

1067-G1-2239

Kyeong Hah Roh* (khroh@math.asu.edu), School of Mathematical and Statistical Science, Arizona State University, P.O. Box 871804, Tempe, AZ 85287-1804. *From Evaluating Proofs to Constructing Proofs*. Preliminary report.

The purpose of this study is to introduce an instructional sequence designed to help undergraduate students write proofs. Students in an introductory real analysis class participated in a semester long teaching experiment in spring 2010. Although some contents were provided by a traditional lecture style, instruction in the class was mainly given by an inquiry approach, in which students first worked together in small groups and later the whole class discussion followed. Within the group discussions, students were often asked to (1) evaluate if given (erroneous) arguments are legitimate as mathematical proofs; (2) complete a proof using given key ideas; (3) complete a proof using the given proof format; and finally (4) construct a proof without any instructional scaffold. To assess individual students' progress in proof writing, homework and exams were analyzed and task-based interviews were also conducted in the 7th and 15th weeks of the semester. From the data analysis reveals the improvement in individual students' proof writing as well as their comprehension of proofs. This presentation will address how the instructional sequence helped students enhance their ability in proof writing. (Received September 22, 2010)