay writings class.

CONCLUSION

It can be concluded that students dominantly think of critical thinking activities are prominent in shaping the skills of writing, especially in giving arguments and elaborating ideas. Regarding research question one about respondents' understanding of critical thinking, most of them perceived it as an activity of making evidence-based arguments. They also perceived critical thinking activities purposeful to give solutions to problems. The participants also thought that critical thinking activities are important to sustain academic writing subjects and beneficial to other subjects in general. This is similar with Aunurrahman, Hamied and Emilia, (2017) in their research that academic writing genres demand critical thinking in the making.

Research question two about the challenges in implementing critical thinking activities resulted on the most dominant answer regarding the lack of vocabulary knowledge and confidence in giving arguments. A reseach of Tahira and Haider, (2019) also found students found diffiultices in demonstrating arguiments. It is hoped that during the research writing class, students would focus more on the critical and creative ideas to solve problems instead of thinking about what and how they should out them into an article. In this paper, some suggestions for foreign language teachers to use practical activities to foster critical thinking will be presented. Thus, in English language learning and teaching contexts, critical thinking becomes more dynamic.

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