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**An Esports edge?**

### **UW-La Crosse study reveals cognitive gains from competitive gaming**

Written by UW-La Crosse University Marketing & Communications

Esports — organized, competitive video gaming — has rapidly evolved from a niche hobby into a global industry. With professional leagues, international tournaments and millions of devoted fans, the global Esports market is predicted to grow from $649 million in 2025 to over $2 billion by 2032, according to [Fortune Business Insights](https://www.fortunebusinessinsights.com/esports-market-106820).

Amid this rapid expansion, Han Kim, assistant professor of [exercise and sport science at UW-La Crosse](https://www.uwlax.edu/academics/exercise-and-sport-science/), is examining the potential benefits of Esports beyond entertainment — specifically, their impact on cognitive and motor performance.

In a recent study, Kim investigated how experience in Esports might influence perceptual-motor skills — the abilities that allow us to receive, process and respond to sensory information through physical movement. These skills are foundational not only in traditional sports but also in many everyday activities.

To explore this, Kim compared two groups of college students: 10 experienced gamers and 10 non-gamers. He measured their performance in two areas: coincidence anticipation timing (the ability to accurately predict and respond accurately to a moving object arriving at a target point) and reaction time (the speed of response to a visual stimulus).

While no significant difference was found in coincidence anticipation timing between the two groups, experienced gamers showed significantly faster reaction times — responding about 30 milliseconds faster on average in simple reaction tasks and 40 milliseconds faster in choice-based tasks. These findings suggest that regular Esports play may sharpen the brain’s ability to quickly process and react to visual information.

“This research contributes to a growing body of evidence that Esports can offer meaningful physical and cognitive benefits, particularly in enhancing perceptual-motor skills,” explains Kim. “It’s important to understand that perceptual-motor skills are not limited to gaming activities — they’re vital for children’s cognitive, social and physical development.”

Kim notes that perceptual-motor development plays a key role in how children explore their environment, communicate and interpret sensory input. Strengthening these skills through targeted activities — including certain video games — could help support academic success and overall development. Moreover, gaming may offer unique advantages for individuals with intellectual disabilities by improving attention, memory, eye-hand coordination, fine motor control, confidence and motivation, says Kim.

Kim stressed that his study did not measure the maximum amount of time participants spent gaming — a key point, given that excessive play has been linked to negative outcomes. Previous research into behavioral addictions, for example, found that individuals who gamed for an average of 33 hours per week exhibited high levels of psychological distress. While gaming may offer cognitive and motor benefits, Kim notes that these advantages likely depend on the quality and amount of gameplay.

While many studies have highlighted the broader advantages of gaming, relatively few have examined how Esports specifically impact perceptual-motor abilities — an area Kim says is often overlooked due to the wide range of skills involved.

His study adds valuable insight that could inform the design of Esports-specific training programs, helping players — and perhaps coaches and educators — better understand how to build routines that enhance these skills.

Importantly, the research also supports and expands on previous findings that long-term Esports participation may lead to structural brain changes in regions associated with perceptual-motor performance. Since these skills involve complex integration of sensory input and motor responses, Kim believes Esports could be a powerful tool in developmental interventions — particularly for children with perceptual-motor delays.

Although the study didn’t find significant differences in coincidence anticipation timing, Kim emphasizes that further research is needed. Notably, the participants in this study were not professional gamers. In contrast, his earlier studies involving professionals suggest that long-term Esports training may improve both cognitive and physical abilities, including peripheral perception and anticipation timing.

“The performance of professional athletes is remarkable, and I realized that this amazing performance can be found and observed in Esports too,” says Kim.