

# Effects on the Oral Reading Performance through the ‘Blended Learning’ in English class Utilizing the WBT Courseware

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**Abstract:** A ‘Blended Learning’ approach which combines face-to-face instruction with computer-mediated instruction is focused on as one of the effective methods of instruction utilizing e-Learning materials in Japan. Our recent research in English education showed that students’ desire for self-expression in English was raised and their listening ability for comprehending the situation was also improved through this approach. However, it was still not clear what effect the approach has on the students’ oral performance. With this in mind, we have studied the effects of the ‘Blended Learning’ approach on the students’ oral performance. The blended learning lessons consisted mainly of practicing the model dialogues in WBT courseware which incorporate a high quantity of video and sound clips for self-practice, performing them in pairs or groups, and peer assessment. The result of the research shows that the skill of the students’ oral reading was improved in most criteria of assessment.

**Keywords:** Blended Learning, Foreign Language Education, Oral Reading Performance, e-Learning, WBT

## Introduction

The development of practical communication skills has been classified as the goal of English education in the official curriculum guideline of Japan<sup>[1]</sup>. However, it is quite difficult for teachers to instruct their students individually in listening and speaking activities, because teachers do not have the time to devote their attention to each student in turn. In recent years in Japan, even in elementary and secondary education, e-Learning has been greatly focused on for expansion of learning opportunities, improvement in quality and individualization of instruction<sup>[2]</sup>.

According to a previous study<sup>[3]</sup> in a junior high school, the students’ listening comprehension was improved and their motivation toward expressing themselves in English was developed through blended learning with WBT courseware. But what kind of effects there were on the students’ oral performance remained unclear.

This paper investigates how the use of blended learning with WBT courseware in class enhances students’ oral reading skill phonetically.

## 1. Background and Definition

### 1.1 Utilization of WBT and Shadowing

The contents of the WBT courseware we developed, which targets second year students of high school, are structured in a logical sequence by small steps and the instruction is

differentiated to the students' response. This type of programmed instruction allows the students to answer questions at their own rate and get the appropriate feedback after checking their own answers<sup>[4]</sup>. The WBT material we developed is made up of 4 stages per topic; The 4 stages consist of 'Reading', 'Conversation Practice', 'Expressing Ideas', and 'Let's Talk'. The students can watch or listen to numerous video and sound clips as a 'Conversation Model' in each topic, practice pronouncing the conversation to them and have a virtual conversation. Scanlon insisted that it is important to have this kind of practical experience with multimedia materials<sup>[5]</sup>.

This kind of activity where the student repeats the phrases from a conversation model almost simultaneously is called 'Shadowing' and Mochizuki reports the effectiveness of it in developing the students' oral reading performance<sup>[6]</sup>. In this study, the students do an individual Shadowing activity by utilizing WBT.

### *1.2 The Definition of Blended Learning*

The term 'blended learning' is used with increasing frequency in both academic and corporate circles. Bonk and Graham defined Blended learning systems as combining face-to-face instruction with computer-mediated instruction<sup>[7]</sup>. There are a lot of studies which treat blended learning as the mixture of face-to-face instruction 'in a classroom' with computer-mediated instruction 'outside the classroom'. But in this study, both ways of instruction are blended 'in the same classroom'. Through this kind of blending in one classroom, we can give the students appropriate scaffolding instruction, a teaching strategy which originates from Les Vygotsky's sociocultural theory<sup>[8]</sup>. In terms of peer tutoring and peer assessment, the students can do collaborative learning through blended learning utilizing WBT.

## **2. Assessment Methods**

### *2.1 Assessment of Oral Reading Performance*

Luoma notes that there are two kinds of task type to assess students' speaking skill; Open-ended and Structured tasks. 'Reading aloud', that is oral reading performance, belongs to the structured speaking tasks. Though structured speaking tasks cannot assess the creative elements of speaking, they have the strength of comparability because the anticipated answers are exactly the same for all examinees. With the help of a scoring key, they can be scored fairly with very little training. Reading aloud usually focuses on pronunciation, while comprehensibility may also be an important criterion<sup>[9]</sup>.

In this study, we set 4 levels of criteria; word, sentence, passage and total level, and categories in each level, as shown in Table 1. Task materials for 'Reading aloud' were prepared to fit the learning stages of English education in Japan.

### *2.2 Research Method*

In order to assess how the blended learning with WBT courseware worked in terms of oral reading performance, we had the students record their voice reading aloud using the software 'Audacity'<sup>[10]</sup> before and after the lessons. An ALT (Assistant Language Teacher) and a JTE (Japanese Teacher of English) scored the students' performance listening to the recorded voice from 5 to 1; 5:Excellent, 4:Good, 3:Average, 2:Poor, 1:Very Poor.

In terms of English proficiency, a test from the Association for English Language Proficiency Assessment was conducted before and after the lessons to verify the learning effect through comparing the result of the pre-test with that of the post-test statistically, as

we did in the previous study <sup>[3]</sup>. The content of the test consisted of Listening, Vocabulary and Grammar, and Reading parts.

In order to verify the effect on the students' mental aspect, Pre and Post surveys were carried out. Each survey consisted of 24 questions, out of which 20 questions were multiple choice, each with five possible answers given. The multiple choice questions were scored from 5 to 1 as in the previous study <sup>[3]</sup>.

### 3. Experiments and Results

#### 3.1 The Blended Learning Lessons

The blended learning lessons with WBT courseware were carried out at a high school in Okayama prefecture in Japan. Six English lessons were assigned to the second year students for that purpose during the period Oct. 19th to Nov. 28th, 2007. The blended learning lessons were conducted in one class, consisting of 22 students.

The main procedure of the lessons was as below.

- Listening Comprehension Check; Listening and answering the questions (WBT)
- Teacher's Instruction; the teacher gives instructions about common errors (Class)
- Conversation Practice with WBT courseware; Listening to the conversation model in the WBT courseware and acting out the dialogue with the model (WBT)
- Conversation Practice; Acting out the dialogue with a partner and peer assessment (Pair work)

#### 3.2 Results of the Study

##### 3.2.1 The Results of Factor Analysis and Development of Oral Reading Skill

After the degree of development in each category of oral reading criteria in Table 1 was calculated through subtracting the pre-score, the average score of the two raters in the pre

Table1. The Factor Loading of Oral Reading Criteria after Varimax Rotation

No	Criteria	Level	Factor						
			1	2	3	4	5	6	7
1	Attitude	Sentence	<b>0.809</b>	-0.174	0.322	0.151	-0.049	0.227	-0.008
2		Passage	<b>0.820</b>	0.129	0.351	0.329	0.171	-0.237	-0.004
3	Volume	Word	<b>0.620</b>	0.136	0.346	-0.039	-0.475	0.092	-0.403
4		Sentence	<b>0.797</b>	0.313	-0.083	0.234	-0.119	0.410	-0.088
5	Pronunciation	Passage	<b>0.887</b>	0.308	0.150	-0.113	-0.038	0.068	-0.112
6		Sentence	<b>0.666</b>	0.073	0.281	-0.205	0.146	0.276	0.428
7	Stress	Passage	<b>0.577</b>	-0.294	0.270	-0.155	-0.195	-0.402	0.175
8		Word	0.388	<b>0.796</b>	-0.021	0.159	-0.068	0.023	0.384
9	Intonation	Word	-0.133	<b>0.660</b>	0.147	0.504	-0.214	0.122	0.208
10		Attitude	0.050	<b>0.747</b>	0.237	-0.100	-0.071	0.169	0.021
11	Stress	Word	0.270	0.043	<b>0.884</b>	0.002	-0.213	0.109	0.012
12		Sentence Stress	0.150	0.043	<b>0.925</b>	0.043	-0.024	0.077	-0.003
13	Intonation	Word	0.371	0.080	<b>0.768</b>	-0.199	0.374	-0.126	-0.168
14		Passage	-0.174	-0.071	0.171	<b>0.492</b>	0.021	0.459	-0.402
15	Sentence Stress	Passage	0.522	0.356	-0.037	<b>0.637</b>	0.062	0.078	-0.169
16		Intonation	0.056	0.060	-0.135	<b>0.914</b>	0.074	0.084	-0.137
17	Total Impression	Total	0.099	0.073	0.600	<b>0.645</b>	0.132	0.250	0.253
18	Sense Reading	Sentence	0.135	-0.135	-0.058	0.227	<b>0.824</b>	0.189	-0.089
19		Passage	-0.148	-0.302	-0.005	-0.007	<b>0.886</b>	-0.060	-0.064
20	Fluency	Passage	0.005	-0.734	0.186	-0.100	<b>0.420</b>	0.077	-0.036
21		Message	-0.223	-0.558	0.153	-0.271	<b>0.517</b>	0.008	-0.053
22	Liaison	Sentence	0.200	-0.053	0.069	0.110	0.236	<b>0.763</b>	-0.282
23		Passage	-0.103	-0.550	-0.090	0.003	0.063	<b>0.358</b>	0.065
24	Fluency	Sentence	0.385	0.064	0.243	0.197	-0.234	<b>0.678</b>	0.222
25		Pronunciation	Word	-0.047	0.164	-0.046	-0.107	-0.170	-0.158

n=14

oral reading performance test from the post-score, the one in the post test, factor analysis was conducted for all the 25 categories using unweighted least squares method and varimax rotation.

Seven factors were extracted as shown in Table 1, where n is the number of valid responses. The contribution ratio was 84.5% in total. In terms of score consistency within two raters, we used intraclass correlation coefficient, ICC, to show the inter-rater reliability and got ICC(3,2) which ranges from 0.932 to 0.996.

Factor 1 was interpreted as “Positive Attitude and Accuracy of Pronunciation” because it related to the categories of ‘Attitude’, ‘Volume’ and ‘Pronunciation’. In the same way, Factor 2 was interpreted as “Natural Pronunciation of Words”. Factor 3 as “Natural Pronunciation of Sentences”. Factor 4 as “Natural Flow of Utterance”. Factor 5 as “Sense Group”. Factor 6 as “Fluency of Sound Connection”. Factor 7 as “Accuracy of Word Pronunciation”.

In order to investigate the development of oral reading skill, we compared the averaged pre-score and the averaged post-score of the categories which associated with each factor. As shown in Table 2, the result of the t-tests shows that most oral performance factors were improved at significance level of 5% to 0.1%: factors 4, 5 and 6 were improved at a significance level of 0.1%, factors 2 and 3 at a significance level of 1%, and factor 7 was at a significance level of 5%, where SD stands for standard deviation.

Table2. The Improvement of Factors in Oral Reading Performance

Factor	Pre-Test		Post-Test		t-Test	
	mean	SD	mean	SD	Value of t	Significance (Two-tailed)
1	3.6	0.4	3.8	0.3	1.9	+
2	3.7	0.3	4.0	0.4	3.8	**
3	3.2	0.5	3.6	0.5	3.9	**
4	3.1	0.5	3.7	0.5	6.1	***
5	3.5	0.5	3.9	0.4	4.6	***
6	3.5	0.4	3.8	0.4	4.1	***
7	3.5	0.4	3.9	0.5	2.6	*

n=14, \*\*\*:p<.001, \*\*:p<.01, \*:p<.05, +:p<.1

### 3.2.2 Development of English Proficiency and Motivation

We compared the results of pre and post tests and surveys using the t-test. According to the results of the comparison, the total score of English proficiency was raised at a significance level of 5%;  $n=22$ ,  $m_1=46.5$ ,  $\sigma_1=8.1$ ,  $m_2=50.5$ ,  $\sigma_2=7.7$ ,  $t=2.8$ ,  $p<.05$ . According to the results of the survey, the survey item which correlated to this development at a significance level of 5% was the development of students’ confidence in listening through Blended learning classes;  $n=13$ ,  $r=.59$ ,  $p<.05$ .

The students’ motivation toward expressing themselves in English was developed at a significance level of 1%;  $n=19$ ,  $m_1=2.5$ ,  $\sigma_1=1.1$ ,  $m_2=3.3$ ,  $\sigma_2=0.8$ ,  $t=3.0$ ,  $p<.01$ .

The results of the survey also show that the students’ comprehension of English lessons improved,  $n=19$ ,  $m_1=2.5$ ,  $\sigma_1=0.8$ ,  $m_2=3.4$ ,  $\sigma_2=0.8$ ,  $t=3.3$ ,  $p<.01$ , and that the students came to feel that they could study English at their own rate,  $n=19$ ,  $m_1=2.7$ ,  $\sigma_1=1.0$ ,  $m_2=3.4$ ,  $\sigma_2=0.7$ ,  $t=3.2$ ,  $p<.01$ , at a significance level of 1%.

### 3.2.3 Consideration of the Results

The development of oral reading skills might have been due to each student individually listening and practicing the dialogue repeatedly through use of the video clips in the WBT courseware. Development of students’ motivation toward expressing themselves in English

might have been caused by acting out dialogue in pair work. Through peer tutoring and assessment tasks, face-to-face communication 'in a classroom' would help enhance students' motivation toward communication.

#### 4. Conclusion

Through blended learning with WBT courseware in a high school, the students' oral reading skill was improved and their motivation toward expressing themselves in English has been developed. In this study, we verified the effects of the blended learning approach in a classroom on the students' oral reading performance. However, we couldn't fully verify the effectiveness on free conversation. We would like to continue studies in this area and make the effectiveness of blended learning clear.

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