

# Players get more pleasure from motion-based video games, researchers find

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The newest motion-based video games — which are more interactive than standard video game systems with gamepads — are more realistic, give a greater sense of "being there" and are more enjoyable, according to findings by communications studies researchers at Baylor University.

An article about their findings, based on two experiments, will appear in the upcoming issue of *Presence: Teleoperators and Virtual Environments*, an academic journal of MIT Press.

Researchers examined participants' reactions to games played on standard [video game](#) systems — PlayStation 3 and XBOX 360 with gamepads — and games played with the newest motion-based game systems, including Sony's Move, Microsoft's Kinect and Nintendo's Wii. The new systems have such interactive features as gyroscopes, voice recognition, infrared cameras, body scanners and motion sensors.

"There was a drastic difference in enjoyment between the newer and older systems," said lead author Daniel Shafer, Ph.D., assistant professor of communication studies in Baylor's College of Arts & Sciences. "We looked at how the variables interacted. If you envision a chain, perceived reality influenced the sense of presence and led to greater enjoyment."

Perceived reality differs from spatial presence in that "a game's sounds and graphics might be very realistic, but you don't necessarily have the feeling you're in the environment," he said. "'Presence' is 'How much do I feel I've entered a different world, even though I know it's not real?"

How much can I lose myself in this new world?"

The study is among the first to look at the newest motion-based game technology, said co-author Corey Carbonara, Ph.D., a professor of communication studies at Baylor and a member of the Academy of Digital Television Pioneers.

"Some of the systems were just getting introduced as we were doing the study," he said.

In the first experiment, 160 undergraduate students from Baylor University played golfing and racing video games on standard gamepad-based consoles, then played the games on the newer motion-based systems. The research sample was split evenly between males and females, with an average age of 20 years.

"It worked pretty much the way we expected," Shafer said. "Games with joy sticks and gamepads were the lowest in presence and enjoyment."

In the second experiment, researchers focused solely on differences among the newer systems — Wii, Move and Kinect. Researchers randomly assigned 88 participants to play a three-dimensional boxing game on one of the three systems. Kinect, which possessed the highest level of interactivity — including punching, dodging, side-to-side shifting and guarding the face with the hands — was perceived as much more realistic and enjoyable than the others. Move and Wii did not differ significantly in scores of reality, enjoyment or spatial presence. Again, the sample was split evenly between males and females with an average age of 20.

"We expected more of a difference between Move and Wii," since Move is newer and the motion-sensing technology is much more advanced, Shafer said.

One reason might be that the Move game chosen for the study was not a first-person game (it was the only one of its genre available at the time), while the others were, Carbonara said.

He said that the study shows that perceptions of naturalness are key to enjoyment, and that in some cases, it would feel more natural to add a type of controller suited to an activity, such as a sword. But Carbonara said that games in which the players make such movements as dancing or running, motion-based interactions without hand-held controllers are more natural. Moving toward a more natural user interface between the player and the game world can create a more immersive, realistic and fun experience, the authors said.

**More information:** To view the research questionnaire, visit [www.surveymonkey.com/s/MOVEKINECT](http://www.surveymonkey.com/s/MOVEKINECT)

Provided by Baylor University

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