

## The Alignment of Beliefs and Teaching Practices among Teachers of Mathematics in Institutions of Preprimary Education and Elementary School

### The Role of Motivational Aspects for the Competence to Act within Educational Mathematical Contexts

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#### Objective of the Project

In the present research project, the alignment of kindergarten and elementary school teachers' beliefs about instruction and teaching practices, is considered as a basic condition for interconnectedness between preprimary education and elementary school (Roßbach 2006; Roßbach & Faust 2004; Hacker 2004). This is especially directed towards mathematical education in the current study. The interdisciplinary research project, aims at finding out how kindergarten and elementary school teachers assess each other's beliefs about teachers' mathematic instruction and mathematical teaching practices. The beliefs and

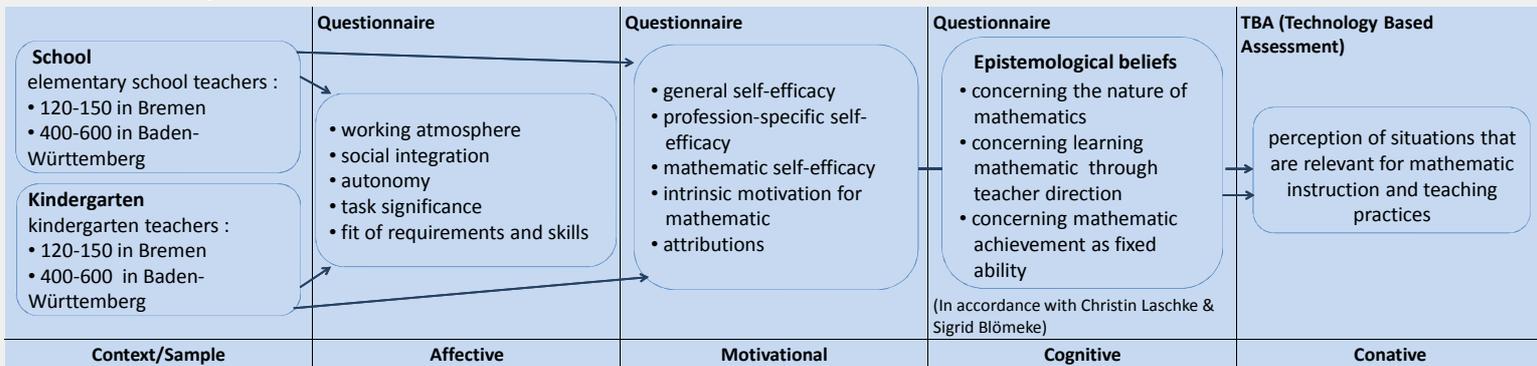
teaching practices among teachers of mathematics in institutions of preprimary education and elementary school will be analyzed and compared. The purpose of this project is to design a well-grounded structural model of epistemological beliefs on teaching mathematics, which will focus on possible ways of thinking and courses of action, as well as on their different levels of development. In addition, possibilities should be identified that may help refine the professional skills of kindergarten and elementary school teachers needed to support interconnectedness.

#### Central Hypotheses

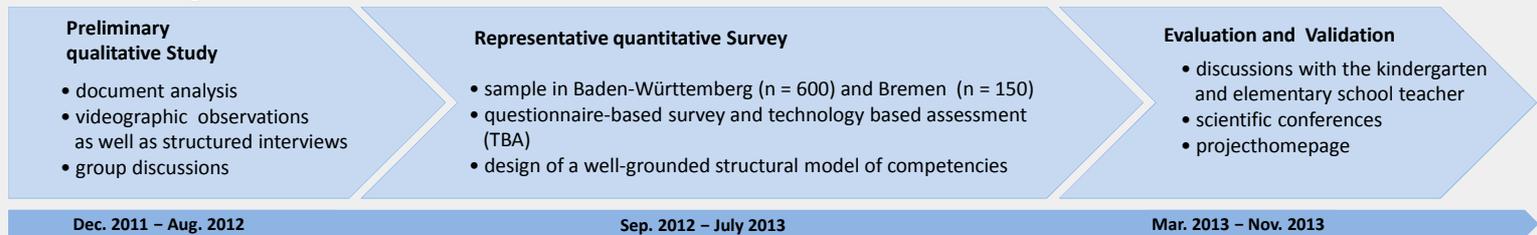
The central hypotheses of this new field of research are:  
**Hypotheses 1:** Kindergarten and elementary school teachers differ in their beliefs about mathematic instruction.  
**Hypotheses 2:** There is a relationship between the closeness of agreement in beliefs about mathematic instruction and similarity of situational perception.  
**Hypotheses 3:** Beliefs about mathematic instruction should prove to have a guiding effect on the behavior in the educational everyday life in elementary as well as primary school.  
**Hypotheses 4:** Self-efficacy moderates the relationship between epistemological beliefs and quality of mathematical instruction.

#### Method

##### Procedure of the Study



##### Cross Sectional Design

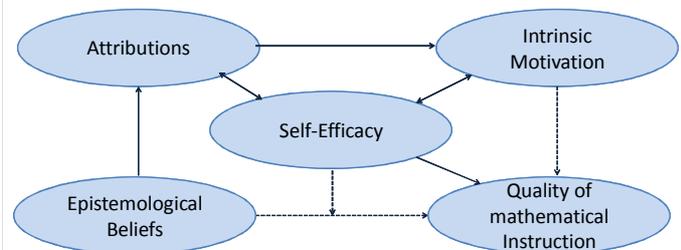


#### Dissertation Project

The assessment of competencies currently neglects the role of motivational aspects and thus constitutes a research desideratum. Therefore, the central aim of the dissertation is to find out the significance of motivational aspects, in terms of self-efficacy, for the competence to act within educational mathematical contexts.

Attributions of success to factors, such as having high ability, positively affect self-efficacy (Weiner, 1984; Schunk & Gunn, 1986; Cheng & Chiou, 2010) as well as intrinsic motivation (Koestner, Zuckermann & Olsson, 1990). Previous studies indicated that attributions influences motivation via the mediator self-efficacy (Schunk, 1994; Bandura, 1997).

Generally, studies provide evidence that self-efficacy is predictive of college students' academic achievements (Lent & Hackett, 1987; Hackett & Lent, 1992). Thus in this study it is expected, that self-efficacy has also a positive effect on the quality of mathematical instruction of kindergarten and elementary school teachers. Intrinsic motivation has a positive effect on the acquisition of elaborate knowledge (Pintrich et al, 1994). Therefore, a positive effect of intrinsic motivation on the quality of instruction is expected. Additionally, it is expected that self-efficacy has a moderating effect on the relationship between epistemological beliefs concerning mathematic and the quality of mathematic instruction. Furthermore, an effect of epistemological beliefs on attributions is expected.



#### The alignment of beliefs and teaching practices among teachers of mathematics in institutions of preprimary education and elementary school, as a condition for interconnectedness between early childhood education and primary school – a representative study of two states.

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GEFÖRDERT VOM

