



BRILL

Impact Sheet

Østergaard, M. K. (2023). Discrepancy between intention and realization in an implementation research perspective: When researcher and teachers talk past each other. *Implementation and Replication Studies in Mathematics Education*, 3(1), 15–44. DOI: 10.1163/26670127-bja10009

1 Problem Addressed

The paper concerns a situation that intervention designers often experience: the intended design of activities does not reach students in the classroom in the intended manner. In the case presented in this study, the author is both the designer and researcher. She describes her experiences with having coached two lower secondary school mathematics teachers prior to a given activity, the implementation of which then fails to include the most crucial aspect — students' reflection — in relation to the aim of the overall research project, which concerned changing students' beliefs about mathematics as a discipline.

Østergaard asks the question of to what extent a retrospective look at the study, exemplified by its typical and critical case through the lens of implementation research can provide any explanation of the phenomena observed of researcher and teachers “speaking past” each other.

2 What is Implemented?

The paper reports on crucial aspects of a longitudinal study on students' beliefs about mathematics as a discipline, drawing also on the construct of overview and judgment as a combination of both knowledge and beliefs (Jankvist, 2015), from the Danish mathematics competencies framework (KOM) (Niss & Højgaard, 2019). The crucial aspects concern the communication with the two teachers implementing the activities aimed at providing the students with more multi-faceted views and beliefs about mathematics as a (scientific) discipline. The paper reports on one specific classroom activity and its different phases, including the content and purposes of these.

3 What is Researched and How?

The classroom activity in question concerns a historically situated discussion of a game of chance as drawing on methods by Pascal and Fermat. From the overall research perspective, the important thing here was the students' shared reflections, also in relation to the historical setting of the activity. However, the teachers did not implement these aspects nor the reflections. This despite of a previously shared agreement between the researcher and the teachers on the importance of this. Hence, the question of the paper, in relation to what went wrong and why researcher and teachers were speaking past each other. The way in which Østergaard addresses this question is by going back into the gathered data and looking into what actually happened during the implementation in the classroom and in the preparation phases with the two teachers — and then looking at this data drawing on the theoretical lenses from implementation research. These include characteristics of the end-uses, attributes of the innovation, and implementation support strategies.

4 Implications and Significance

Østergaard shows that the two teachers' initial beliefs about mathematics as a discipline actually played an important role in how they executed the designed activities. In addition, it is found that the discrepancy in experience between the two teachers, which at first was thought to be a positive asset, did in fact serve as a hindrance in the potential success of the intervention. Furthermore, it is found that some elements of the overall research study to some extent were in conflict with the culture of practice.

Equally important, Østergaard touches upon the question of what qualitative, small-scale studies have to offer implementation research as such. The reported case study of the two teachers illustrates that factors, which may at first seem more or less insignificant or irrelevant but in fact may be crucial for the potential success of the implementation process. Referring to Coburn (2003), Østergaard argues that qualitative, small-scale studies indeed have something to offer implementation research, not least in providing explanations for potential barriers to implementation as intended and thus paving the way for later up-scaling of the innovation.

References

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