

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

State vs. Trait: Examining Gaming the System in the Context of Math Perception Tasks

Permalink

<https://escholarship.org/uc/item/4vh2r6nk>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 43(43)

Authors

Botelho, Anthony
Chan, Jenny Yun-Chen
Trac, Cindy
et al.

Publication Date

2021

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

State vs. Trait: Examining Gaming the System in the Context of Math Perception Tasks

Anthony Botelho

Worcester Polytechnic Institute, Worcester, Massachusetts, United States

Jenny Yun-Chen Chan

Worcester Polytechnic Institute, Worcester, Massachusetts, United States

Cindy Trac

Worcester Polytechnic Institute, Worcester, Massachusetts, United States

Avery Closser

Worcester Polytechnic Institute, Worcester, Massachusetts, United States

Hannah Smith

Worcester Polytechnic Institute, Worcester, Massachusetts, United States

Kathryn Drzewiecki

Worcester Polytechnic Institute, Worcester, Massachusetts, United States

Erin Ottmar

Worcester Polytechnic Institute, Worcester, Massachusetts, United States

Abstract

In the development and analysis of interventions designed to improve student learning, it is important to consider potential influences of student behavior. Unproductive behaviors, such as “gaming the system,” have been studied for their potential impacts on the measurement and assessment of student knowledge within these interventions. Conversely, less attention has been given to factors that may influence gaming behavior. Gaming may be attributed to student-level traits, but could also be a temporary state brought on by systemic causes such as the perceived difficulty or presentation of a problem. We leverage prior research in this area to develop a data-driven measure of gaming and address whether this behavior occurs as a “state” or “trait” within a randomized controlled trial. We find that these factors are differential across the two study conditions, suggesting that context contributes to the underlying causes of gaming behavior.