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Title: An inquiry approach to early school mathematics: Criteria for designing activities and evaluating materials

Other Titles: -

Language: Greek

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ISBN: 978-618-5726-04-1

Subject: MATHEMATICS AND COMPUTER SCIENCE, HUMANITIES AND ARTS

Keywords: Math activities / Educational material / Early childhood / Inquiry-based learning / Argumentation

Bibliographic Reference: Skoumpourdi, C. (2023). An inquiry approach to early school mathematics: Criteria for designing activities and evaluating materials [Undergraduate textbook]. Kallipos, Open Academic Editions.
<http://dx.doi.org/10.57713/kallipos-125>

Abstract

There are many reasons that advocate the teaching of mathematics from the first school age and are related to the important role that mathematics plays in our society; to the fact that children from a very young age have the ability and the interest to learn mathematics; as well as to the fact that young children have early informal mathematical knowledge. These early knowledge on the one hand can create the foundations for the learning of formal mathematics and on the other can negatively affect school performance due to their differences (e.g. informal knowledge of different levels). In order to close the gap of possible differences in the early informal mathematical knowledge of young children and to reduce the risk of creating learning difficulties during the formal teaching of mathematics at the higher levels of education, it is suggested that teachers use conscious teaching practices and teaching interventions which to support a quality mathematics education. In this context, the inquiry approach, as an innovative pedagogical practice

for teaching mathematics, proposes the construction of knowledge through collaboration, communication and argumentation, emphasizing not only to the cultivation of the cognitive domain and the acquisition of mathematical knowledge, but also the social and communicative domain, resulting in the cultivation of various abilities and skills, necessary for the student in the present and in the future period of time, for his role as an active, aware and intelligent citizen. The need to support candidates, but also active teachers in the above "requirements" led to the writing of this book. In this book, theoretical, research and educational issues are presented and discussed, necessary for the search, the design, the selection, the evaluation and the preparation for use of (educational) materials and activities, with the aim of approaching basic topics of early childhood mathematics (Numbers and Operations, Patterns, Space, Plane Shapes and Geometric Solids, Length, Area, Statistics and Probability), through the inquiry-based approach.

