

# Human-like robot smiles, scolds in Japan classroom

March 11 2009, By YURI KAGEYAMA , AP Business Writer

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(AP) -- Japan's robot teacher calls roll, smiles and scolds, drawing laughter from students with her eerily lifelike face. But the developer says it's not about to replace human instructors.

Unlike more mechanical-looking robots like Honda Motor Co.'s Asimo, the [robot](#) teacher, called Saya, can express six basic emotions - surprise, fear, disgust, anger, happiness, sadness - because its rubber skin is being pulled from the back with motors and wiring around the eyes and the mouth.

In a demonstration, the robot's mouth popped open, its eyes widened and eyebrows arched to appear surprised. Saya pulled back on its lips to make a smile, and said simple preprogrammed phrases such as "Thank you," while its lips moved, to express pleasure.

"Robots that look human tend to be a big hit with young children and the elderly," Hiroshi Kobayashi, [Tokyo University](#) of Science professor and Saya's developer, told The Associated Press Wednesday. "Children even start crying when they are scolded."

First developed as a receptionist [robot](#) in 2004, Saya was tested in a real Tokyo classroom earlier this year with a handful of fifth and sixth graders, although it still can't do much more than call out names and shout orders like "Be quiet."

The children had great fun, Kobayashi recalled, tickled when it called

out their names. Still, it's just remote-controlled by a human watching the interaction through cameras, he said.

Japan and other nations are hopeful robotics will provide a solution for their growing [labor shortage](#) problem as populations age. But scientists express concern about using a machine to take care of children and the elderly.

Ronald C. Arkin, professor at the Georgia Institute of Technology, said more research in human-robot interaction is needed before overly relying on robots.

"Simply turning our grandparents over to teams of robots abrogates our society's responsibility to each other, and encourages a loss of touch with reality for this already mentally and physically challenged population," he said.

Noel Sharkey, robotics expert and professor at the University of Sheffield, believes robots can serve as an educational aid in inspiring interest in science, but they can't replace humans.

"It would be delusional to think that such robots could replace a human teacher," he said. "Leading scientists, engineers and mathematicians, almost without exception, talk about that one teacher who inspired them. A robot cannot be that kind of inspirational role model."

Kobayashi says Saya is just meant to help people and warns against getting hopes up too high for its possibilities.

"The robot has no intelligence. It has no ability to learn. It has no identity," he said. "It is just a tool."

But would he create a robot in human form, say, a fantasy friend with

movie-star looks?

"Sure," he says, "If you're willing to pay."

That made-to-order robot will cost about 5 million yen (\$51,000), he said.

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