SEMIOTIC ANALYSIS OF ACTIVITIES APPLIED IN THE INSTANCES OF SELECTION FOR THE FIRST INTERNATIONAL STATISTICAL LITERACY COMPETITION

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At the moment, a great diversity of studies recommend to deeply analyze the difficulties of understanding the basic concepts to promote statistical literacy, the meaning of these concepts and the relationships between their meanings, such as those by Ben-Zvi and Garfield (2004), Gal (2004), among others. In addition, the importance of the solution of activities that imply the use and interpretation of multiple tools of Exploratory Data Analysis in basic courses of Statistics has been shown in the last decade, in diverse investigations and publications, as stated by Batanero (2001). In this work, we present an experience carried out during 2009, in which professors and students from two national universities of Argentina (Universidad Nacional del Litoral and Universidad Nacional de Río Cuarto) participated. Besides, professors and students of secondary schools of the province of Córdoba took part in this project.

The main aim was to prepare the students in order to participate in the First International Statistical Literacy Competition (ISLP) organized by IASE, that took place in Durban, South Africa, in August 2009. We elaborated activities for training the students who participated in the different phases of the national selection for the International Competition. These activities were based on the definitions on literacy, reasoning and statistical thinking found in Ben-Zvi and Garfield (2004), on the semiotic analysis methodology proposed by Godino (2003) and on the comprehension of statistical summaries mentioned by Curcio (1989). The activities were oriented to develop abilities for reading, interpreting and drawing conclusions from data, tables and graphs.

The methodology used has allowed us to distinguish the elements of meaning and their relationship that are present in each task, either explicity or implicity. These relationships between elements, in general, are not considered at the time of designing activities to be presented to students. This type of analysis allowed us to determine the level of complexity of each task and, in this way, it helped us to make decisions at the time of selecting discussion and evaluation activities in the class.

Specifically, in this work we present the *semiotic analysis* of an activity, in which four different types of statistical summaries (graphical and numerical) appears. In order to determine the level of comprehension of the students, we organized items of elaboration and multiple choice, with closed answers. Also, by using these activities, we obtained important information in relation to *semiotic complexity* of each item and about the *elements of meaning* in each of them.

We consider that the semiotic complexity that we found in this type of activities, should be considered at the time of planning teaching sequences about stocastics concepts, in all levels of formal education. As a result of this experience, four students were selected to participate in the First International Statistical Literacy Competition of the ISLP, in Durban. It is worth mentionig that one of our students obtained the first position in the 12-14-year category.

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