STATISTICAL KNOWLEDGE AND TEACHING PRACTICES OF ELEMENTARY SCHOOL TEACHERS IN THE CONTEXT OF COLLABORATIVE WORK

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SUMMARY OF THE POSTER

Statistics is an important topic in today's world. An active participation in society requires the ability to analyze and interpret statistical data represented in many different ways. In addition, statistics has an important role in several school subjects and supports the development of students' critical reasoning (Batanero, Godino & Roa, 2004). This leads statistics to receive an increased emphasis in the school curriculum. The main aim of its teaching is the development of students' statistical literacy, from an early age (Ponte & Sousa, 2010).

Teachers' mathematical knowledge is an important research topic (Ball, Hill & Bass, 2005). Groth (2007) indicates that, among all the mathematical topics, usually it is in statistics that teachers have weakest knowledge. Since teachers' knowledge is one of the most influential bases for effective teaching, it is necessary to investigate the knowledge needed to teach this topic and how it may develop (Fennema & Franke, 1992; Groth, 2007). As students' learning derives from the way teachers plan lessons, conduct such lessons, and reflect on the whole process of teaching and learning, the study of teachers' practices is also crucial. As teachers' practices are deeply intertwined with teachers' knowledge for teaching, thus this study aims at understanding the development of specialized knowledge for teaching and of knowledge regarding practical instruction of elementary school teachers in terms of statistics education, in their mutual relationship, in a collaborative work context.

The study is based on a collaborative context since this is an important support for teachers to deal with professional problems (Ponte & Serrazina, 2004) as well as an useful strategy for carrying out investigations into professional practice (Boavida & Ponte, 2002). In a collaborative environment the process of joint reflection is likely to support teachers' professional development, as it allows an analysis and discussion of their practices, leading to the clarification of some aspects and contributing for new actions to emerge.

The study follows a qualitative and interpretative methodology, with three case studies of grade 3 and 4 teachers of two different schools. The working sessions group will focus on collaborative discussion and reflection on current curriculum guidelines, as well as on articles and other documents relating to the teaching and learning of Statistics in elementary grades. During these sessions teachers plan lessons for their students which will be screened (via videotaped excerpts) and discussed in order to promote a constant joint reflection. It is expected that collaborative work will promote the development of teacher´s knowledge for teaching. Data collection includes participant observation of collaborative work sessions and of teachers' classes (with audio and video recording); semi-structured interviews with participating teachers, one at the beginning of investigation and another at the end (with audio recording) and the collection of written documents (teachers' diaries, documents produced by teachers and students during classes and documents produced in the collaborative group). Data analysis will be made according to categories of analysis related to teachers' knowledge and practices and statistical education issues, taking into account the theoretical framework and the research questions.

The poster, supported by graphical elements, will present the goals and main ideas of the theoretical framework regarding both teachers' knowledge and practices and statistical education. It will also describe the method used in the study and present some preliminary results.

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