

Game-based and Gamified Assessments: Advances at the Frontier of Psychometrics

Call for Papers: *International Journal of Selection and Assessment*

Guest Editors:

Richard N. Landers, University of Minnesota (rlanders@umn.edu)

Diana R. Sanchez, San Francisco State University (sanchezdianar@sfsu.edu)

High quality measurement of psychological constructs is of vital importance in many domains, especially in the organizational sciences, where it is used for high-stakes decision-making like hiring and promotion ([Farr & Tippins, 2010](#)), and in education, where it is used for student knowledge and skill assessment both formatively and summatively ([Reynolds, Livingston & Willson, 2009](#)). Traditional measurement methods, like rating scales, tests, and interviews, are typically employed for such measurement, but these methods bring many limitations. Rating scales, for example, are often criticized as boring and repetitive ([Sinickas, 2007](#)), interviews suffer from a variety of interviewer biases ([Levashina et al., 2013](#)), and so on.

Two closely related research areas, game-based assessment (GBA) and the gamification of existing assessments, have recently emerged as promising directions for applied measurement with the potential to address such concerns. Both directions merge the science of high-quality psychometric assessment with research coming from the interdisciplinary field of human-computer interaction, particularly in the area of game design. Although related, both researchers and practitioners in these areas take slightly different approaches to this integration.

Gamification is a broad term and refers to the addition of game design elements in non-game contexts ([Deterding et al., 2011](#)). The gamification of assessment thus involves the modification of an existing non-game assessment by adding game elements to the assessment itself. This latter type of gamification includes everything from the addition of game elements to situational judgment tests used for hiring ([Georgiou, Gouras & Nikolaou, 2019](#); [Landers et al., in press](#)) to the conversion of student assessments into digital board games ([Kocadere & Cagler, 2015](#)).

In a sense, the addition of GBA to an existing employee selection or student assessment process can be considered a type of gamification, i.e., the gamification of assessment processes rather than the gamification of assessment. This distinction is critical, because GBA development is of significantly greater complexity in comparison to assessment gamification. GBA promises more fully formed start-to-finish assessment experiences in which a game is played and won or lost, and scores produced by the game can be used meaningfully. The rhetoric surrounding GBA even suggests that it can bring other

benefits, such as simultaneous high-quality measurement of multiple constructs while eliminating undesirable types of bias, such as adverse impact on membership in protected classes ([pymetrics, n.d.](#)), or better capture the real-world expression of targeted traits ([Shute et al., 2016](#)). Proponents of artificial intelligence methods, such as machine learning and natural language processing, also contend that the data collection and curation opportunities within GBA are much greater, due to the much higher volume of behavioral information captured by GBA, which may further increase their value ([Keehn & Claggett, 2019](#)).

Despite these significant promises, relatively little research is available evaluating either gamified assessment or GBA, particularly in applied contexts with rigorous methodology. Thus, this special issue aims to explore the value of these methods, broadly defined.

For this call, we encourage submissions on the following topics, which is not an exhaustive list:

- Validity evidence ([AERA, APA & NCME, 2014](#)) supporting gamified assessment processes, gamified assessments, and GBAs, which includes:
 - evidence from the nomological net, such as discovery of meaningful patterns of convergent and discriminant relationships
 - evidence from response processes, such as analysis of think-alouds and user studies
 - evidence from internal structure, such as investigations of factor structure and reliability
 - evidence from test consequences, such as the investigation of causal effects in the use of such tests upon employee performance and student achievement
- Design and development processes involved in the creation of GBAs, the gamification of assessments, or the gamification of assessment processes
- Bias in gamified assessments and GBAs (e.g., adverse impact by race, gender, prior experience with games)
- Modern measurement methods applied to gamified assessments and GBAs (e.g., machine learning, natural language processing)
- Practical issues faced related to the deployment of gamified assessments and GBAs in applied settings (i.e., issues arising from the use of these assessments in authentic student, employee, or job applicant contexts)
- Reactions to gamified assessments and GBAs

Additionally, submitted manuscripts should be within the context of the *International Journal of Selection and Assessment's* broader goals and author guidelines. In particular, we emphasize the following:

- Single, cross-sectional studies with the exclusive use of self-report measures will be desk-rejected. Cross-sectional studies at a single time point must incorporate multiple sources of data in addressing their core hypotheses (e.g., GPA, job performance, or external ratings in addition to self-report data) or multiple time-points.
- Use of open science methods is encouraged, which includes filing pre-registrations, and providing access to data and/or analytic code (all of which can be done via <http://osf.io>).
- Papers finding “no significant difference” are encouraged, provided that the methodology used to obtain such a finding was of high quality. Alternative approaches, such as equivalence testing

and/or Bayesian methods, are also encouraged if those approaches are the best choice for a given research question or hypothesis.

Submission Types

IJSA accepts papers of two major types, both of which are encouraged for this special issue call.

- Feature Articles include empirical studies, review articles, and theoretical expositions.
- Information Exchange articles include any of the following: (1) short empirical papers reporting reliability and validity evidence for specific measures, normative data for groups of special interest (specific occupational groups, men, women, various ethnic groups) etc.; (2) replication studies, (3) illustrations, (4) select book reviews, (5) position papers, and (6) short papers from practitioners.

If you are unsure if your submission would be appropriate for the SI, or whether to submit it as a Feature Article or Information Exchange article, please see IJSA's current [author guidelines](https://onlinelibrary.wiley.com/page/journal/14682389/homepage/forauthors.html) (<https://onlinelibrary.wiley.com/page/journal/14682389/homepage/forauthors.html>) and/or contact the guest editors to discuss. It is most helpful in such discussions if you include a prospective title and abstract. Additionally, **book reviews will not be accepted** under this CFP.

Anticipated Publication Timeline

To be considered for the Special Issue, manuscripts must be submitted between August 1 and October 5, 2020. Papers for this Special Issue cannot be submitted prior to August 1, 2020.

- October 5, 2020 Initial submission deadline
- December 7 Initial reviews completed and revisions invited
- February 22, 2021 Revisions due
- Mid-2021 Anticipated publication window

Manuscripts should be submitted electronically at: <https://mc.manuscriptcentral.com/intjsa>

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