

- EVELYN ERICKSON, CÉSAR FREDERICO DOS SANTOS, *Logic as a cognitive tool: teaching prospects.*

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The teaching of logic is a topic usually approached by the field of mathematical pedagogy or by the literature on critical thinking and philosophical education. We propose to deal with the topic of teaching logic from the perspective of the epistemology of logic, guided by some metaphilosophical considerations. Our aim is to discuss who benefits from logical training, and what students should learn. We aim to bring together both historical, cognitive and methodological considerations into thinking the role of logic in philosophy, based on the view of logic as a cognitive tool. We give attention to the role philosophers have as educators, by considering the particular context of Brazil, where universities are, in many disciplines, primarily invested in training teachers for basic education.

There is currently a certain status quo in Logic syllabus: classical propositional logic and first-order logic should be taught. While some students learn this easily, most struggle. Seeking to broaden the vision of what it means to teach logic, we have defined the following profiles: (1) logic as a philosophical instrument (following the so-called analytical tradition), (2) logic for expert argumentation (public argumentative competence), (3) logic as a scientific methodology (mapped into “deduction”, from the Peircean scheme of deduction/induction/abduction), and (4) logic for citizens (logic as critical thinking). What objectives, content, and methods are appropriate for each profile? We will articulate these different profiles around the axes of competence in reasoning in natural vs. formal languages, different deductive systems that can be taught, and the philosophical view of logic that underpins with each endeavor, as well as consider the balance between the difficulty of learning certain procedures and the cognitive gain of mastering specific heuristics for solving exercises.

We will present an analysis of the most appropriate skills for different publics (citizens, philosophers, scientists), articulating the distinction between formal logic vs. informal logic, questioning the common assumption that informal logic can be used as motivation for learning formal logic as well as the assumption that skill in formal logic translates to learning critical thinking. Finally, we present an educational proposal for each profile, suggesting, for example, how much symbolic logic is necessary for each cluster of expected skills and what types of exercises (e.g., translation, writing proofs, exercising critical thinking) would be appropriate for each profile. We do not intend to advocate for one profile over others. However, we argue that there is a more appropriate profile for the compulsory logic courses in Brazil (and perhaps elsewhere), considering in particular the social role of philosophy teachers: undergraduate students should complete the course capable and confident that they possess sufficient skills to teach logic in basic education.