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Abstract

There are many reasons for teaching mathematics from early school age and are related to the important role that mathematics plays in modern society, due to the fact that children from a very young age have the ability, opportunity and interest to learn mathematics and due to the fact that they have early informal mathematical knowledge. While this early knowledge, can lay the foundations for learning formal mathematics, it can also have a negative impact on school performance due to its differentiated nature (e.g. informal knowledge at different levels). In order to close the gap of any differentiation in young children's early informal mathematical knowledge and to reduce the risk of creating learning difficulties in formal mathematics instruction at higher levels of education, it is recommended that the teachers use conscious teaching practices and planned instructional interventions that support 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 to the social and communicative domain, resulting in the cultivation of a variety of competences and skills necessary for the student in the present and future time period, for his/her role as an active, aware and intelligent. The need to support both aspiring and practising teachers in meeting the above 'requirements' has led to the writing of this book. This book presents and discusses theoretical, research and educational issues necessary for the search, design, selection, evaluation and preparation for using, materials and activities, in order to approach key topics in early school mathematics (Numbers and Operations, Patterns, Space, Plane Shapes and Geometric Solids, Length, Area, Statistics and Probability), through the inquiry approach.

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