

Musical Memory on L2 Pronunciation Skills

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Among various individual factors that are claimed to influence learning of second/foreign language, the role of phonological memory, which refers to the ability to recognize and remember phonological elements and their order of occurrence, has gained attention as a contributing factor to second / foreign language learning. Numerous SLA studies have been indicated the positive relationship between memory and L2 skills such as vocabulary, reading, listening and speaking (Kormos and Safar, 2008; Service & Kohonen, 1995). However, there are few studies that focus on L2 pronunciation as subcomponents of speaking skills. Furthermore, while there are a number of memory studies dealing with only verbal phonological memory, few studies investigate another non-verbal aspect of phonological memory, which is musical memory. Language and music share some components, and should be related in some ways. Patel's, et al. (1998) clinical study showed that language and music share cognitive process. In fact, there are several studies that indicate positive relationships between musical ability and L2 acquisition (Milovanov et al., 2008). These studies looked at the effects of overall musical ability as the independent variable, and did not specifically investigate the effects of musical memory. Thus, this study was conducted in order to investigate how much musical memory affects L2 pronunciation skills.

In order to investigate the extent of influence of musical memory as a subcomponent of phonological memory on L2 pronunciation skills, 30 Japanese university students majoring in English cooperated in this study. They were asked to take the tests to examine their musical memory span and L2 pronunciation skills. Two different types of tests (Tonal memory span test and Rhythm memory span test) were administered in order to examine the participants' musical memory. In Tonal memory span test, the participants listened to a pair of sequences of melody, and asked to answer which part was different. Rhythm memory span test asked participants to listen and reproduce sequences of rhythm patterns. The participants' L2 (English) pronunciation ability was examined by L2 word reproduction test. The test focused on examining the participants' oral reproduction skills in their L2 (English). In the test, the participants were asked to reproduce English word after the model sound.

A multiple regression was preformed between L2 pronunciation skills as the dependent variable and musical memory (tonal memory and rhythm memory) as independent variables. Analysis was performed using SPSS REGRESSION. As Table 1 shows, R for regression was significantly different from zero, $F(2, 24) = 10.1, p < .01$, with R^2 at .46. The R^2 value of .46 indicates that 46% of the variability in L2 pronunciation skills is predicated by musical memory. Rhythm memory contributed significantly to regression. On the other hand, although the bivariate correlation between L2 pronunciation skills and Tonal memory span was statistically different from zero, tonal memory did not contributed significantly to regression.

In conclusion, the data indicated that musical memory measured by the tests had significant positive effects on L2 pronunciation skills, and Rhythm memory span had stronger effects on L2 pronunciation than Tonal memory span. Although this study has several limitations including the small number of participants, the results would contribute to give an insight into more understanding of the effects of phonological memory on L2 oral skills.

Table 1

Regression Analysis Summary for Musical Memory Variables on L2 Pronunciation Skills

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
				R change Square	F Change	Sig. F Change
.676	.46	0.41	9.22	.46	10.09	.00

References

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