Intuitionistic Propositional Logic For Children and Meta-Children, or: How Archetypal Are Finite Planar Heyting Algebras?

I've been using the expression "for children" in titles for some years, and with time it acquired a precise, though unusual, sense. "Children" are "people without mathematical maturity", where these are the main aspects of mathematical maturity: ableness to 1) handle abstract mathematical structures and 2) infinite objects; 3) work axiomatically, 4) generalize, and 5) particularize.

Some techniques for creating versions "for children" of maths "for adults" are described in [1]; the main one is doing two parallel diagrams, one for the general case and another one for a particular, hopefully "archetypal" case.

Finite, planar Heyting Algebras ("ZHA"s) are very good tools for teaching Intuitionistic Propositional Logic (IPL) to children: most non-theorems of IPL have countermodels on ZHAs that are very easy to understand visually, and children prefer to understand tautologies and non-tautologies first, and deductive systems later.

ZHAs are archetypal among Heyting Algebras, but in a sense of "archetypal" that fits only the loosest definitions in [1], sec.16.

"Meta-children" are people who want to study the relation between mathematics "for children" and "for adults" and produce (meta)mathematics for adults from that. The presentation will be mostly about teaching ZHAs and closure operators to "children", with one result for meta-children in the end: that this new sense of archetypalness can be formalized using comparisons of partial orders ([2], last sections).

[1]: Ochs, E.: *Internal Diagrams and Archetypal Reasoning in Category Theory*. Logica Universalis, 2013.

[2]: Ochs, E: *Intuitionistic Logic for Children, or: Planar Heyting Algebras for Children*. Preprint, 2017.

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