

# **THE USE OF COMPUTER-MEDIATED COMMUNICATION (ELECTRONIC DISCUSSION FORUM) TO DEVELOP AND INCREASE STUDENTS' CRITICAL THINKING SKILLS**

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Being critical is something that must be inherent in every individual nowadays. Rapidly changing information on books, TVs, radios, and other media have forced everyone to think and analyze everything critically, so that ones will come to various different opinions, arguments, and ideas. The huge influences of global and diverse changes hitting either around the world or just around the closest neighboring countries need wisdom and critical considerations. Parents in families, teachers in schools and universities are equally responsible for planting critical thinking disposition to their children and students. Education system as the main engine rolling the wheel of every single education practices has a very important role in determining the direction of education, that will be consistently applied and implemented in teaching-learning activities, and reflected by students inside and outside their classrooms. Critical thinking is believed as one of the fundamental points that must be internalized in every student's aspect of their lives. Though this has also become the realization of the vast majority of teachers and educational practitioners in Indonesia, cultivating critical thinking disposition is still likely beyond reach. Incorporating critical thinking skills within teaching-learning instructions is still very few done.

This paper outlines an attempt to integrate the aspects of critical thinking skills in one of EFL learning instructions, that is Reading V (Extensive Reading), to develop and increase students' critical thinking (CT) skills in the English Department, Faculty of Language and Art, Yogyakarta State University. A thorough review of a classroom action research focusing on the integration process of the CT aspects and the student engagement in argumentative discourse is going to be outlined in details.

## **A. Introduction**

### **1. Background of the Study Problem**

Critical thinking has become one of the important educational goals over the last two decades. In Western educational circle, the notion of critical thinking has got its attention since 1980s when John Dewey (1982) in his book *How We Think* defined critical thinking as "reflective thought" that involves suspended judgement, maintenance of a healthy scepticism, and the exercise of an open mind. These three activities entailed the active, persistent, and careful consideration of any belief, in light of the ground that supports it. Educators who promote critical thinking (CT) in their teaching practice found their support within this framework of CT notion.

Thinking, they say, is not triggered by answers; thinking is stimulated by questions (Galloway, 2004).

Gaining critical thinking skills is, therefore, an important achievement for every student on this earth. If students can empower their critical thinking, they can think critically; they will be able to distinguish facts from opinions, analyze, interpret, and evaluate any new ideas, formulating logical arguments to justify their decisions, and finally in the next step to enrich their language presentation and their presentation skills. In the context of Indonesian education, critical thinking is supposed to be our main concern since we now live in an unpredictably changing democracy. Thus, schools and universities are expected to be able to produce graduates who are able to think for themselves and are prepared to keep on standing up independently on their own long after they leave their classrooms.

This classroom action research is done as one of the efforts to promote the practice of critical thinking in the teaching-learning process in one of EFL instructions offered in the English Department, Faculty of Language and Art, Yogyakarta State University. This study attempts to integrate the aspects of CT in Reading V (Extensive Reading) learning instruction, one of the skilled courses in the English Education Study Program. There are five aspects that have been integrated: 1) recognizing assumptions, 2) identifying explicit and implicit arguments, 3) making interpretations, 4) making inferences, and 5) evaluating arguments. The purpose of the integration is to develop and increase the critical thinking skills of students taking Reading V class in 2007/2008 academic year. Computer-Mediated Communication in the form of Discussion Forum is adopted to make the integration of the CT aspects much more attracting, dynamic, and challenging.

The decision to take Reading V class as the entry point to incorporate the aspects of CT is influenced by several factors. First, critical reading that is determined as the main focus of Reading V class as stated in the study program curriculum, is in line with the development of critical thinking. Second, reading is regarded as the starting point of gaining critical thinking as stated by Crescimanno (1991) below:

*“... critical thinking can be gained by inviting students into the depth of teaching materials lecturers have prepared. Reading is therefore undoubtedly a powerful weapon to lead students to move beneath the surface information or knowledge.”*

These two factors added with the phenomena found in the preliminary observation upon the teaching-learning process in some Reading V classes in the study program lead to the urgency of conducting this classroom action research. The following are the phenomena found in the preliminary observation that construct the background of the research problems:

1. The field observation showed a strong indication that the vast majority of the 5<sup>th</sup> semester students are incapable of analyzing, synthesizing, and evaluating problems. This is also proven by the low grades achieved by the students in content-based courses that usually advance analytical questions (essay/opened questions).
2. The observation also recorded that the vast majority of the high semester students are not able to empower their analytical and critical thinking skills so as to

- hamper them to take active participation in classroom discussion. As a result, the discussion is often dominated by the same students.
3. The 2<sup>nd</sup> point outlined above has an implication that risk-taking behavior is still something beyond the reach, which is indicated by the low frequency of the students' participation in classroom discussion. To overcome this problem, the study proposed the use of Discussion Forum as a medium of communication to break the students' shyness. This electronic discussion forum is expected to be a good solution for the students to rehearse their self-confidence to take an active participation in classroom discussion.

In short, this study is expected to be able to solve the problems indicated by the preliminary problems above. The use of discussion forum is designed in such a way that it is projected to attract the students' interest to participate and write more complex sentences before they finally decide to take risk in classroom discussion by advancing their complex, analytical, and critical arguments. In the other words, the students' participation in the forum discussion, in the next step, can be used to be a good rehearsal for them before they decide to participate in classroom discussion. In so doing, the students are expected to be able to develop and increase their ability to empower their critical thinking skills.

## **2. Focus of the Research**

This study deals with the attempt to improve the quality of the teaching-learning process of Reading V which focuses on the development of critical reading skills. The focus of the research, referring to the problems found in the preliminary observation, falls on three points:

- a) The inability of the 5<sup>th</sup> semester students in empowering their analytical and critical thinking skills affects the frequency of their participation in solving questions requiring the process of analysing, synthesizing, and evaluating.
- b) The integration of the five aspects of CT skills into Reading V learning instruction is expected to be able to help the students to maximize their critical thinking skills.
- c) The presentation of the input texts integrating the CT aspects on the Electronic Discussion Forum can hopefully generate more dynamic, interesting, and challenging teaching-learning process.

## **3. Aim of the Research**

In line with the focuses of the research, the aims of this study are, therefore, to:

- a) improve the quality of the teaching-learning process in Reading V class by integrating the elements of CT into Reading V learning instruction and taking advantage of discussion forum as the medium of the presentation of the learning instruction integration.
- b) develop and increase the students' critical thinking skills by training them to analyze, synthesize, and evaluate the problems presented on the selected input texts.

- c) develop the students' self-confidence in advancing their ideas, opinions, arguments, analysis, synthesis, and evaluation.

#### **4. Literature Review**

##### **A. What is Critical Thinking?**

Over the past few years, Indonesia has been experiencing many situations that force its citizens to think. Various problems that strike this country have reminded some educators to promote the practice of critical thinking in classroom activities. What is critical thinking? Some experts have defined the definition of critical thinking.

Though it is debatable whether critical thinking should be considered as a general skill or a specific one, McPeck (1990) claimed critical thinking as ability resembling verbal ability or intelligence. This claim implies a belief that it is theoretically possible to train people for critical thinking within very narrow domains and practical tasks. While, as having been mentioned above, in his book *How We Think*, John Dewey (1982) defined critical thinking as "reflective thought" that involves suspended judgement, maintenance of a healthy scepticism, and the exercise of an open mind. These three activities entailed the active, persistent, and careful consideration of any belief, in line with of the logical basis that supports it. Thus, Dewey's definition suggests that critical thinking has both an intellectual and an emotional component. Within this definition, students must be taught to examine, prod, question, and reflect on what they have learned. In brief, critical thinking involves students in doing things (probing, questioning, etc.) and thinking about the things they are doing (reflecting, evaluating teacher feedback, etc.). John E. McPeck (1990) mentioned that most of the proponents of critical thinking defined critical thinking within the standard approach of "argument analysis", and Russel Crescimanno (1991) in his article *The Cultivation of Critical Thinking: Some Tools and Techniques* emphasized that critical thinking in class basically deals with how teachers invite their students into the full depth of the material they teach. Critical thinking in this context should give students some realisation that knowledge can be deepened into understanding which can, in time, ripen into wisdom.

All those definitions basically go to the same path; the path that shows us that critical thinking is the ability to think clearly and rationally-to intelegently analyze, interpret, synthesize, and evaluate any input or information we receive.

##### **B. Reading and Critical Thinking**

Reading is an interactive mental process that requires a reader to engage in the process of using knowledge, skills, and strategies to encode meaning. The reader's knowledge, skills, and strategies include: 1) linguistic competence that covers the ability to recognize the elements of the writing system, knowledge of vocabulary, knowledge of how words are structured into sentences; 2) discourse competence that comprises knowledge of dicourse markers and how they connect parts of the text to one another; 3) sociolinguistic competence that requires a reader to gain knowledge about different types of texts, their structure and content; 3) strategic competence that signals the ability to use top-down as well as bottom-up strategies. A critical reader, therefore, must be able not only to meet this requirement, but also to evaluate the

credibility of the piece of writing s/he is reading. To do so s/he must be able to apply the taxonomy of thinking in order to come to a justifiable point of view. This means that a critical reader is a reader who is able to activate and empower his/ her critical thinking skills. The most influential model of critical thinking is presented by Bloom with his Taxonomy of Higher Thinking. Bloom categorized thinking into the following six processes: 1) knowledge, 2) comprehension, 3) application, 4) analysis, 5) synthesis, and 6) evaluation.

It is undeniable that no one can become a better thinker just by reading a book. In order to be good thinkers, ones need to develop attitude and disposition of a critical thinker. However, reading can become the best starting point to stimulate critical disposition. By reading ones are challenged to know not only the surface of appearance of a problem, but also the in-depth insights of the problem. In addition, reading can be the materials to solve problems since ones are not able to contribute their critical arguments, ideas, or suggestions if they have insufficient knowledge of a particular topic. This has been proven by Bloom with his innovation of taxonomy of learning. In Bloom's taxonomy of learning, indeed knowledge acquisition is put on the first level. This innovation has at least implied that indeed knowledge is the main input for the process of thinking. Hence, in order to be critical while reading, ones undoubtedly must undergo the stages of getting knowledge, comprehending, applying, analyzing, synthesis, and evaluation. In relation to the typical classroom situations in Indonesia, in which the vast majority of students tend to be passive recipients, it is therefore important to find various reading tasks to stimulate students to have experienced the stages of critical reading disposition.

### **C. Computer-Mediated Communication (Discussion Forum)**

The use of internet in language teaching, especially in the teaching of English, has been a need and a demand to enhance the quality of the teaching-learning process. Some prerequisite conditions, such as computer access, internet connection, internet account, and email address, are required for using internet in language teaching. The use of internet in language teaching will not only create a more effective teaching-learning process, but also will make learners' learning experiences more contextual and meaningful. Warschauer et.al. (2003: 7) mentioned 5 reasons why the use of internet can transform a conventional teaching-learning process into a more dynamic, contextual, and meaningful teaching-learning process:

#### **1. Authenticity**

A language teaching-learning process can be said successful if the contexts provided are close to the real or authentic ones. Internet is one of the means which has an unlimited capacity to provide language learners with unlimited access to authentic learning texts. Learners has unlimited options to choose relevant and authentic materials to their language learning.

#### **2. Literacy**

The skills of reading, writing, listening, communicating, and presenting are some skills that have to be possessed by students in the globalization era. The autonomy of exploring unlimited relevant and authentic learning materials facilitate language learners to achieve the literacy toward the language skills.

### 3. Vitality

Internet can be a great motivation for language learners to learn since internet functions as a medium that is flexible, constantly changing, interactive, and connected to real-life needs.

### 4. Interaction

Interaction is the major aspect of acquiring language and gaining automaticity and fluency. Internet provides opportunities for students to interact 24 hours with native and nonnative speakers around the world.

### 5. Empowerments

Gaining mastery of using and operating internet allows teachers and students to become autonomous lifelong learners.

Being classified as an unlimited communication provider, internet is categorized into *asynchronous computer-mediated communication*, *synchronous computer-mediated communication*, and *hypertext*. Computer-mediated communication (CMC) refers to communication that occurs via networked computers. Asynchronous CMC is CMC that does not require the people communicating to sit at the computer at the same time. Rather, it is done in a delayed fashion in the way that messages can be posted to be read later. The examples of asynchronous CMC are email and web bulletin boards. Synchronous CMC, on the other hand, demands all participants to sit at the computer at the same time. Messages are sent immediately at the same time as the people doing communication are interacting. Thus, communication takes place alive. The examples of synchronous CMC are chat rooms, online discussion forum, instant messaging, and videoconferencing. The third category of communication via internet is hypertext. Internet is structured by a worldwide repository of linked multimedia documents. These millions of documents or pages are brought together on the World Wide Web. The World Wide Web is based on the principles of hypertext. Hypertext is a nonlinear, linked form of information organization in which documents in database are connected via hyperlinks.

On a website the categories of both synchronous and asynchronous CMC or the combination of both possibly take place. One of the examples is electronic (online) asynchronous CMC, that is a discussion forum done online whereby the texts or the recorded information can be stored and opened anytime. In the language teaching-learning process, asynchronous electronic (online) discussion forum is often utilized as a medium of interaction between teachers and students. Warschauer (2000) outlined some points to ponder in using this electronic discussion forum:

1. The use of electronic discussion forum in language teaching needs a careful planning and arrangement. Teachers are not allowed to assume that students will automatically take advantage of this forum because of its easy access.
2. Teachers must be active and do not dominate.

3. The idea of integrating electronic discussion must be combined with other classroom activities.
4. In electronic discussion forum, the direct error correction on the web must be avoided.

## **B. Method**

### **1. Type of Research Method**

This study employed a classroom action research developed by Kemmis and McTaggart (1993). This model of action research covers four processes: 1) Planning, 2) Action, 3) Observation, and 4) Reflection.

### **2. Research Setting**

The study was taken place in the English Education Study Program, Faculty of Language and Art, Yogyakarta State University. A number of 29 students of the 5<sup>th</sup> semester students taking Reading V class in the academic year of 2007/2008 actively participated. Based on the database in the academic division, 80 students enrolled in four Reading V classes. However, the study only took 1 class with 29 students actively supporting it.

Having lasted for 4 months, i.e. from August to November 2007, the study invited 2 collaborators who were also the teaching staff of the study program. These two colleagues of the main researcher were specialized in teaching Reading class. In addition, one IT specialist also assisted the main researcher and the two collaborators in managing the IT technical matters. Since the study made use of information technology, the teaching-learning process in which the action research was conducted was equipped with internet access.

### **3. Research Procedure**

#### **3.1. General Description of the Research**

This research was aimed at improving the quality of Reading V class which requires students to be critical readers. Departing from the problem identification in the observation session, the main researcher with the two collaborators attempted to incorporate the elements of Critical Thinking into Reading V learning instruction. To better stimulate the students' active participation and to provide them with an opportunity to develop self-confidence, the integration of the critical thinking elements was integrated into Electronic Discussion Forum. The application of this discussion forum with the main objective of developing and increasing the students' critical thinking skills was then observed in the form of a classroom action research.

This action research was conducted in 14 session; 3 sessions were spent for conducting the observation sessions, 1 session for the pretest, 3 sessions allocated for the first cycle, 4 sessions for the second cycle, 1 cycle for posttest, and 2 sessions for the reflection stage for the first and second cycle.

The data collected through the pretest, the posttest, and the field notes. The tests were used to measure the progress the students made after having some trainings and reading exercises which incorporated the elements of critical thinking. During the implementation of the actions, the observation was managed by writing the field notes and recording the teaching-learning process. Reflection was done to formulate the required actions for each cycle. With the techniques of participation and collaboration, the researcher and the collaborators planned the actions, carried out the implementation, conducted the observation and evaluation.

### **3.2. The Stages of the Research**

As stated before, this study consists of 4 steps. Each step covers some activities. The following is the outline of the activities done in each stage:

#### **1. *Planning***

The activities formulated for this stage are:

- a. Identifying and exploring problems found in Reading V class that need solutions.
- b. Arranging a preliminary discussion with the students taking Reading V class concerning problems and obstacles they found and felt when joining extensive reading classes.
- c. Designing a teaching-learning scenario how the teaching-learning process should be managed both in the class and in the web.
- d. Preparing the required research instruments, including the instruments for the pretest and the posttest.
- e. Designing the format and the features of the electronic discussion forum.
- f. Selecting the input texts that function as the materials for critical discussion and analysis.
- g. Preparing a design for training the students to access the discussion forum.

#### **2. *Implementing Actions***

At this stage, the following activities were done:

- a. Conducting the preliminary test for measuring the initial level of the students' critical thinking skills
- b. Explaining the format of the management of Reading V in the form of Electronic Discussion Forum
- c. Conducting the teaching-learning process in Reading V class
- d. Conducting classroom discussions and discussing the students' participations on the online discussion forum At this stage, the researcher also analyzed the students' portfolio of the quality of their critical contributions on the web
- e. Administering the posttest for measuring the students' progress after they learnt the critical reading materials



### **3. Observing**

During the observation sessions, any changes on the students' behavior and achievement were recorded. The researcher and the collaborators used the the field notes and videotaped the teaching-learning process.

### **4. Reflecting**

After implementing all the stages, a reflection is required to find out the strengths and the weaknesses of the study. The researcher and the collaborators identified problems that have successfully been solved and ones that need further solutions in the next cycle.

### **3.3. Data Collecting Technique and Research Instruments**

The data collecting technique was done through 2 ways: 1) paper and pen data collection technique, 2) live (online) data collection technique. The first type of the instrument utilized daily field notes, student reflection sheet, portfolio on the students' participation, the pretest and the posttest sheets, the selected input texts, and the analysis of the students' analytical and critical arguments on the given problems. Field notes were used to potray the teaching-learning phenomenon during the teaching-learning process. Student reflection sheet was designed to collect data concerning the progress of the students' progress in developing and increasing their critical thinking skills from the very beginning teaching-learning process to the end of the class. The analysis of the students' analytical and critical arguments was actually the manifestation of the students' learning portfolio. While, the second type of the research instrument used the online data, audio-video record, interview and classroom discussion. The online data of the students' active participation were also used as the means to analyze the impacts of the integration of the elements of critical thinking skill into Reading V learning materials. In addition, the online data reflected the students' frequency of their participation. This kind of data were then compared to the frequency of the students' participation in classroom discussion. The in-depth interview and discussion with the students were conducted to find out their attitude in viewing the implementation of the overall actions that were aimed at developing and increasing their critical thinking skills.

### **3.4. Technique of Data Analysis, and Technique of Data Validity and Reliability**

The data collected through the adopted research instruments were then presented by means of the qualitative-descriptive technique. The qualitative-descriptive technique means that the qualitative data are described objectively. The descriptions of the process of the action implementation are really presented as the way the study is carried out. In that way the presentation is really free from the subjective interpretation of the researcher and the collaborators. The rationale underlying the research findings, the conclusions, and the implications are truly based on the phenomena occurring in the study.

The data validity was obtained by using five criteria: democratic validity, process validity, result validity, catalytic validity, and dialogic validity (Burns, 1999: 161-162). The triangulation technique was used to find the reliability.

## C. Research Findings and Discussion

### 1. The Reconnaissance Stage

Before formulating some needed actions to solve the problems in Reading V class, a thorough observation was executed. The reconnaissance stage was still required to do to prove whether the preliminary hypothesis of the research obtained from the researcher's personal observation in the field really exists. Moreover, this stage was also important to find out the real problems occurring in the class. An observation sheet in the form of a structured list of questions about reading problems and problems on expressing their free thought was assigned to the students to answer. The students' answers were, in the next step, analyzed, identified, and categorized. The categories of the problems found were ranked. The most frequency problem mentioned on the students' answer sheet was picked as the major problem that needed a further solution. The following is the list of the problems classified on the basis of the students' answers:

No.	Question No.	Summary of Problems	Percentage
1	1	Low motivation to read and lack of reference variations	16 students (51 %)
2	8	The same opportunity for the students to speak out their opinions in the class	23 students (74 %)
3	9	Two-way interaction in the class	26 students (83 %)
4	10	The low number of students' participation in classroom discussion	21 students (67 %)
5	11	Some obstacles preventing the students to participate in classroom discussion (e.g. lack of self-confidence, lack of vocabulary to comprehend the texts the students read, anxiety to make mistakes, being afraid of receiving unpleasant remarks from others, uncomfortable feeling, having no idea how to process information systematically, and being unaccustomed to expressing ideas, opinions, or arguments)	28 students (90 %)
6	13	High motivation in giving active contribution is influenced by the students' skills in empowering their critical thinking skills	23 students (74 %)
7	15	Insufficient skills and motivation to develop and	21 students (67 %)

	enhance critical thinking skills	(%)
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The above list has shown that the major problems found in Reading V class were question no. 11. This indicates that some actions need to be formulated to solve this problem.

## 2. Problem Identification

The problem identification was made on the basis of the discussion agreement between the researcher and the collaborators. Based on the agreement on the problems found in the class, we agreed that the problems that need further solutions are: 1) low motivation to actively participate, 2) lack of strategies to develop and empower the students' critical thinking skills; the skills that are mostly demanded in Reading V class in which the principle of critical reading must be demonstrated.

## 3. The Implementation of the Actions

### a. Cycle I

#### 1) *Planning*

In this stage, a pretest was given to the students to find out how well the students could express their critical analysis. The test consisted of a reading text, comprehension questions, and topics for critical analysis, discussion and writing in which the questions reflecting the aspects of CT skills would be measured.

The next step was preparing the input texts, the web of electronic discussion forum, the observation sheets, and the teaching scenario for the actions in Cycle I since the Reading V class was conducted classically both in the class and online.

The input texts were argumentative in nature taken from the Jakarta Post and the internet. The design of the input texts was as follows:

- a. Vocabulary Highlight
- b. Text
- c. Comprehension Questions
- d. Topics for Critical Analysis, Discussion and Writing

The features of the web were Announcement, Reflection, Discussion, Q and A (Question and Answer), Article, and Sending File.

#### 2) *Acting*

The activities in this stage were started with giving orientation to the students of Reading V class on the procedures of operating the web. The next activity was making the passwords and the user names of all the students joining this class.

Following those activities was the explanation of the materials related to the aspects of critical thinking skills. Those are:

- a. Recognizing assumptions

- b. Identifying explicit and implicit arguments
- c. Making interpretations
- d. Making inferences
- e. Evaluating arguments

In this cycle four class meetings were conducted both in the class and online.

### **3) *Observing***

The observation was done by both the researcher and the collaborators. The class was observed by consistently documenting any events in the class.

### **4) *Reflecting***

The results of the stage are as follows:

- a. The students' level of participation in expressing their ideas and opinions showed a good progress.
- b. In spite of that, the class management still needed improvement to encourage the students to participate more actively. One or two students appeared to be passive in the class and online activities.
- c. Another specific session on the web operation was still needed to minimize the students' reluctance in the web activities.

In addition to the reflection above, the researcher also did a reflection on the following aspects:

- a. the facilities and media
- b. the match between the material coverage and the curriculum
- c. the teaching method
- d. the class management
- e. the text variation and the level of text authenticity
- f. the students' participation in the class activities
- g. the institution's support

## **b. Cycle II**

### **1) *Planning***

Based on the results of the reflection in Cycle I, some preparations were done. The researcher prepared a more interesting teaching scenario so that the students were motivated more to actively participate in expressing their ideas, opinions, and arguments. The methods employed in this stage were group discussions, presentations, and debates.

The researcher also prepared some class sessions conducted in the computer lab or website room in order to help the students who still had problems in operating the web.

### **2) *Acting***

The activities done at this stage include:

- a. Improving the class management by changing the class setting to make the students feel comfortable and ready to contribute in the class activities.
- b. Conducting the web sessions in the computer laboratory
- c. Conducting a continuous improvement to develop the web.

In this cycle the class was conducted in four meetings.

**3) Observing**

Any changes occurring in the teaching learning process in the class and online were documented.

**4) Reflecting**

The results of the reflection are:

- a. The IT based learning appeared to give positive effects to the students, researcher, and collaborators. The use of Computer-Mediated Communication, in this case the Electronic Discussion Forum proved to be able to bridge the gap between the students who were already able to express themselves and those who still found it difficult to do so. In short, this web could be the media to improve their self confidence.
- b. The students showed a significant progress although at first they found it difficult to understand the materials on the Critical Thinking.
- c. In general the students welcomed this IT based teaching positively even though in practice they encountered some technical problems.

In addition to the reflection done with the collaborators, the researcher also conducted a reflection with the students. The following are the results:

- a. The atmosphere of the teaching learning process could be improved by using web to develop the students' critical thinking skills.
- b. The students experience some changes in their learning motivation, self confidence, writing skill, familiarity with technology, general knowledge, and also thinking perspectives.
- c. The lecturers of Reading V class also felt some changes in their relationship with their students, creativity in teaching, and also the learning resources they used in teaching.

**D. Conclusions of the Impacts of the Actions Implementation**

1. The changes

Some changes could be identified after conducting the actions in Cycle I and Cycle II. They are:

- a. The students' ability in developing the critical thinking improved a lot. It was shown in the results of the pretest and posttest below:

No.	Student	Name	Î Skor Pretest	Î Skor Posttest
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	<b>Number</b>			
1.	032224001	Novi Yulisaputri	9	-
2.	04202241005	Diana Murtianingsih	8	12
3.	04202241045	Siti Chotijah	7	11
4.	04202241046	Kunjono	5	7
5.	04202241050	Cindera Asmarawati	8	11
6.	05202241042	Hari Wijonarko	7	7
7.	04202241056	Firdaus Laili	9	12
8.	04202241030	Chahya Kusuma	7	11
9.	05202241041	Panji Purnawan	7	10
10.	04202241044	Nur Iswanti Hasani	7	11
11.	04202241073	Esti Purwaningsih	9	12
12.	04202241078	Fauzia Fahmi Yuniarti Nasution	7	11
13.	05202241043	Susanti	9	12
14.	0520224144	Wahtini	9	-
15.	05202241045	Dyah Paramita Nur Fajrin	8	10
16.	05202241046	Roro Ayu Kusumastuti	7	-
17.	05202241047	Desi Indriana	11	11
18.	05202241048	Nunuk Septiana	3	11
19.	05202241049	Maria Dian Purnama Sari	5	10
20.	05202241052	Wuri Astuti	8	11
21.	05202241053	Teti Mufrikhatun	5	9
22.	05202241054	Ismi Yuni Setya P	7	9
23.	05202241055	Erwin Abdillah	9	10
24.	05202241056	Berlian Adityas Utami	5	10
25.	05202241057	Arum Wiratsih	7	12
26.	05202241058	Citra Puspitaningrum	9	12
27.	05202241060	Yuliana	9	-
28.	04202241006	Indra Agus Eka Hariawan	-	10
29.	04202241080	Tri Budi Murwanto	9	12

- b. The quality of arguments proposed by the students both in writing and speaking also showed a significant improvement. This is shown by the scores of their critical analyses of the given texts below:

<b>No.</b>	<b>NIM</b>	<b>Nama</b>	<b>Î Skor Teks 1</b>	<b>Î Skor Teks 2</b>	<b>Î Skor Teks 3</b>
1.	032224001	Novi Yulisaputri	<b>18</b>	-	<b>23</b>
2.	04202241005	Diana Murtianingsih	-	-	19
3.	04202241045	Siti Chotijah	-	14	14
4.	04202241046	Kunjono	-	-	14

5.	04202241050	Cindera Asmarawati	<b>17</b>	-	<b>20</b>
6.	05202241042	Hari Wijonarko	-	-	-
7.	04202241056	Firdaus Laili	-	<b>11</b>	<b>16</b>
8.	04202241030	Chahya Kusuma	<b>16</b>	<b>18</b>	<b>23</b>
9.	05202241041	Panji Purnawan	-	<b>10</b>	<b>11</b>
10.	04202241044	Nur Iswanti Hasani	-	<b>18</b>	<b>19</b>
11.	04202241073	Esti Purwaningsih	15	<b>17</b>	<b>20</b>
12.	04202241078	Fauzia Fahmi Yuniarti Nasution		<b>19</b>	<b>21</b>
13.	05202241043	Susanti	-	-	15
14.	0520224144	Wahtini	<b>12</b>	-	<b>20</b>
15.	05202241045	Dyah Paramita Nur Fajrin	-	18	18
16.	05202241046	Roro Ayu Kusumastuti	-	<b>17</b>	<b>21</b>
17.	05202241047	Desi Indriana	-	-	14
18.	05202241048	Nunuk Septiana	-	-	16
19.	05202241049	Maria Dian Purnama Sari	-	-	-
20.	05202241052	Wuri Astuti	-	-	17
21.	05202241053	Teti Mufrikhatun	-	-	
22.	05202241054	Ismi Yuni Setya P	-	-	20
23.	05202241055	Erwin Abdillah	<b>13</b>	<b>11</b>	<b>22</b>
24.	05202241056	Berlian Adityas Utami	17	-	-
25.	05202241057	Arum Wiratsih	-	17	15
26.	05202241058	Citra Puspitaningrum	<b>16</b>	<b>13</b>	<b>18</b>
27.	05202241060	Yuliana	-	-	-
28.	04202241006	Indra Agus Eka Hariawan	<b>19</b>	-	<b>21</b>
29.	04202241080	Tri Budi Murwanto	<b>17</b>	<b>17</b>	<b>22</b>

- c. Not only the quality of arguments, the quality of class participation showed a significant progress.
- d. The students' mind set in the use IT in the teaching learning process also changed.
- e. The lecturers of Reading V became more familiar in the use of IT in their teaching.

2. Some implications

- a. The application of IT to support the teaching learning process really needs sufficient supporting facilities. WIFI connection of the faculty needs improvement.
- b. With the implementation of IT, the lecturers need to always access the internet consistently outside the campus.

- c. The implementation of IT demands a good planning and tight deadline to fulfill. The uploading of the material to the web must be done on time.

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