

## PROJECT-BASED LEARNING APPLIED TO TEACHING STATISTICS

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### INTRODUCTION

For the past few decades, the field of statistics is included in the curriculum for a large number of countries; however, its presence is limited in the classrooms. This is due to many teachers' lack of training in the field, which has a negative impact in the teaching of statistics. To address this matter, Project Based Learning (PBL) appears to be a methodology that increases students' motivation and interest towards the subject by contextualizing exercises with realistic tasks (Batanero & Díaz, 2011).

Several studies have documented the success of this methodology (Evans, 2019; Kingston, 2018). Nonetheless, PBL has been implemented less in the mathematics curriculum than in other curricular areas. For this reason, the present study has the aim to analyse the results of PBL applied to the teaching of statistics among students with ages between 11 and 12 years old.

### METHODOLOGY

The research had an exploratory nature and consisted in the elaboration of a project in which each group of students completed a statistical study about an aspect of their lives that was also close to their classmates' reality. A total of 22 students in the sixth grade of primary school took part in the study, which was held at a public school where teachers follow a traditional teaching method focused on the textbook. To carry out the research, the students were asked to complete a pre-test for researchers to determine students' initial knowledge, and to complete a post-test for researchers to evaluate the effectiveness of PBL. During the implementation of the project, the students were organised in groups of four and worked actively in the selection of the topic, the elaboration of a survey, and the later data analysis.

### RESULTS

The comparative study of the pre-test and the post-test confirmed a considerable increase in the students' statistical knowledge related to the interpretation and elaboration of graphics, frequency tables, and calculation of central tendency measures. These observations provide evidence that the didactic intervention had productive results. Furthermore, it was observed that the groups worked more autonomously when analysing and interpreting the data collected with the survey about the chosen topic.

### CONCLUSIONS

The investigation around the application and validation of different methodologies is a tool of great value in the process of training future teachers because it encourages the design, implementation, and effective management of situation-problems in the classroom. The results of this research show that the implementation of PBL can promote a meaningful learning experience around statistics.

### REFERENCES

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