論文の内容の要旨

論文題目　**Investigating the relative effects of cognitive and non-cognitive approaches on the development of Japanese learners' knowledge of different degrees of certainty**（日本人英語学習者の確信度表現習得のための認知言語学的アプローチの研究）

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The present study was motivated by theoretical considerations in cognitive linguistics connected with the conceptual projection (Grady, 1997) and the metaphorical idea of CERTAINTY DEGREE IS DISTANCE ALONG A PATH, applying them to develop Japanese learners' knowledge of the different degrees of certainty attached to boosters and hedges including CERTAIN, PROBABLE, and POSSIBLE ITEMS. Previous studies discovered that Japanese students learning English as a foreign language (EFL) used more boosters, modifiers with reinforcement functions, than hedges, modifiers with attenuation functions, among the items related to the degrees of certainty in their academic writings. CERTAIN ITEMS are classified as boosters, indicating a higher degree of certainty, whereas PROBABLE and POSSIBLE ITEMS belong to hedges to different degrees, indicating lower degrees of certainty. Japanese EFL learners had greater difficulty in identifying and categorizing the roles of the PROBABLE and POSSIBLE ITEMS and misapprehended their meanings.

Accordingly, from the viewpoint of conceptual metaphor theory (Lakoff & Johnson, 1999) and in view of Japanese EFL learners' tendencies, it may be assumed that Japanese EFL learners' concepts of the degree of certainty associated with CERTAIN, PROBABLE, and POSSIBLE ITEMS might not be deeply entrenched in their knowledge of spatial relations. Thus, the present study considers it necessary to make the CERTAIN,

PROBABLE, and POSSIBLE ITEMS easier to learn by utilizing the spatial relations between them.

Ohori (2002) explained that our experience of time is closely related to spatial relations, such as *far* and *near*. That is, events happening at the present or proximal to us tend to attract our attention more than events occurring in the past or at a distance. This means that the use of the present tense shows a higher degree of certainty and the past tense a lower degree, which is associated with the proximal-distal metaphor. Kato (2014) suggested that understanding semantic differences among synonyms in terms of the spatial concept of distance contributes to making similarity and contrast judgments.

The present study attempts to use the proximal-distal metaphor as a mnemonic device involving three different items, CERTAIN, PROBABLE, and POSSIBLE ITEMS, to indicate three degrees of certainty. According to the proximal-distal metaphor, CERTAIN ITEMS are represented as being closer to the writer's level of confidence (e.g., We will *certainly* consider your suggestion), thus indicating a higher degree of certainty, whereas PROBABLE ITEMS (e.g., We would *probably* consider your suggestion) and POSSIBLE ITEMS (e.g., We might *possibly* consider your suggestion) are located at different distances to indicate that they are further from the writer's level of confidence, hence indicating lower degrees of sureness than CERTAIN ITEMS.

Although the proximal-distal metaphor is not embedded in CERTAIN, PROBABLE, and POSSIBLE ITEMS, the present study investigates whether comprehending the abstract concept of degrees of certainty in terms of the spatial concept of distance can be used as a means of memory enhancement for developing Japanese learners' knowledge of different degrees of sureness attached to boosters and hedges including CERTAIN, PROBABLE, and POSSIBLE ITEMS.

Recently metaphor awareness-raising approaches have been shown to generate positive effects on language learning. However, there have been mixed findings with less-rigorous experimental designs and it is imperative that the effects of the metaphor awareness-raising approaches should be accurately examined with more rigorous experimental designs. Moreover, all of the previous studies utilized metaphors embedded in the target expressions or included in the concrete meanings of the target expressions in order to see the effectiveness of metaphor awareness-raising as a means of memory enhancement, whereas the present study considers it necessary to use metaphors that are not embedded in target expressions.

Furthermore, all previous studies adopted teacher-directed approaches. Nowadays we see computers in classrooms, which can serve as electronic devices to allow students to access the Internet to research, create, and complete their work, which enhances

self-directed learning and allows the creation of a wider variety of individualized lessons. In spite of the fact that self-directed learning on computers has received little attention and remains a relatively understudied issue in cognitive science, as recent studies in self-directed learning on computers has been shown to be effective, particularly in conceptual understanding in higher education, it is worthwhile to examine the effects of self-directed metaphor awareness-raising approaches on computers and compare the self-directed and the teacher-directed methods of metaphor awareness-raising on computers.

To date, no studies have examined the effects of applying the proximal-distal metaphor as a mnemonic device to teach the markers of boosters and hedges including CERTAIN, PROBABLE, and POSSIBLE ITEMS. For this reason, there is no clear indication in the literature as to the effectiveness of utilizing spatial relations to teach the three markers in relation to the writer's confidence. Moreover, no studies have compared the effectiveness of self-directed and teacher-directed approaches on computers for learning the three markers about the degree of sureness.

The present study evaluated the relative effects of cognitive and non-cognitive approaches and of self- and teacher-directed approaches on computers. The cognitive approach involved concept projection, a process through which the participants understand an abstract concept, namely the degree of certainty, in terms of the spatial concept of distance, whereas the non-cognitive approach involved rote learning of a list of target expressions related to the degree of certainty. Furthermore, in the self-directed approach, the participants were able to use online computer program in their own way, choosing the parts of the target information they want to learn more and concentrating on what they want to study. On the other hand, in the teacher-directed approach the instructor played the role of a lecturer. The instructor had primary control of the online computer program and adhered to the information available in the online computer program. Regarding testing, the present study adopted a pre-test and three post-tests to evaluate the effectiveness of the proximal-distal metaphor awareness-raising approach. Each test consisted of a writing test, a comparison test, and a categorization test. Moreover, a written retrospective evaluation questionnaire during treatment sessions and interview after post-test 2 and post-test 3 were conducted. Usami (2014) explained that the written retrospective evaluation and interview analysis are very helpful in carrying out an in-depth investigation of the participants' cognitive processing.

The results of the present study demonstrated that the cognitive approach groups outperformed the non-cognitive approach and control groups in writing, comparison, and categorization tests, and further demonstrated that the cognitive approach is

effective as a mnemonic device generating long-term memory encoding. There are two possible factors behind the effectiveness of the cognitive approach. The first factor is associated with input enhancement and the second factor is concept projection to understand an abstract concept, namely the degree of certainty in terms of distance.

The results of the present study also showed that the self-directed approaches enabled the participants to perform as well as those that underwent the teacher-directed approaches, and the difference between self-directed and teacher-directed learning did not seem to have had a major impact on the overall performance of the self- and teacher-directed groups. There are two closely related reasons accounting for the similar performance of the participants in the self- and teacher-directed approaches. The first involves the information the participants received, and the second concerns the cognitive and non-cognitive strategies the participants in the self- and teacher-directed groups used to derive their answers.

Some participants preferred the self-directed learning, while others liked the teacher-directed learning better, and their preferences for self- or teacher-directed learning seem to be based on their personal and cognitive style. Therefore, it is difficult to satisfy all learners' preferences with one learning approach. It is possible, however, that self- and teacher-directed learning can be used together and complement each other. The end product will be a flexible, self-directed learning environment where the teachers act as facilitators and monitor the students' progress and the students are at the center of and entirely responsible for their own progress. Oku (2015) argued that an ideal learning scenario is an active learning environment in which the students are actively involved in the learning process under teacher's guidance, and that active learning as a strategy will promote achievement levels. Gally (2011) also explained that the students' active involvement in class activities such as writing, giving presentations, and discussion with their peers in combination with teachers' feedback motivated students and made the classroom environment more lively.