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Bonnie Gold* (bgold@monmouth.edu), Mathematics Department, Monmouth University, 400 Cedar Avenue, West Long Branch, NJ 07764-1898. *Addressing student difficulties with negating mathematical statements and translating statements from English to symbolic form.* Preliminary report.

Psychologists have studied difficulties people have with reasoning skills generally, and in particular with negating statements, but have not specifically studied these issues in mathematics majors. I have been teaching our Introduction to Mathematical Reasoning, which is primarily taken by freshman mathematics majors, since 2005. Generally the course is successful in introducing students to proof. However, it has been less successful in getting students to correctly state the negation of an "if... then..." statement, and to translate statements from standard mathematical phrasing to symbolic form (to enable them to use truth tables or formal reasoning rules to check their deductions). In this study, based on Harel's DNR-based Instruction Framework, I used different methods for each issue in my two sections this semester (some methods coming from work in psychology, some from work by other mathematicians) to see whether any method improved student learning of these skills. I will discuss this study and some initial analysis of the data I collect this semester. (Received September 13, 2008)