

1125-N1-2658

**Hyejin Park\*** (hjpark3@uga.edu), Athens, GA 30602. *One College Student's Decision-Making in Selecting Proof Methods in Proof Construction*. Preliminary report.

The purpose of this study was to test how Schoenfeld's (2010) theoretical framework of decision-making consisting of three components – goals, orientations, and resources – can be extended to examine how and why college students chose a certain proof method to use among various proof methods when attempting to prove mathematical statements. To do this, I purposely looked at one student's decision-making behaviors in selecting proof methods while proving eleven statements given over two interviews. The interviews were conducted after the student was taught six proof methods (direct proof and proof by contrapositive, contradiction, cases, induction, and counterexample) through a transition-to-proof course. In the interviews, the student was also asked his thoughts about the proof methods, experiences with the methods, and proof method preferences. The results show that his knowledge of proof methods largely influenced his decisions except when he prioritized his preferences for particular methods or desire for efficiency. Such results show this framework is useful as a tool for explaining one's behaviors in such decision-making situations. (Received September 20, 2016)