

A PROPOSAL FOR THE MATHEMATICAL-DIDACTIC TRAINING OF TEACHERS ABOUT LOGICAL KNOWLEDGE

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In the 1960s, as a result of the work of Piaget and Szeminska in the 1940s on evolutionary psychology, there was an increasing interest in the idea that classification and seriation were required for the acquisition of numerical knowledge. There is a strong agreement about the incorporation of such logical knowledge in the early childhood education curriculum, evolving from seriation and classification to patterns and algebraic thinking. In the Spanish context, these notions appeared in the Education Law in 1970 in the early childhood curriculum and were consolidated as part of the mathematical-didactic training of early childhood teachers with a strong Piagetian approach.

However, some authors (e.g., Sarama & Clements, 2009) consider that activities involving logical knowledge are of interest themselves since this knowledge is central to addressing most of the problems one person can tackle. In our research, we focus on the following research problem about teacher education: What knowledge do preservice teachers need to teach logical knowledge in early childhood education? How might teacher education be organised to work with teachers to analyse, design, and manage the teaching of logical knowledge in a functional and articulated way?

To address this question within the Anthropological Theory of the Didactic (Chevallard, 2015), we design a *study and research paths for teacher education* (SRT-TE) about logical knowledge. With this proposal, we expect that the preservice teachers question how to interpret what logical knowledge is in early childhood education, and how to analyse its teaching and learning in these initial school stages. Results from two recent implementations in two Spanish universities show how the questions addressed along this SRP-TE help teachers and educators to progressively build the necessary praxeological equipment to analyse and design activities involving logical knowledge.

References

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