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Logic in wonderland: Alice's adventures in wonderland as the context of a course in logic for future elementary teachers.

Clarke, Barbara (ed.) et al., Tasks in primary mathematics teacher education. Purpose, use and exemplars. New York, NY: Springer (ISBN 978-0-387-09668-1/hbk; 978-0-387-09669-8/e-book). Mathematics Teacher Education 4, 85-103 (2009).

Summary: The teaching experiment described in this chapter assumes at the outset that children's literature can be a useful context for teaching elementary ideas of logic while bridging the gap between the abstractness of formal logic and its expression in a real world context. Alice's Adventures in Wonderland, by Lewis Carroll (a unique combination of a logician and a story teller) was chosen for this purpose, based upon a careful examination of its potential. Inspired by The Annotated Alice (Carroll 2000), over 75 additional annotations to Carroll's book were developed, having in mind their employment in an introductory course in logic for prospective elementary school teachers specializing in mathematics. These annotations are in four categories: Logic, Mathematics, General education, and Science. Sample annotations are included. This chapter describes the tasks and activities developed for the course. Data collection instruments were interwoven in the teaching materials development. A sample is included as well. Several results are reported and discussed.

Classification: E39 D89 D59 B52

Keywords: propositional logic; prospective primary school teachers; teaching units; problem posing; problem solving; using children's literature as a means for teaching mathematics; teacher education

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