

## New app first to use gesture for language learning

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While you might think a person shaking her phone or tablet from side to side is having issues with the device, she might actually be playing a game that has her mimicking a steering wheel motion as part of a language lesson.

The game <u>Nano Nano</u> for mobile devices, created by two University of Colorado Boulder graduate students and released last week, is the first app to incorporate gesturing with <u>language</u> learning—for good reason.



"There's a huge amount of overlap between linguistic cognition and motor cognition," said Kevin Gould, a co-creator of Nano Nano and doctoral student in linguistics at CU-Boulder. "In fact one of the language centers in the human brain evolved from an area that used to be dedicated to motor planning and action.

"A lot of research demonstrates that because language and gesture are so closely intertwined on a neurological level, gesture can help people acquire language more quickly and easily," he said.

With this in mind, and capitalizing on the ability for modern digital devices to detect motion because of built-in gyroscopes and accelerometers, Gould and co-creator Steve Duman—also a CU-Boulder doctoral student in linguistics —invented Nano Nano.

"I think people will be a little blown away by how different this game is," said Duman. "It's unlike anything out there and it's definitely not what people expect."

As a game-style language app that's currently available in Spanish, Nano Nano is unique because it's devoid of the ubiquitous language-learning flash cards and drills.

"We didn't want to do the same old thing," said Gould. "We wanted to develop a new, fun way to learn language because fun motivates people. Tedious exercises and anxiety-filled quizzes and tests do not."

The hero of the story-based Nano Nano is Beta. With the game-player as her partner, she cruises in her car and rescues words that are disappearing—being taken away by "Nanobot" creatures—from people and signs. It's her job to put them back in their place.

For instance, when she comes across a blank stop sign, she goes to her



bank of terms and selects alto, the Spanish word for stop, sliding it to the sign and restoring the important information.

If language help is needed, Beta has translation goggles that her playerpartner can turn on momentarily to translate Spanish words into English.

Throughout the game, which includes amusing graphics and music, players are prompted to gesture by pulling their devices toward them to embody the motion of grabbing, drawing their devices toward their mouths to imitate the motion of eating and air-swiping their devices to simulate making a purchase with a credit card, for example. There's even a prompt to ¡salta! or jump.

While the app works only on Apple devices, Gould and Duman—who received a \$150,000 Small Business and Innovation Research grant from the National Science Foundation for the project—hope to design another version for Android devices.

They also plan to eventually offer Nano Nano in other languages. It could easily be converted into Mandarin, French, German, Portuguese and Japanese, among other languages, said Gould.

A potential addition to the game would be a competitive element that allows people, or even students in a classroom, to play against each other—as long as it follows the chief rule of being fun, said Gould, who grew up in the late 1980s playing video games on devices like Super Nintendo and Sega.

One of his favorite games back then was Where in the World is Carmen Sandiego, which taught geography through a detective character.

"So in a lot of ways, Carmen Sandiego is a great example of inspiration,"



said Gould. "It was a good game first, and you just happened to learn geography along the way.

"What we're trying to do is provide a good game first, and the player happens to learn language along the way."

**More information:** To download the app visit <a href="https://itunes.apple.com/us/app/nano-n">itunes.apple.com/us/app/nano-n</a> ... ish/id917320724?mt=8 . For more information about Nano Nano visit <a href="https://www.inherentgames.com/">www.inherentgames.com/</a> .

## Provided by University of Colorado at Boulder

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