

School statistics and managerial statistics: Representations and boundary objects

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Statistics at school and in the workplace. Many authors have compared mathematical practices at school with out-of-school practices. They found that these practices differ and that students rarely use the methods learned at school to solve problems outside school (Nunes et al., 1993; Hahn, 2000).

To explore the way students build statistical knowledge between school and the workplace, I draw upon a socio-cognitive framework which claims that learning appears through a dialectical process between conceptualisations in action, embedded in the setting in which they occur, and theories or “scientific” concepts structured into conceptual fields (Vergnaud, 1990). A major question for vocational and professional education is how to link conceptual fields with professional fields (Pastré, 2007).

Statistics and management. Statistics is part of management curricula. In France the statistics course is often disliked by students and the time allotted to it is decreasing, even though firms are facing an increasing flood of quantitative information that has to be analysed and made sense of.

A recent experience of co-writing a book with a colleague, statistician by training but now practicing in the field of marketing (Hahn and Mace, 2012), made me aware of how different our representations of some statistics concepts were. I realised that, even at school, different conceptions co-exist, probably linked to the teacher’s proximity to a professional field.

The research. Drawing upon this experience I designed a three-phases research project whose purpose is to explore the representation of statistical concepts by teacher with different profiles.

Phase 1: Identification of key concepts whose representations differ according to the profile of the teacher.

Phase 2: Explore how these concepts are used in the field of management and identify boundary objects (Akkerman and Bakker, 2011).

Phase 3: Interview teachers with different profiles and explore their representations of concepts identified in phase 1.

In the poster, I intend to present results from the exploratory phase of the research: show examples of boundary objects related to some key concepts

(sample, confidence interval, model ...) and highlight the differences in the representations.

References

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