The present study has two purposes. One is to investigate the relationship between Japanese high school students' chunking ability and their reading comprehension in English. The other is to suggest an effective method of teaching reading based on the survey and two experiments which I conducted for this research.

Chapter 1 reviews the previous studies on chunking. Chunking is one of the techniques for reading English sentences in the order of words presented. This method is considered to be effective for Japanese learners of English whose mother tongue has different sentence structures. A chunk is generally known as a unit of meaning. There are some chunking methods in Japan, but each has a different concept of a unit of meaning, and consequently proposes different ways of chunking. Tanaka Shigenori (1993) made several important statements on the definition of a chunk. He pointed out that when we think about chunks, we need two norms. One norm is linguistic units, and the other is idiomaticity. Not every chunk can be a processing unit in reading. There is a general agreement among researchers that a processing unit in reading is based on its syntactic structure and thus it is a phrase or a unit bigger than a chunk (e.g. Kadota, 1999). To sum up, we can conclude that the length of a processing unit in reading is flexible. Referring to this fact, Kadota (2001) suggests that readers usually divide sentences into chunks mainly by the unit of meaning prior to the syntactic processing. In previous studies, measurement of chunking ability is made from the standpoint of accuracy and length of a chunk. As for accuracy, it has been studied through the method of asking students to separate sentences on a sheet with slash (e.g. Rasinski, 1989).

Chapter 2 presents the results of the survey on students' reading metacognition. The results showed four significant differences between the students with high reading ability and the students with low reading ability. Two of the significant differences suggested that the lower level students did not have so much knowledge about prepositions and conjunctions and also did not pay attention to them so much while reading sentences. In short, the lower level students, in comparison to the higher level students, had less knowledge and attention to the function words. Since function words have clues for syntactic processing (Tenma, 1989), awareness of these words contributes to the improvement of their reading abilities. The other two significant differences suggested that the lower level students did not guess the meaning of the unknown words by checking the meanings of the phrases and clauses which were around the unknown words and also did not try to understand the meaning of the unknown words by guessing the forms of the words. The lower level students are characterized by poor awareness of function words, limited vocabulary, and a lack of knowledge that words with the same stem have close meanings.

Chapter 3 examines the relationship between reading ability and chunking. In the experiment, I asked
the students to put slashes in sentences to show how they read sentences in their minds and make units of meaning. I analyzed the chunking they made and found the features of the different levels of students in reading ability. The average number of the slashes was inversely proportional to their reading ability, though there were some individual variations in each group. That is, the group of students who had higher reading abilities had more words in a chunk. Excluding the slashes that were made by natural pauses, I compared the places that the students put slashes in. The result showed inclusive relations among the three levels of their reading ability: A ⊆ B ⊆ C except one part. I analyzed the locations in which more than 40% of level B students put slashes in the sentences. From the result of the analysis, three characteristics of chunking on level B students were identified. (1) Their knowledge for the functions of verbs and verb phrases is not as good as the awareness of level A students. (2) Their knowledge to capture additional information after the noun is not as good as the knowledge of the level A students. (3) They use more Working Memory to execute syntactic processing than level A students and thus cannot use enough Working Memory for "retention."

Chapter 4 examines the relationship between reading ability and processing speed of a chunk. In the experiment I conducted for this purpose, I employed a computer software program that I created to measure the speed of processing a unit of chunk in reading. The students read an article slashed in advance by the researcher. They read the article on the computer screen. The results showed the following: (1) There was a moderate negative correlation (−0.67) between the reading comprehension ability and the processing speed. Although it cannot be stated categorically that all students with high proficiency in reading ability have high speed of processing, it can be generally claimed that higher level of proficiency in reading is associated with their faster speed of processing. (2) There was a strong correlation between the length of a chunk (the number of syllables) and its processing speed, i.e., 0.83 is for level A students and 0.85 is for level B students. This means that longer the chunks require students longer time to process the units. (3) There was a poor correlation (0.23) between the length of chunks and their relative speed of processing for B level students compared to level A students. Since the figure 0.23 shows a poor correlation, it may be necessary to look for the reason of the result.

Chapter 5 proposes a practical teaching method to improve reading ability based on the results of the survey and two experiments I conducted. This method is geared towards the attainment of three goals: (1) To let the students understand conjunctions consciously (2) To let the students understand the usage of verbs and verb phrases well (3) To let the students understand that additional information comes after the noun repeatedly. In order to conduct the method effectively, a 3-step process is proposed. Using the Chunking Map Handout, students can learn the grammatical aspects of each sentence in the article. The training using Backward Build up (Rivers, 1978) can encourage students to understand appropriate chunking. The Chunking Classification Software Program I designed will allow students to make a chunking map similar to the Chunking Handout. Through these practical activities, students are expected to understand chunking and use it to improve their reading skills effectively.