

PROBABILITY AND STATISTICS KNOWLEDGE FOR TEACHING, IN SCHOOL TEACHERS PREPARATION IN CHILEAN UNIVERSITIES

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It has been well established in the educational literature that school teachers must acquire the so-called pedagogical content knowledge, in order to teach effectively. The specific knowledge, abilities and tools embraced by this concept in each particular learning area, however, are still under discussion, in particular, in the fields of statistics and probability.

In 2008, LMT project (sitemaker.umich.edu/lmt/home) designed an instrument, based on multiple choice items, intended to measure pedagogical content knowledge in the area of statistics and probability. ReFIP project (refip.cmm.uchile.cl) adapted LMT instrument and administered it to a group of pre-service elementary school teachers, attending 5 Chilean universities, who had already passed the relevant courses in their programs. Results showed a low average achievement of only 38%. This fact motivated us to take a closer look at the preparation that students receive in their undergraduate program studies.

Considering these facts, on one hand, our first goal is to contribute to identify and improve the understanding of the specific knowledge, abilities, and tools needed by statistics and probability school teachers to teach these fields effectively. On the other hand, our second goal is to build an instrument that helps to measure the extent to which pre-service teachers are given the opportunities to acquire this set of elements during their training period.

As for our first goal, research suggests that first year teachers' practice is more effective when training focuses directly on the tasks that children perform at school (Boyd et al. 2009, Grossman 2011). Thus, we build upon Cobb 1992, Garfield and Ben-Zvi 2009, Groth 2007, who, based on the previous premise, identify specific statistical school tasks aimed to develop statistical reasoning in children. As for our second goal, the proposed instrument aims to detect pre-service teacher's opportunities to acquire professional competences, directly related to classroom tasks. Thus, the essence of this instrument corresponds to the research cycle. In order to test the adequacy of the proposed instrument, we applied it to evaluate 9 videotaped classes corresponding to three different teacher training programs in Chilean universities.

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