

Gestures improve language learning

January 5 2012, by Deborah Braconnier

(Medical Xpress) -- Learning a new language usually requires written and spoken instructions but a new study shows that the use of word-specific gestures may aid in the learning process and help students better retain new words.

Led by Manuela Macedonia and Thomas Knosche from the Max Planck Institute for Human Cognitive and [Brain Sciences](#) in Leipzig, Germany, the study looked at 20 volunteers. These volunteers were enrolled in a six-day [language](#) class to study an artificial language known as "Vimmi."

The use of an artificial language gave no participant an advantage to already knowing a language and made the study results easier to interpret.

The group of volunteers was broken down into two groups. The first group received traditional written and spoken instruction and participated in language exercises. The other group was taught specific body movements that went along with each individual word of the Vimmi language.

Results of the study showed that the participants in the group that were taught gestures were able to remember a significantly larger amount of words than those taught using traditional methods. In addition, these participants were more able to use the words freely in creating sentences.

While many of the words used gestures similar to their meaning (such as a cutting gesture for the word "cut"), the researchers found that the use

of any gesture made a difference as long as it was unique and connected to a specific word. For example, the abstract word "rather" does not have an obvious gesture that would go with it. However, a gesture associated with this word also worked.

The researchers used fMRI scans to then argue that the use of [gestures](#) and an enactment of the [words](#) helped create a more complex representation of the word, thus making it easily retrievable from memory.

Macedonia suggests that these results could greatly improve the speed in which students are able to learn a foreign language in school.

More information: Body in Mind: How Gestures Empower Foreign Language Learning, *Mind, Brain, and Education*, Volume 5, Issue 4, pages 196 - 211, December 2011.
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Abstract

It has previously been demonstrated that enactment (i.e., performing representative gestures during encoding) enhances memory for concrete words, in particular action words. Here, we investigate the impact of enactment on abstract word learning in a foreign language. We further ask if learning novel words with gestures facilitates sentence production. In a within-subjects paradigm, participants first learned 32 abstract sentences from an artificial corpus conforming with Italian phonotactics. Sixteen sentences were encoded audiovisually. Another set of 16 sentences was also encoded audiovisually, but, in addition, each single word was accompanied by a symbolic gesture. Participants were trained for 6 days. Memory performance was assessed daily using different tests. The overall results support the prediction that learners have better memory for words encoded with gestures. In a transfer test, participants produced new sentences with the words they had acquired. Items

encoded through gestures were used more frequently, demonstrating their enhanced accessibility in memory. The results are interpreted in terms of embodied cognition. Implications for teaching and learning are suggested.

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