

1158-97-258

Zoe C Ashton* (ashton.95@osu.edu), 230 N Oval Mall OSU, Dept of Philosophy, Columbus, OH 43210. *Linking IBL and Research through Dialectical Heuristics.*

Hadamard, in “Thoughts on the Heuristic Method,” wrote that “I tried, in other words to discern the rules, that all mathematicians unconsciously follow when they reason, at least the main ones . . . They are on the other hand common sense rules – truisms so to speak.” In this talk, I explore what exactly this ‘truisms’ claim amounts to and how it relates the way mathematicians solve problems and how students should solve problems. In part, I will argue that these truisms are reflected in a certain way that mathematicians conceive of their audiences. Namely that these audiences are universal – the way we solve problems in mathematics is not completely removed from the way we solve problems in dialectical milieus. By viewing our problem-solving practices through the dialectical lens, this can help the expert construct designed tasks to implement in IBL. The core idea is to reveal (a) how mathematical problem solving is dialectical, (b) recognize what the dialectical moves look like, (c) identify what kind of audience is involved in that dialectic, (d) recreate that dialectic in IBL tasks. (Received March 02, 2020)