

## **The interaction of students' and teachers web of reasons while engaging with informal statistical inference tasks in a primary classroom**

### **ABSTRACT:**

Reflecting on the role of statistics in elementary education has led many researchers to identify ways that promote high-quality statistical reasoning with primary children, through the simultaneous handling of concepts such as data and chance. Under those circumstances, statistical inference has received special attention in Statistics Education Research. The kind of inference that has been investigated in primary education is free from formal statistical procedures and known under the term informal statistical inference.

The present doctoral thesis aims to enrich findings in this research field, investigating the formation of informal inference through the lens of student-teacher interaction. To do so, we draw upon the theoretical views of Inferentialism, and more specifically the concept of web of reasons. We address the following questions: Which factors compose students' and teacher's web of reasons, as they make informal statistical inferences while engaging in specially designed tasks? How the above mentioned webs of reasons interact as to formulate the concept of informal inference? How classroom environment delineates reasons' formation and interaction?

To answer these questions, we combine the existing literature concerning informal statistical inference and the lessons drawn from Inferentialism for Statistics Education in order to conduct a design experiment for upper elementary school students. The final aim of such experiment is to systematically capture students' and teacher's reasons that formulate informal inference, considering classroom environment as a part of this system.