

1116-Q5-2097 **Jeffrey D Pair*** (jeffrey.pair@mtsu.edu). *Experiencing the Roles of Proof*.

Proof serves many roles for the mathematics community. Scholars have noted that proof supports mathematicians in verifying, discovering, communicating, etc. . . (de Villiers, 1990). How can mathematics classrooms be structured so that students experience the various roles of proof? As part of a qualitative study, we investigated written reflections on an end-of-semester assignment from undergraduates in an inquiry-based transition-to-proof course. Students reflected on instances during the course when they engaged in different roles of proof. This presentation will serve to highlight the results of this work by describing activities that engaged students in verification, communication, and discovery. For instance, students described how considering the truth of classmate’s conjectures supported them in using proof as a means to gain conviction in a mathematical claim. Instructions asking students to “prove, disprove, or salvage” a mathematical claim supported them in making mathematical discoveries. Students described how two instructional activities, a group proof activity and a critiquing activity, provided them opportunities to experience proof as communication. References: de Villiers, M. D. (1990). The role and function of proof in mathematics. *Pythagoras*, 24, 17–24. (Received September 21, 2015)