Proposal

The purpose of this study is to compare the difference in the types of logical approaches preferred by Mathematics and Philosophy students as well as each of their maturation within the field.

Hypothesis: There will be an interaction between major and level within major.

The participants of the study will include college aged mathematics majors and philosophy majors. Within each major there will be 2 levels, **novice** and **proficient**. The levels of each student will be determined on the number of logic classes they’ve taken for their major.

Conditions:

|  |  |  |
| --- | --- | --- |
|  | Novice | Proficient |
| Mathematics | Declared Math Major  Have not taken any math above MAT314(Abstract Algebra) | Declared Math Major  Have taken MAT314(Abstract Algebra) and MAT320(Analysis) |
| Philosophy | Declared Philosophy Major  Have not/currently enrolled in PHI170 or PHI230 | Declared Philosophy Major  Have taken either PHI170 or PHI230 and have less than 2 remaining classes for the major. |

The survey will be given to students math students who have not taken

This study will exclude students who have taken logic classes in both fields.

The design of the study will consist of three mathematical proofs of the commonly know Pythagorean Theorem. Participants will then need to rate the three explanations on how convincing they are independent of the other two. This will be a survey study that will also include demographic information related to their majors and previous logic classes taken to determine their level for analysis.

The setting of the study will be in a medium classroom setting, roughly 30 students in each session.

The data will be analysis with a two-way ANOVA to determine if there are significant differences between the fields, or significant differences between level of experience in academic logical thinking.