Studies of Kanji Introduction Methods for Non-kanji Japanese Language Learners - Through Eye Movement -

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For a non-kanji Japanese language learner who uses the alphabet to write his mother tongue, especially a beginner, it is said that to look at kanji characters and then understand its structure is a difficult problem, though he is expected to recognize quite complicated kanjis from the beginning. These days some teachers try to devise a kanji introduction method which gives information about the kanji structure or which trains the learner to recognize kanji structure before they learn the kanji themselves.

In this research, the kanji introduction method which gave information about kanji structure was named "structure instruction" and the kanji introduction method by stroke order, which is the most widely used instruction method, was named "stroke order instruction". The effect on kanji character recognition by the two different kanji introduction methods were compared through the analysis of the changes in eye movement before and after training of non-kanji Japanese language learners who had never been exposed to kanji before. The task involved learning quite difficult kanjis by the two different methods. To determine

the nature of the changes in eye movement, 3 groups of people (non-kanji foreigners, intermediate learners, and Japanese natives) were presented with identical kanji as stimulus.

In the first experiment, in which the eye movements of non-kanji foreigners, intermediate learners and Japanese natives were compared, it was shown that eye movements of non-kanji foreigners were different from those of intermediate learners and Japanese natives; the fixations of non-kanji foreigners were of shorter duration than those of other subjects and their eye movements continued without stopping, or were scattered about the outline of the kanji. Fixations of the other subjects occurred mainly in one part of the kanji which was quite complicated and was situated near the center of the letter. This result seems to correspond to the belief that it is difficult for a non-kanji learner to percieve kanji structure. In this experiment, the differences between intermediate learners and Japanese natives were also observed. Fixations of intermediate learners were much more concentrated in the afore-mentioned central, complex part of the kanji. This first expriment would seem to indicate that the non-kanji foreigner's fixations and fixation distribution will become similar in nature to those of intermediate learners.

In the second experiment, after learning quite difficult kanji by the two different kanji introduction methods, non-kanji Japanese learner's eye movement changes were compared. Twelve non-kanji subjects were divided in two groups and learned a total 16 kanji each. Group-A learned 8 kanji by structure instruction, then learned 8 kanji by stroke order instruction. Group-B learned the former 8 kanji by stroke order

instruction, then learned the latter 8 kanji by structure instruction. The two instruction periods occurred in opposite sequence to determine if instruction order had an effect. After each learning period, the eye movements of subjects when presented with the same 6 stimulus kanji were measured. Three kanji were from the group of 8 which were learned in the first learning session, the other were from 8 which were learnt in the second learning session.

The following results were observed: (1) after the learning period, the fixations of non-kanji Japanese learners increased in duration and gathered mainly in one part of the kanji like those of intermediate learners. This is in agreement with the results of the first experiment; (2) After each learning session, the fixations of Group-A (who had structure instruction followed by stroke order instruction) were concentrated in the central, complex part of the kanji. The fixations in the second measurement was very similar to those of the intermediate learners, though the fixations of intermediate learners were still more concentrated; (3) Only the fixation distribution pattern in the first measurement of Group-B (who had stroke order instruction followed successive structure instruction) showed an unusual pattern when compared to that of the others. The fixations after the first learning session of Group-B (by stroke order instruction) gathered to the right of the place where the fixations of the others were concentrated. But the fixation distribution after the second learning session of Group-B (structure instruction) showed the same patterns as the others; (4) For both groups, the first measurement the fixation distribution for kanji that were supposed to be learned in the second session showed the same

patterns as that for kanji already learned in the first session.

Result(1) suggests that learning kanji has an influence on the way we look at kanji. Result(4) suggests that the instruction method has an influence on the way we percieve unknown kanji. Results(2) and (3) showed that there are differences in eye movements depending upon the type of instruction methods. It is seen in result(2) that information about kanji structure given by structure instruction is retained over a succeeding session of stroke order instruction. Also, the fixation distribution of subjects that had structure instruction first became close to tthat of intermediate learners faster than those that had stroke order instruction first. It was found in result(3) that learners looked at kanji in an unusual way when they first learned complex kanji by stroke order instruction, and that they looked at kanji in the normal way after they had structure instruction. This difference seemes to be the result of knowledge about kanji structure information .

The above results above suggest that structure instruction as a kanji introduction method is more effective than stroke order instruction in increasing the ability of learners to recognize kanji characters.