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**THE CHALLENGING RELATIONSHIP BETWEEN FUNDAMENTAL RESEARCH AND
ACTION IN MATHEMATICS EDUCATION**

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The scientific field of mathematics education has not developed as a pure field of knowledge. The relationships that develop between fundamental research and action are complex and their quality is crucial for the future of this field, its ability to inform educational action in the broad sense being regularly questioned. Those who, for decades, have engaged in didactic research have done so with the desire that their research makes it possible to improve, ultimately, the teaching and learning of mathematics. They have held institutional positions as teachers or teacher educators which in fact forced them to combine research and action. They have lived the associated tensions and solved them in a more or less satisfactory way. Where are we today?

In this invited lecture attached to the ICMI Felix Klein Medal I was awarded in 2013, my intention is to deepen the reflection on the relationship between fundamental research and action. I will do so by revisiting primarily research studies and projects I have participated in, or which are close to me, but also more broadly my professional experience as teacher and teacher educator, as well as all what I learned on this issue from the responsibilities that I have assumed in connection to ICMI. I will discuss how the evolution of the field of mathematics education research, both theoretically and empirically, the reflexive work carried out on actions, the communities and institutions established, have substantially influenced our vision of the relationship between fundamental research and action. More especially, I will show that we can today rely on conceptual and methodological tools much more powerful than was the case a few decades ago to address these issues, and therefore to move forward. However, we cannot deny that such undeniable accomplishments must come to grips with growing social and political pressures exerted on both research and educational systems, based on economic and competitive visions and values of education, often at odds with ours. I will point out tensions and inconsistencies resulting from this situation that are imposed upon all educational actors, and will question how, as an international community, we may counter their negative effects on the establishment of productive relationships between research and action.