

# Researchers help to bridge the gap between psychology and gamification

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A multi-disciplinary research team is bridging the gap between psychology and gamification that could significantly impact learning efforts in user experience design, healthcare, and government.

The research, conducted by researchers at the University of Waterloo and the University of Minnesota, has integrated models from psychology with [human-computer interaction](#), which allows for a more deliberate, interactive connection between the two disciplines in the understanding of gameful [experiences](#).

Gamification is the use of game elements in applications that are not games. For example, a user experience designer can borrow elements from games, such as quests, stories, and badges, to motivate users to interact with a product, system, or service.

Gameful experience is the state a person is in when interacting with a gameful system, now defined as an interactive state. Gameful experience occurs when a person is engaged in meaningful, fun, and achievable goals that motivate them for learning and working.

"Clarifying and defining this term will provide a unifying foundation for any future work on gamification and help psychologists, [user experience](#) designers, and game developers better understand each other," said Lennart Nacke, professor in Communication Arts and director of the Human-Computer Interaction in Games research group at Waterloo. "Gamefulness is often loosely defined, relying on researchers applying

their own intuitive understanding of games."

"The historical, inconsistent use of the term gamefulness by people working in the field has caused confusion and hindered progress in this important area."

Vital to their unifying approach is the understanding that a gameful experience is a state resulting from the interaction of three psychological characteristics: perceiving presented goals to be non-trivial and achievable, being motivated to pursue those goals under arbitrary externally-imposed rules and believing that one's actions within these constraints are voluntary.

The researchers examined literature and practices—from design to player experience to psychological states—to come up with the key characteristics that define gameful experiences.

With a unifying concept, researchers, designers, and developers of gameful systems will work more effectively.

"Clarifying the terminology will help us create more gameful systems which will help people use this kind of technology to learn more effectively," said Gustavo F. Tondello, co-author and a Ph.D. candidate in Computer Science at Waterloo.

The paper, *Defining Gameful Experience as a Psychological State Caused by Gameplay: Replacing the Term 'Gamefulness' with Three Distinct Constructs*, by Nacke and Tondello with Richard N. Landers, Dennis L. Kappen, Andrew B. Collmus, and Elisa D. Mekler, was recently published in the *International Journal of Human-Computer Studies*.

**More information:** Richard N. Landers et al, Defining gameful

experience as a psychological state caused by gameplay: Replacing the term 'Gamefulness' with three distinct constructs, *International Journal of Human-Computer Studies* (2018). [DOI: 10.1016/j.ijhcs.2018.08.003](https://doi.org/10.1016/j.ijhcs.2018.08.003)

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