In today’s society, it is important that children learn to critically reflect on generalizations from samples. The foundation for this ability can be laid in primary school, by engaging primary school students in making informal inferences about a population based on sample data (informal statistical inference, ISI). This dissertation asks how future primary school teachers can learn to make these inferences, and how they can help their students do so. The dissertation explores pre-service teachers’ knowledge of ISI upon entrance at teacher college, during and after teacher college interventions, and during teaching ISI in primary classrooms.

The results suggest design heuristics for ISI education at the teacher college. Examples are: (1) create awareness of inferential claims, (2) use tangible samples and populations, and (3) use data that require little descriptive analyses when pre-service teachers conduct statistical investigations. Implementing these insights in ISI education at teacher colleges may help teachers to prepare primary school children to participate in society.