

1159-97-77

Kyeong Hah Roh* (khroh@asu.edu), School of Mathematical & Statistical Sciences, Arizona State University, Tempe, AZ 85287-1804, and **Yong Hah Lee** (yonghah@ewha.ac.kr), Department of Mathematics Education, Ewha Womans University, Seoul, South Korea.
Undergraduate Students' Logical Consistency in Mathematical Contexts and its Relation to Their Experience of Proof-Oriented Mathematics.

By logical consistency we mean individuals' capacity to self-organize their thinking to have no logical contradiction. We developed an online instrument to assess undergraduate students' logical consistency while they are evaluating statements and validating arguments in mathematics contexts. The online instrument was administered to 167 undergraduate students from 3 universities in the United States with 8 different mathematics courses at the end of the semester either in Fall 2019 or in Spring 2020. We first detail the process of designing the online instrument and scoring rubrics. We then report the survey results, focusing on how differently students displayed logical consistency in terms of (1) the number of proof-oriented courses they had taken, (2) their grades of the most advanced mathematics course that they had taken, and (3) their major areas of study. We also discuss implications of this study for the teaching and learning of proof-oriented mathematics courses. (Received July 29, 2020)