

DEVELOPING STATISTICAL LITERACY: A DESIGN EXPERIMENT APPROACH IN MIDDLE SCHOOL

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The main objective of this poster is to present an ongoing research to enhance statistical education in middle school for further development of statistical literacy.

Statistics plays a key role preparing young people to interpret and make critical evaluations about media information and to develop students' capacities for reasoning and communication, providing them with techniques and procedures. Different views and goals for Statistics teaching, the latest ideas about statistical literacy (Batanero, 2002; Watson, 2006), and the new Portuguese Mathematics Curriculum (Ponte et al., 2007) were considered to develop a teaching experiment within a three years intervention project implemented in two classes, and the follow up by the teacher/researcher for three academic years.

In the first phase (7th grade) tasks were implemented to detect potential problems in the organization and interpretation of dummy data, plan a statistical study involving real data and analyze the ability of application of statistics to everyday situations. The second phase (8th grade) included tasks aiming at studying the advancements made and examining how the statistical expertise is mobilized to other areas of knowledge and situations. The research will continue in 9th grade, implementing tasks of communication skills in probabilistic context and characterizing how students apply Stochastic reasoning to genetics and gambling situations.

Preliminary results show improvements in students' critical sense, however, statistical thinking, especially when the data relates to everyday situations, continues to have shortcomings. Statistical work with real data, proved to be fruitful taking into consideration the improvements identified in the written and oral performance of students, which meets the ideas of other researchers mentioned in the theoretical context. Results obtained in the first two years will be presented in a poster with pictures of the project phases and extracts of the implemented tasks.

References

- Batanero, C. (2002). Los Retos de la Cultura Estadística. Jornadas Interamericanas de Enseñanza de la Estadística. Buenos Aires. Conferencia inaugural.
- Ponte, J. P. et al. (2007). *Programa de Matemática do Ensino Básico*. Lisboa. ME, DGIDC.
- Watson, J.M. (2006). Issues for statistical literacy in the middle school. In A. Rossman & B. Chance (Eds.), *Proceedings of the Seventh International Conference on Teaching Statistics: Working cooperatively in statistics education*, Salvador, Brazil. [CDRom]. Voorburg, The Netherlands: IASE and the International Statistical Institute.