

# A Study Investigating the Relationship between L2 Writing and Critical Thinking Skills

Keigo Niji<sup>1</sup>, Fumiaki Nishihara<sup>2</sup> and Kyoko Oi<sup>3</sup>

<sup>1</sup>Chiba University, Graduate School of Education, <sup>2</sup>The Japan Institute for Educational Measurement,  
Inc., <sup>3</sup>Seisen University

keigo.niji.0925@gmail.com

## Abstract

The purpose of this paper is to report how the critical thinking skills of Japanese senior high school students changed after they learned how to construct a persuasive English essay. Three sets of data, a critical thinking skills test, a questionnaire on students' attitude toward writing from the perspective of critical thinking, and writing products, were taken as the pre and post-test. The results of the tests and their writing products indicated that the students became better writers in terms of persuasive writing and critical thinking skills.

## Keywords

*L2 English writing, critical thinking skills*

## Introduction

This paper investigates the possible relationship between writing and critical thinking skills which include finding logical fallacies and understanding the structure of a paragraph written by others. Some researchers claim that writing activities such as writing argumentative essays involve thinking critically and logically (e.g. Wade, 1995; Bean, 2001). In Japan, how to foster students' thinking ability is of vital concern in education. The current *Course of Study* (the Curriculum Guidelines issued by the Japanese Ministry of Education, Culture, Sports, Science and Technology, 2008-9) for Japanese schools emphasizes that students' thinking abilities, judgment and expressive abilities must be fostered across all subjects including foreign languages (i.e. English).

This research was conducted with a hypothesis that teaching L2 English writing will promote some aspects of the critical thinking abilities of Japanese senior high school students.

## 1. Method

### 1.1 Participants

Eighty-two 2nd-year public senior high school students (11th grade students) in Chiba, Japan participated in this study. Though they started studying English five years ago, most of them had very limited experience in studying formal English writing before they took part in this research. Generally speaking, the participants' level of English is considered to be a B1 in CEFR, which is relatively higher than ordinary Japanese high school students.

### 1.2 Procedures

Three types of data were collected from students before and after writing lessons as a pre-test and a post-test. One was the result of a critical thinking skills exam (a provisional version of the exam provided by the Japan Institute of Lifelong Learning [JILL]), another was the responses to a questionnaire on students' attitudes toward argumentative essay writing from the perspective of critical thinking, which was adapted from Stella Cottrell (2005)'s self-evaluation sheet on critical thinking, and the third was students' writing products.

We made two versions of the critical thinking skills exam based on the exam provided by JILL and other literature (The format of the two versions are exactly the same). They were developed so that we could assess the critical thinking abilities of high school students in L2 English. The exam includes questions that ask the test taker to answer why a particular utterance is illogical in the flow of a conversation, or ones that ask test takers to choose irrelevant sentences in paragraphs. We randomly assigned students to two groups. In order to obtain a counter-balance, two exams were distributed equally to the two groups in both the pre and post-test.

Three writing lessons which focused on the logical structure of English paragraphs (Table 1) were given to the students as the intervention. The students learned about the organization of an English paragraph/English essay, hierarchical structure of ideas in a paragraph or an essay, and some writing strategies, using the materials that we had developed.

Table 1: Schedule of the Lessons

Lesson No.	Contents
---	Pre-test
1	Structure of Paragraphs How to Classify Cohesion
2	Hierarchical Structure of Ideas Idea Generation
3	Writing Peer Feedback Rewriting
---	Post-test

## 2 Results and Discussion

### 2.1 Critical Thinking Skills Exam

The mean score was 13.53 for the pre-test and 14.75 for the post-test (The full score was 19). A paired samples *t*-test confirmed that there were statistically significant differences between the pre and post-test,  $t(63) = 2.188, p = .032$ , Cohen's  $d = 0.273$ . The results indicate that the students' critical thinking skills improved in this study even though they received instructions on writing alone.

### 2.2 Questionnaire on Students' Attitude toward Writing from the Perspective of Critical Thinking

Of the 39 questions in the questionnaire, we analyzed 20 questions which focus on students' attitudes toward writing from the perspective of critical thinking. Students responded to these questions on a 6-point Likert scale (6 = Strongly agree to 1 = Strongly disagree).

Though students' answers to the questionnaire remained almost unchanged after the writing class, there were some questions in which the scores increased from the pre-test to the post-test. We ran paired samples Wilcoxon signed rank tests, and found the differences between the pre and post-test were insignificant for almost all questions, with the exception for the Question 34 ('Did you decide what and how you were going to write before writing?'), whose median of the post-test ( $Med_{post} = 4$ ) was

significantly higher than that of the pre-test ( $Med_{pre} = 3$ ),  $V = 288, p = 0.001$ , adjusted  $p$  (using Benjamini-Hochberg method) = 0.022.

We can recognize from the results of questionnaire that students' attitude toward writing in view of critical thinking has remained almost constant in spite of the writing class. It should be noted, however, that due to limited data, the question of how writing classes affect students' attitudes is still unsettled.

### 2.3 Students' Writing Products

We analyzed students' writing production and found that the number of essays that have good structure increased in the post-test compared with the pre-test. We defined "good structure" as structure that has hierarchy in the arrangement of the paragraphs in an essay. The percentage of essays that had exhibited good paragraph structure was 27% for the pre-test and 92% for the post-test. A McNemar's test ensured that there were statistically significant differences between the pre and post-test,  $\chi^2(1) = 38.025, p = .000$ . The result suggests that the participants learned to make well-structured English essays.

## 3 Conclusion

The present study attempted to explore how Japanese senior high school students' critical thinking skills change through learning how to write English essays. As we have discussed above, though they did not alter students' attitude (§2.2), writing lessons can improve students' own writing structure (§2.3) as well as their critical thinking skills including comprehension of other people's arguments (§2.1). This paper revealed that it is possible that teaching L2 English writing develops the critical thinking skills of Japanese senior high school students.

### Acknowledgements

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### References

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