

# **Instructional Gamification Scale for K-12 Teachers: Development, Validation and Measurement Consistency**

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## **Abstract:**

The integration of gamification in instruction has rapidly gained wide interest and applications from teachers across different levels and contexts of K-12 schools. Measuring gamification is essential to assess its effectiveness in engaging students and enhancing learning outcomes. Few studies have yet developed the instruments for examining the individual teachers' instructional use of gamification in classroom teaching. This study developed and validated the Instructional Gamification Scale (IGS) for K-12 teachers. The IGS items were developed through collaboration with teachers, guided by the relevant literature, CAEP (2022) standards, and Danielson's (2007) teaching framework, and refined by experts. They covered the full range of the central aspects of K-12 teachers' gamification use in instruction. The initial IGS was used to collect the data from 80 teachers. The data were investigated with exploratory factor analyses, reliability tests, and multilevel analyses. With the validated factor structure, the final 26-item IGS comprises five distinct dimensions of gamification in classroom teaching, instructional strategies, lesson planning, enhancing student skills and personal growth, and assessment. The IGS subscales demonstrate acceptable to excellent reliability, confirming its effectiveness in capturing the range and intensity of gamification use. Results from t-tests and ANOVAs show no statistically significant differences among most demographic variables, revealing its homogeneity in measuring constructs, and capacity in accounting for diversified and contextual variations. The IGS can be a reliable and valid instrument for assessing K-12 teachers' gamification use. It can be used to generate comprehensive and useful information, and guide teachers in effectively incorporating gamification into their teaching.

## **Keywords:**

Gamification, scale development, Instructional Gamification Scale, K-12 teachers.