

# **An Experimental Study of Critical Reading and Writing Program: an analysis of pre-task and post-task**

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## **Abstract**

This paper examines whether an integrated instruction of 'Critical Reading and Writing Program' can promote the better writing habits in English among Japanese university students. One of the noticeable features of this course is that they are instructed by reading a short story as well as three academic expository essays. Why do they need to read a short story in the writing course? The process of writing an essay begins with the close reading of a text. The good academic expository writings are well structured with thematic statement, concrete illustration of argument and counter-argument. But, a short story usually is not well-structured in the sense of thematic development. It is rather chaotic in nature and our students are plunged into a number of personalities who are often very different from them. In the short story reading, the text is their data. This is the most salient difference from the academic expository essays which require the objective data either published by the authority or by one's own research. They should be able to point specific moments in the text that serve as evidence to their claim. They should be able to point specific moments in the text that seems to contradict their claim, which will be developed as their counter-argument. The experimental course was offered to two groups: advanced group and pre-advanced group. They were instructed by the same reading materials: one short story and three expository articles. In this paper, we mainly analyze the pre-task and post-task.

## **Keywords**

Integrated instruction, reading and writing

## **1 Introduction**

### **1.1 Syllabus for Critical Reading and Writing Programs**

The syllabus for Critical Reading and Writing Programs is presented in Appendix 1. One of the noticeable features of this course is that they are instructed by reading a short story as well as three

academic expository essays. You might wonder why students need to read a short story during Critical Reading and Writing Program? It must be emphasized that the process of writing an essay should begin with the close reading of a text. The good academic expository writings are well structured with thematic statement, illustration of your argument and counter-argument to include some alternative perspectives. But, a short story usually is not well-structured in the sense of thematic development. It is rather chaotic in nature and our students are plunged into a number of personalities who are often very different from them. Our students would be wildered by real confusion or ambiguity of a protagonist's utterances and a mysterious reaction to a physical or mental event depicted. There are a lot of resonances to the spirit of the age the writer was immersed in, when he/she was in the process of writing a piece. Our students' essay must contribute to the understanding the story by making sense of the text. How do they find their way far enough into a short story to make an argument about how it can be read? They can start with particular passages of a story which may intrigue them. They can list up the snags that are ambiguous or different from their own initial interpretation. They may notice some recurrent patterns which are consciously or unconsciously the writer intends to emphasize or to build up the nest of imagery associations. Our students can thus build up their own interpretation of each passage so that they can make sense of the text as a whole.

The text is their data. This is the most salient difference from the academic expository essay which requires the objective data either published by the authority or by one's own research. Summarize the snags they have found in the text and pose their good analytical questions based on their snag. Then, they can answer their own questions and reflect their snag again and again till they come up with a almost complete interpretation. The revised snag becomes their thesis. They should be able to point specific moments in the text

that serve as evidence to their claim. They should be able to point specific moments in the text that seems to contradict their claim, which will be developed as their counter-argument. Seeing this way of reading a short story, our students can transfer what they learn in short-story reading into the process of writing a well-structured academic expository writing.

## 1.2 Assessment of Pre-task and post-task.

On the 1<sup>st</sup> day, the students receive all the reading materials. They introduce each other and they are instructed on how to read a short story as well as how to read an academic expository essay. During the remaining 20 minute, they are given a pre-task which is presented in Appendix 2. The same task was used again on the final day of the experimental course. Due to the earthquake on the 11<sup>th</sup> of March, 32 participants in the four groups, only seven managed to complete the pre-task and post-task. In this paper we analyze these seven short reaction papers.

## 1.3 Assessment Methods

According to Biber, Nekrasova and Horn (2011), the traditional rubrics for L2 writing assessment can be summarized as follows:

Grammar	S-V agreement, articles, tense-aspect
Vocabulary	Word choice issues, collocation errors
Spelling	Spelling errors
Organization	topic sentence, discourse markers, transitions, paragraphing, conclusion, order of content
Content	correctness of content, completeness of content
Punctuation/ mechanics	comma, semicolon, colon, indentation, capitalization

Biber, Nekrasova and Horn (2011: 13)

Since our students can use Word 7.0 in writing their essays, most typical errors in grammar, spelling, vocabulary and punctuations can be automatically noted by the software. For this reason, we tried to concentrate computer programs to concentrate on organization and content. In the present analysis, we adopted Coh-Metrix 2.1. The present semi-automated assessment (statistical assessment) in pre-tasks and post-task, we concentrated on the following features:

Grade level
Reading Ease
Organization (connectives and causal vs intentional content)
Cohesion Halliday and Hasan (1976)
Coherence (causal content vs intentional content, see below)
Effectiveness concreteness of verbs

In the present paper, we will concentrate on the statistical approach, by using a computational tool that produce indices of the linguistic and discourse representation of a written text. The notion of cohesion and coherence we adopt here is completely based on Halliday and Hasan(1976). In order to detect cohesive ties and coherent units which are spread in the discourse, we adopt adjacent comparison and all sentence comparison. Any repetition or local tree overlapping can be computed by the following method. We segment text units into adjacent pairs. If there are N units in a sequence, there are (N-1) adjacent pairs. The number of adjacent pairs is divided by N-1, when we wish to get a ratio score. Suppose we have the following unit sequence:

Unit sequence: A B B B C A A C C B B B A C C.

We compare each pair and if the second item is the same as the first one, the score is 1 and otherwise, 0. In the present example we get:

0 1 1 0 0 1 0 1 0 1 1 1 0 0 1.

Adjacent sentences are successive sentences. If a paragraph has four sentences, the adjacent sentences would be sentences 1-2, 2-3, 3-4. On the other hand, all sentences are all possible pairs of sentences: 1-2, 2-3, 3-4, 1-3, 1-4 and 2-4. In this way we can exhaust all the possible paired comparison.

Coh-Metrix makes a distinction of weighted versus unweighted distances between sentences. The weight for each sentence pair is the inverse of the distance between two sentences ( e.g., 1/2, 1/3), with adjacent sentences having a distance of 1.

In this paper, we compare our data with Touchstone Applied Science Associates(TASA) norms and two other studies which compare Low Cohesion texts with High Cohesion texts. TASA norms present sixty mean indices obtained from 100 texts and McNamara, et al. compare psycholinguistic experimental data which manipulated the degrees of cohesion and colludes that coreferential noun overlap Latent Semantic Analysis (LSA) adjacent indices, causal ratio, word concreteness and word frequency are predictor

variables of cohesion.

## 2 Result and discussion

Since only 7 students completed the course, each performance was commented individually as much as possible.

Table 1 Pre-task and Post Task among Advanced Group

Advanced Pre-tasks	A1	A4	A6
Total No. of words	197	284	148
Total No. of Ss	10	14	10
Sentences per paragraph	5	14	3.3
Mean Length of Ss	19.7	20.286	14.8
syllables per word	1.497	1.486	17.09
Grade Level	9.8	9.9	10.3
Reading Ease	60.2	60.5	47.2
Advanced Post-tasks	A1	A4	A6
Total No. of words	189	242	142
Total No. of Ss	10	27	10
Average No. of Ss per para	3.3	1.688	5
Mean Length of Ss	18.9	8.96	14.2
Average No. of syllables in a word	1.656	1.54	1.57
Grade Level	11.3	6.1	8.5
Reading Ease	47.6	67.4	59.6

Table 2 Reference Data

TASA	L Cohesion	H Cohesion	Lscience	Hscience
Total No. of words	298	507.3	673.1	404
Total No. of Ss	13.5	36.3	41.7	55
Sentences per paragraph	13.5	3.9	10.6	5.5
Mean Length of Ss	24.8	13.5	15.8	7.3
syllables per word	1.61	1.54	1.53	1.3
Grade Level	11.4	7.8	8.4	2.7
Reading Ease	45.3	62.9	61.6	88.6

A1 improved grade level from 9.8 to 11.3 and the post grade is comparable to TASA norm. A4 remained High Cohesion Level at Post-task. As

### 2.1 2.1 Grade Level and Reading Ease

Table 1 presents the results in pre-task among Advanced Group. Table 2 presents TASA norms and Low versus High Cohesion in Science texts and narrative texts which we call here "Reference Data".

Table 3 indicates, in terms of Grade Level, Intermediated group performed much better than Advanced Group.

Table 3 Intermediate Group

Intermediate Pretasks	B1	B2	B3	B8
Total No. of words	144	115	133	180
Total No. of Ss	9	7	6	9
Ss per paragraph	9	1.17	2	4.5
Mean Length of Ss	16	16.4	22.2	20
syllables per word	1.7	1.5	1.6	1.9
Grade Level	10.6	8.8	12	12
Reading Ease	47.8	61.4	48.8	44.2
Intermediate Post-task				
Total No. of words	146	150	146	165
Total No. of Ss	10	9	7	10
Ss per paragraph	10	1.8	1.75	3.3
Mean Length of Ss	14.6	16.7	20.9	16.5
syllables per word	1.7	1.6	1.6	1.9
Grade Level	10.1	9.5	11.2	12
Reading Ease	48.9	56.8	51.8	28.1

### 2.2 WordNet and MRC indices

Table 4 presents indices based on WordNet: causal

content (raw frequency of causal verbs, links and particles), causal cohesion (ratio of causal particles

to causal verbs), intentional content (raw frequency of intentional actions, events and particles), Noun hypernym (mean hypernym values of nouns), and Verb hypernym (mean hypernym values of verbs). Table 4 also refers to two Medical Research Center (MRC) indices: Concreteness content

(concreteness means for content words) and Minimum (Concreteness minimum for content words). Table 5 represents those in TASA norms and comparison between Low and High Cohesion data. Table 6 represents results among pre-advanced group.

Table 4 Advanced Group

Pre-task				
Causal Content	41.7	87	75.2	61.1
Causal cohesion	0.4	0.8	0.83	1.4
Intentional Content	13.9	17.4	7.52	27.8
Hypernym nouns	4.1	4.72	4.64	4.47
Hypernym verbs	1.3	1.36	1.32	1.34
Concreteness Content	360.8	336.8	354.36	370.86
minimum	186	197	197	158
Post-task				
Causal Content	109.59	60	61.64	96.97
Causal cohesion	1.4	0.25	0.43	1.43
Intentional Content	27.4	26.67	27.4	18.18
Hypernym nouns	5	4.96	4.55	4.2
Hypernym verbs	1.4	1.31	1.56	1.49
Concreteness Content	375.1	360.85	366.74	364.07
minimum	194	196	194	186

Table 6 Intermediate Group

Pre-task				
Causal Content	41.7	87	75.2	61.1
Causal cohesion	0.4	0.8	0.83	1.4
Intentional Content	13.9	17.4	7.52	27.8
Hypernym nouns	4.1	4.72	4.64	4.47
Hypernym verbs	1.3	1.36	1.32	1.34
Concreteness Content	360.8	336.8	354.36	370.86
minimum	186	197	197	158
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Causal Content	109.59	60	61.64	96.97
Causal cohesion	1.4	0.25	0.43	1.43
Intentional Content	27.4	26.67	27.4	18.18
Hypernym nouns	5	4.96	4.55	4.2
Hypernym verbs	1.4	1.31	1.56	1.49
Concreteness Content	375.1	360.85	366.74	364.07
minimum	194	196	194	186

Table 5 Reference Data

	TASA	L Cohesia	H Cohesia	Lscience	Hscience	narrativeL	narrativeH
Causal Content	33.8			89.1	88.3	40	56.8
Causal cohesion	2.6			0.194	0.808	0.727	1.909
Intentional Content	10.9	0.87	1.14	9.9	7.7	48.9	31.1
Hypernym nouns	4.95			4.585	4.619	6.216	6.239
Hypernym verbs	1.48			1.371	1.329	1.403	1.499
Concreteness Content	376.5			447.561	441.895	382.635	393.116
minimum	182.1			190	186	158	158

### 2.3 Argument Overlap

Verbs and adjectives are said to be predicates. Predicates take nouns, pronouns as arguments which are grammatically termed as object NP and subject NP. Cohesion and coherence requires

some repetitions of such arguments, indicating that within a paragraph or within a text as a whole, a writer is not digressing or shifting their topics so often. In this sense argument overlaps confirms some degree of cohesion and coherence.

Table 7 Advanced Group

Pre				
Argument Overlap				
Adjacent Argument			0.667	0.692
Adjacent Stem			0.667	0.692
All argument			0.756	0.718
All Stem			0.667	0.612
Post				
Argument Overlap				
Adjacent Argument			0.556	0.115
Adjacent Stem			0.556	0.154
All argument			0.6	0.191
All Stem			0.6	0.186

Table 8 Reference Data

	TASA	L cohesior	H cohesion	Lscience	H science	Lnarrative	H narrative
Adjacent Argument	0.554	0.396	0.575	0.648	0.822	0.353	0.63
Adjacent Stem	0.462	0.448	0.608	0.648	0.889	0.147	0.537
All argument	0.45	0.275	0.375	0.382	0.523	0.288	0.509
All Stem	0.375	0.317	0.407	0.4	0.61	0.143	0.384

Table 9 Intermediate Group

Pre	Connectives	based	on	WordNet
Argument Overlap				
Adjacent Argument	0.375	0.5	0.8	0.625
Adjacent Stem	0.25	0.333	0.6	0.625
All argument	0.389	0.333	0.667	0.556
All Stem	0.333	0.333	0.6	0.583
Post				
Argument Overlap				
Adjacent Argument	0.889	0.625	0.667	0.333
Adjacent Stem	0.778	0.375	0.5	0.333
All argument	0.622	0.333	0.524	0.289
All Stem	0.556	0.222	0.429	0.289

Table 10 Advanced Group

Pre	Connectives	positive additive	positive temporal	positive causal	negative additive	negative temporal	negative causal	All	positive logical	negative logical
Post										
Positive additive		40.6	28.2	33.8						
positive temporal		0	7	0						
positive causal		30.5	14.1	40.5						
negative additive		10.2	7	6.8						
negative temporal		0	0	0						
negative causal		0	3.5	0						
All		81.2	66.9	87.8						
positive logical		35.5	17.6	74.3						
negative logical		10.2	14.1	6.8						
Post										
Positive additive		31.7	37.2	42.3						
positive temporal		5.3	8.3	7						
positive causal		37	41.3	28.2						
negative additive		5.3	12.4	7						
negative temporal		0	0	0						
negative causal		5.3	0	0						
All		84.7	95	91.5						
positive logical		26.5	33.1	49.3						
negative logical		10.6	12.4	7						

Table 11 Reference Data

	TASA	L cohesion	H cohesion	Lscience	H science	L narrative	H narrative
positive additive	34.8	39.64	36.25	9.9	17.27	15.56	20.15
positive temporal	8.1	10.68	11.88	19.9	17.27	17.78	12.82
positive causal	22.6	21.4	28.57	14.85	40.31	17.78	36.63
negative additive	13.2			12.38	15.36	8.89	9.16
negative temporal	0.42			0	0	0	0
negative causal	1.29			0	0	0	1.83
All	79.4	69.29	73.26	56.93	90.21	53.33	76.93
positive logical	19.07			12.38	38.39	24.4	34.8
negative logical	14.74			12.38	15.36	8.89	10.99

Table 12 Intermediate Group

Connectives	positive additive	positive temporal	positive causal	negative additive	negative temporal	negative causal	All	positive logical	negative logical
Post-task									
Connectives									
positive additive	27.778	34.783	45.113	27.778					
positive temporal	13.889	0	7.519	22.222					
positive causal	13.889	43.478	37.594	38.889					
negative additive	20.833	17.391	0	16.667					
negative temporal	0	0	0	0					
negative causal	0	0	0	0					
All	83.333	95.652	90.226	100					
positive logical	20.833	26.087	37.594	50					
negative logical	20.833	17.391	0	16.667					

## 2.5 Structural Similarity

It is not stylistically nice to repeat the same syntactic structure. For this reason, we investigate structural repetitions in this study.

Table 13 Advanced Group

Pre	A1	A4
Structural Similarity		
Adjacent	0.049	0.106
All across paragraphs	0.069	0.099
All within paragraphs	0.069	0.099
Post		
Structural Similarity		
Adjacent	0.072	0.115
All across paragraphs	0.08	0.125
All within paragraphs	0.071	0.133
		0.062

Table 14 Reference Data

	TASA	L cohesion	H cohesion	L science	H science	L narrative	H narrative
Adjacent	0.093	Not available	Not available	0.212	0.152	0.241	0.18
All across paragraphs	0.085	Not available	Not available	0.216	0.152	0.249	0.165
All within paragraphs	0.085	Not available	Not available	0.235	0.168	0.266	0.172

Table 15 Intermediate Group

Structural Similarity (Pre)	B1			
Adjacent	0.121	0.106	0.067	0.1
All across paragraphs	0.129	0.091	0.065	0.101
All within paragraphs	0.129	0.127	0.069	0.124
Structural Similarity (Post)				
Adjacent	0.128	0.15	0.117	0.185
All across paragraphs	0.151	0.119	0.113	0.142
All within paragraphs	0.151	0.161	0.115	0.201

## 2.6 Constituents

In terms of constituents, we examine how many modifiers each noun has, the frequency of higher

level constituent per word and the frequency of words before main verbs.

Table 16

Pre				
Constituents				
Modifiers per NP		0.782	0.52	0.756
Higher level constituents		0.741	0.775	0.743
Words before main verb		2.6	7.214	4.2
Type-token ratio		0.647	0.719	0.76
Post				
Constituents				
Modifiers per NP		0.66	0.485	0.405
Higher level constituents		0.783	0.802	0.831
Words before main verb		2.7	2.7	1.8
Type-token ratio		0.724	0.712	0.753

Table 17 Reference Data

	TASA	L science	H science	L narrative	H narrative
Modifiers per NP	0.954	0.54	0.739	0.409	0.455
Higher level constituents	0.711	0.772	0.752	0.827	0.815
Words before main verb	5.436	1.927	3.022	1.696	2.055
Type-token ratio	0.817	0.49	0.438	0.558	0.533

Table 18 Pre-advanced Group

Pre				
Constituents				
Modifiers per NP		0.8	0.563	0.676
Higher level constituents		0.729	0.809	0.759
Words before main verb		3.111	4.571	2.333
Type-token ratio		0.709	0.767	0.889
Post				
Constituents				
Modifiers per NP		0.75	0.718	0.75
Higher level constituents		0.753	0.767	0.808
Words before main verb		4.1	3.444	2.571
Type-token ratio		0.679	0.847	0.809

## 2.7 Word Frequency

Table 19 Advanced Group

Pre	3209.3	2031.8	2260.281
Raw freq content words	34	2.53	2.458
Log freq content words	2.59	48.73	55.1
Min. raw freq content words	1.465	1.416	1.421
Post			
Raw freq content words	1463.3	3001.264	2976.127
Log freq content words	2.368	2.489	2.628
Min. raw freq content words	28	364.25	75.2
Log min freq content words	1.347	1.816	1.643

Table 20 Reference Data

	TASA	L science	H science	L narrative	H narrative
Raw freq content words	2098.91	2725.9	2473.8	4451.3	3996.7
Log freq content words	2.151	2.375	2.371	2.677	2.603
Min. raw freq content words	49.05	57.885	42.558	168.7	84.9
Log min freq content words	0.971	1.481	1.379	1.852	1.537

Table 21

Pre	2435.987	5117.905	2381.859	2974
Raw freq content words	2.562	2.672	2.366	2.367
Log freq content words	35.556	88.6	14.833	25.444
Min. raw freq content words	1.426	1.596	1.112	1.318
Post				
Raw freq content words	3410.653	2774.986	2884.383	1784.306
Log freq content words	2.352	2.392	2.546	2.248
Min. raw freq content words	36.3	27.5	26.714	37.2
Log min freq content words	1.298	1.249	1.28	1.397

## 2.8 Latent Semantic Analysis

Table 22 Advanced Group (Latent Semantic Analysis)

Pre	0.209	0.174	0.125
Adjacent	0.244	0.142	0.134
All	0.369		0.267
Post			
Adjacent	0.181	0.088	0.086
All	0.192	0.076	0.115
Between paragraph	0.423	0.18	0.297

Table 23 Reference Data

	TASA	L cohesion	H cohesion	L science	H science	L narrative	H narrative
Adjacent	0.38	0.205	0.27	0.458	0.546	0.144	0.255
All	0.35	0.186	0.289	0.403	0.397	0.128	0.214
Between paragraph	0.268	0.333	0.363	0.496	0.391	0.369	

Table 24 Latent Semantic Analysis (Pre-advanced group)

Pre	0.159	0.126	0.094	0.192
Adjacent	0.154	0.354	0.051	0.147
All		0.086	0.141	0.424
Post				
Adjacent	0.288	0.201	0.086	0.163
All	0.262	0.132	0.103	0.166
Between paragraph		0.249	0.167	0.359

### 3 Conclusion

Linguistic indices derived from WordNet and MRC, and argument overlap appear to distinguish Low cohesion text and high cohesion text.

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### Appendix 1 Syllabus

Date	Unit	Lesson	Topics	Article
Feb 22		Introduction 1		
Mar 1		In class lesson 2		
Mar 2	Unit 1	Ondemand lecture 3	<ul style="list-style-type: none"> <li>Purpose of writing</li> <li>Plot of stories</li> </ul>	"Buying Silence: Self censorship of smoking and health in the national newsweeklies"
Mar 8		In class lesson 4		
Mar 15		In class lesson 5		
Mar 16	Unit 2	Ondemand lecture 6	<ul style="list-style-type: none"> <li>Fact and argument in writing</li> <li>Characters in stories</li> </ul>	"Who reads what, and why?"
Mar 22		In class lesson 7		
Mar 29		In class lesson 8		
Mar 30	Unit 3	Ondemand lecture 9	<ul style="list-style-type: none"> <li>Strength of argument</li> <li>Themes of stories</li> </ul>	"Cultural pluralism and the book world"
Apr 5		In class lesson 10		

Note: You will read one academic article every unit, but you will only read one short story, "Where Are You Going, Where Have You Been?" over all three units.

### Appendix 2 Pre-task and Post task

**Read the following article. State whether you agree, disagree (or somewhat agree) with the writer's opinions in the article, and explain why. Write your answer in the space provided.**

#### Students feel heat of joblessness

Many soon-to-graduate university students have not yet found jobs. According to a survey by the education and labor ministries, as of Oct. 1, 2010, only 57.6 percent of university students scheduled to graduate this spring have secured jobs, a record low.

The government should pay attention to the fact that the unemployment rate among youths aged 15 to 24 is high. In November, their unemployment rate was 8.7 percent — up 0.3 percentage point from a year before. There were 140,000 youths in the age group who could not find jobs at the time of graduation. They accounted for about 30 percent of the unemployed in the age group.

In an attempt to increase employment among young people, the government will provide subsidies to companies that employ university graduates whose graduation date was up to three years earlier.

These days, students must spend a lot of time on job-seeking activities. Therefore, they don't have enough time to consider what they actually want to do in the future, let alone study during their last year of university. Students usually begin looking for jobs in their third year.

If this condition becomes a fixture of Japanese student life, Japan's higher education will collapse. In the long run, Japanese enterprises won't be able to acquire recruits with enough knowledge and skills. The Japan Business Federation (Nippon Keidanren), the nation's most powerful business lobby, has decided to urge member firms to start holding explanatory sessions after Dec. 1 for third-year students, instead of in October. The decision may help change the situation for the better.

Students may not have sufficiently explored job opportunities at small-to-medium-size enterprises, many of which are looking for good recruits. Students should widen their scope. Those companies, for their part, should improve their public-relations efforts to attract students.